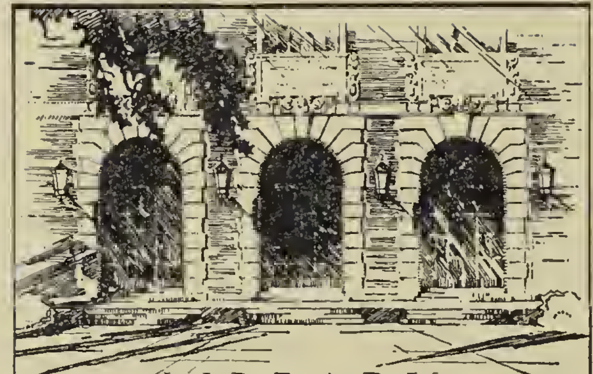

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THE TECHNIC OF PROSTATECTOMY AND ITS RELATION TO MORTALITY

REPORT OF ONE HUNDRED AND SIXTY-FIVE CONSECUTIVE CASES OF PERINEAL PROSTATECTOMY WITHOUT A DEATH *

HUGH HAMPTON YOUNG, M.D.
BALTIMORE

Twenty years ago, the general mortality from prostatectomy was greater than 20 per cent.; now it is almost nil. What has brought about this remarkable decrease in fatalities? It would be interesting to go into a detailed account of the close interrelationship between mortality and technic by all the routes through which the prostate is removed, but time does not permit me to do more than mention the great variety of technics which have been employed by the various suprapubic operators, and I shall have to pass over without discussing the relative advantages of the intra-urethral suprapubic enucleation, as compared with Freyer's removal *en bloc* with the anterior commissure of the more recent resections of the posterior prostatic margin, with occasional division of the anterior part of the trigon as practiced by Legueu, Thompson Walker, Judd and others. I shall have to confine myself to the changes that have come about in my own perineal technic as a result of years of experience. In my first perineal operation in 1897, I followed in the main the technic of Samuel Alexander, the removal of the prostate through median incision without regard to the urethra or ejaculatory ducts. I experienced the same difficulties which others had found in bringing down and completely enucleating the lateral and especially the middle lobe by this technic.

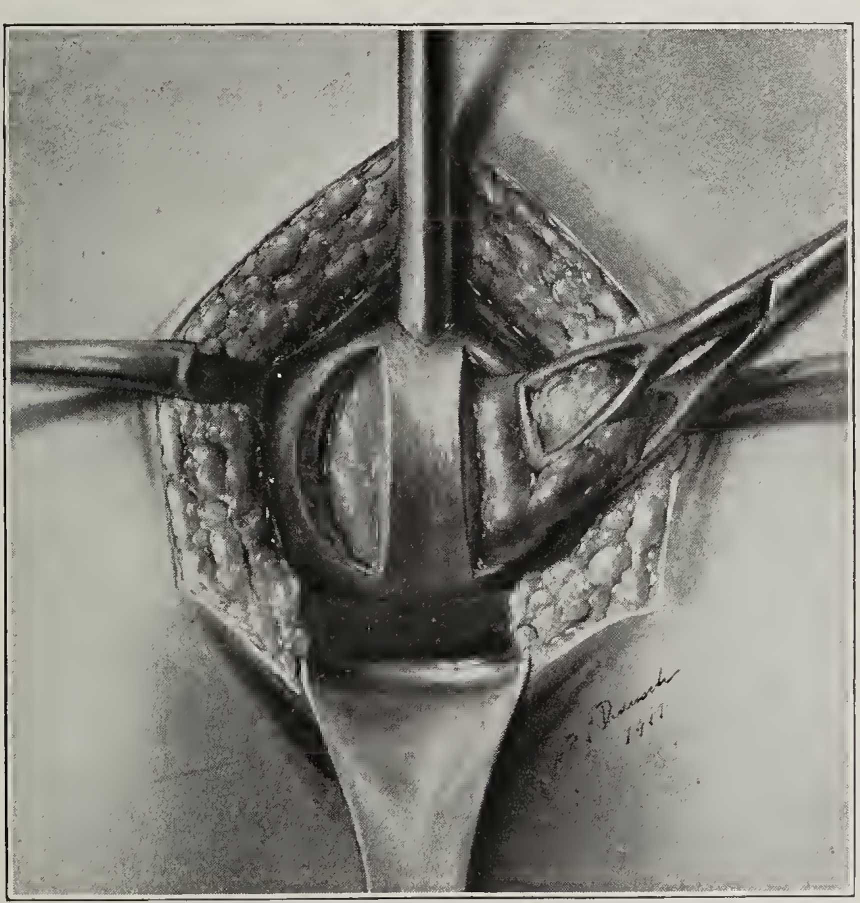

Fig. 1.—Prostate exposed through an inverted V skin incision: tractor introduced, and capsule incised on each side of median line; enucleation of left lateral lobe partially completed.

In 1903, my attention was again turned to perineal prostatectomy and, after performing several operations by the old technic, and being greatly impressed with the need of an instrument to bring down the prostate where it could be reached by the enucleating finger through the perineum, I devised a single bladed prostatic tractor by means of which the prostate was removed in one piece with great ease through the perineum. In this operation, after exposing the prostate through an inverted V perineal incision back of the triangular ligament and external sphincter, thus avoiding the dangers of incontinence and hemorrhage, which apparently followed the median perineal section of Goodfellow and Charles Mayo, an excellent exposure of the posterior surface of the prostate was secured, and by means of an inverted V incision through the capsule and prostatic substance into the urethra the entire prostate was removed in one piece. The details of this technic will be referred to later on. After several prostatectomies had been performed by this method, the double bladed prostatic tractor was devised, and it occurred to me that it would be very desirable to preserve the ejaculatory ducts and urethra intact. I then carried out the bilateral capsular incision with separate exposure and enucleation of the two lateral lobes and enucleation of the middle lobes through one of the lateral cavities,[1] as shown in Figures 1 and 2.

This technic was followed in several hundred cases, and in 1911 I presented in London a detailed study [2] of the ultimate results of 450 cases among which twelve patients were more than 80 years of age, and 164 more than 70, with seventeen deaths, two in patients who were over 85 years of age, one over 80 and six between 70 and 79, and eight under 70 years of age. The cause of death was:

---

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

* Owing to lack of space, this article is abbreviated in The Journal by the omission of several illustrations. The complete article appears in the author's reprints.

[1] Young, H. H.: Conservative Perineal Prostatectomy: A Presentation of New Instruments and Technic, J. A. M. A. **41**: 999-1009 (Oct. 24) 1903.

[2] Young, H. H.: Ultimate Results of Prostatectomy, Tr. Internat. A. Urol., International Congress, London, 1911.

On day of operation, one case: myocarditis, sudden heart failure.
During first week, four cases: pulmonary edema, one; cardiac and cerebral thrombosis, one; cerebral hemorrhage, one; bronchopneumonia, one.
During second week, four cases: pyonephrosis, two; pulmonary thrombosis, one; secondary hemorrhage, one.
During third week, one case: pneumonia, uremia.
During fourth week, three cases: uremia, chronic nephritis, two; pneumonia, patient aged 87.
During fifth week, one case: pneumonia and uremia, man, aged 81.
During seventh week, two cases: hemorrhage from nose and throat, one; patient, aged 88; pneumonia, endocarditis, one.
During ninth week, one case: myocarditis, hypertrophy, dilatation and thrombus of heart.

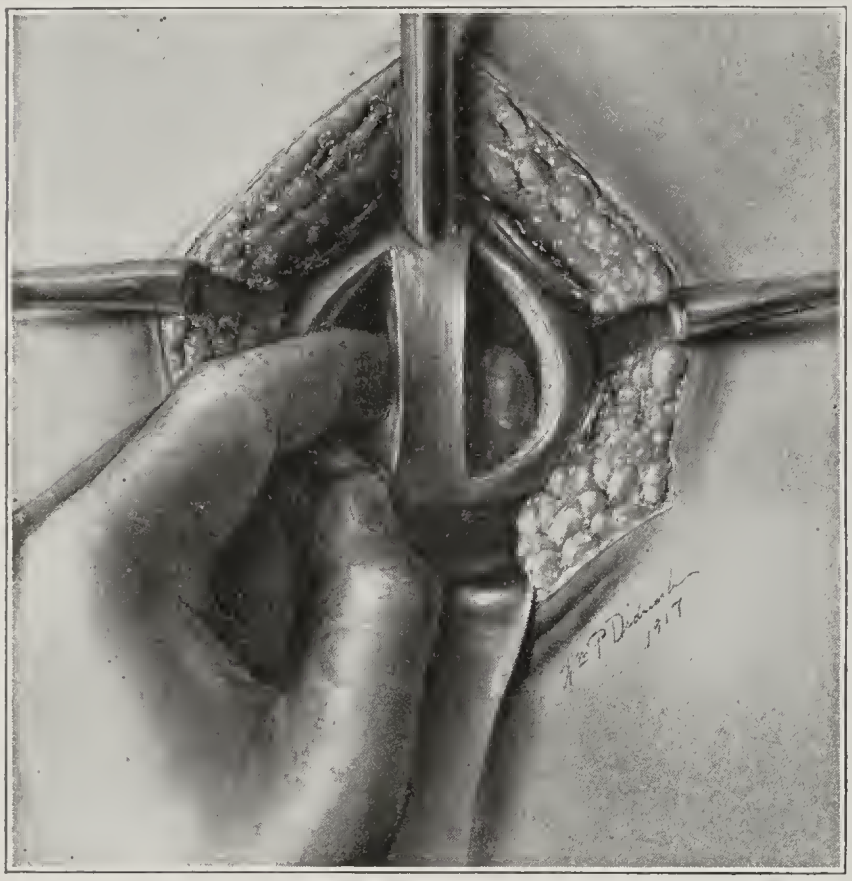

Fig. 2.—After removal of both lateral lobes, the median is drawn down with tractor and pushed into left lateral cavity with index finger in the opposite cavity previous to enucleation of middle lobe.

Necropsies were obtained in nine cases, and eight of these showed severe renal lesions: chronic nephritis, five; pyonephrosis, two; pyelonephritis, one.

Three cases not coming to necropsy gave symptomatic evidence of severe renal lesions—pyonephrosis and nephritis.

Six cases showed at necropsy severe cardiac lesions, and in four cases these were the cause of death: myocarditis, two; endocarditis, one; cardiac thrombosis, one.

Hemorrhages were the cause of death in three cases: cerebral, one; nasal, one; vesical, one.

Pulmonary infections were the cause of death in seven cases: pneumonia, two; bronchopneumonia, one; hypostatic congestion, two; acute pulmonary edema, one; pulmonary thrombosis, one.

This series of cases brought home to us the great danger of renal diseases in patients on whom prostatectomy is contemplated. In our very earliest cases, we had had patients brought in in uremic coma; and, under continuous drainage, assisted by the use of large quantities of water by mouth, beneath the skin, intravenously and by rectum, had seen these patients throw off the uremia and subsequently undergo prostatectomy without difficulty. I proposed a definite plan of preparatory treatment, but no definite means were at hand to determine when these patients were safe for operation because the ordinary urinary tests and even studies of the blood at that time failed to show the functional

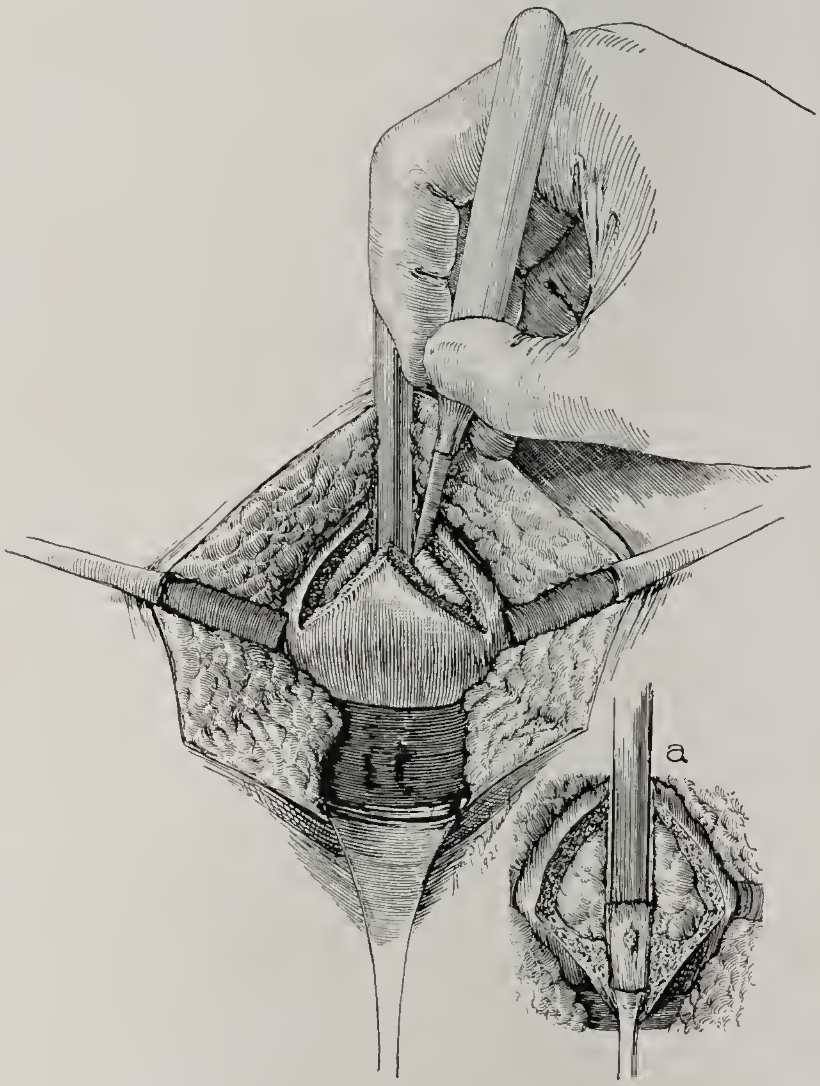

Fig. 4.—Division of the left lateral wall of the urethra with scalpel. This is carried out also on the right side, thus making it possible to draw down the triangular flap with forceps and expose the floor of the urethra and ejaculatory ducts, as shown in inset, *a*, in which the urethra is divided on each side, the fold carried downward, and the lateral adenomas exposed.

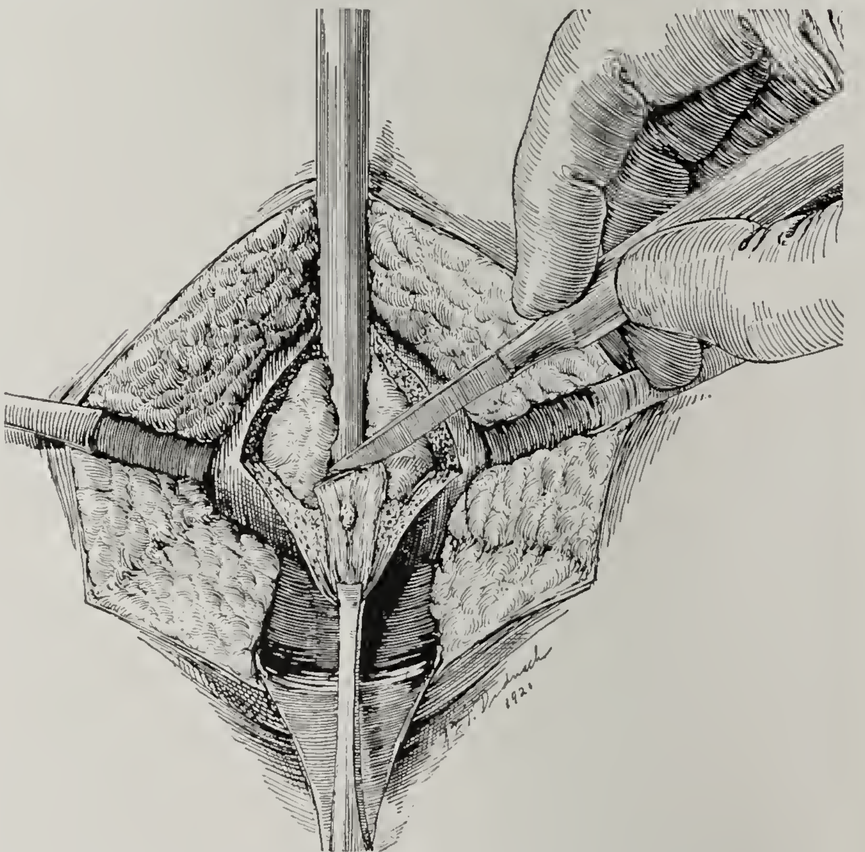

Fig. 5.—The urethra, covering the median portion of the prostate, is here divided transversely with scalpel previous to enucleation.

value of the kidneys. About this time Abel and Rowntree showed the remarkable selective action of the kidney in the elimination of phenolsulphonephthalein, and Rowntree and Geraghty[3] worked out the clinical possibilities and limitations of the test in the urologic department of the Johns Hopkins Hospital, and thus furnished an accurate means of determining when these serious cases are fit for operation. Since then there has been a steady decline in my mortality rate, although operations have been performed in more desperate cases, and more patients with badly impaired kidneys have been operated on.

A recent study of 650 cases in which the phenolsulphonephthalein test was carried out showed: 145 in which on admission the phenolsulphonephthalein test was less than 40 per cent. in the first two hours. Among these there were eight which showed only a trace of phenolsulphonephthalein in two hours; four in which it was less than 9 per cent.; twelve in which the phenolsulphonephthalein was between 10 and 14 per cent., and eighty-one in which it was between 30 and 39 per cent. Among those cases in which the phenolsulphonephthalein test was less than 15 per cent., the average length of preliminary treatment necessary to bring the phenolsulphonephthalein test for two hours above 30 per cent. was on the average thirty days, and among these twenty-four desperate cases there was not a single death as a result of careful preparatory drainage and use of large quantities of water.

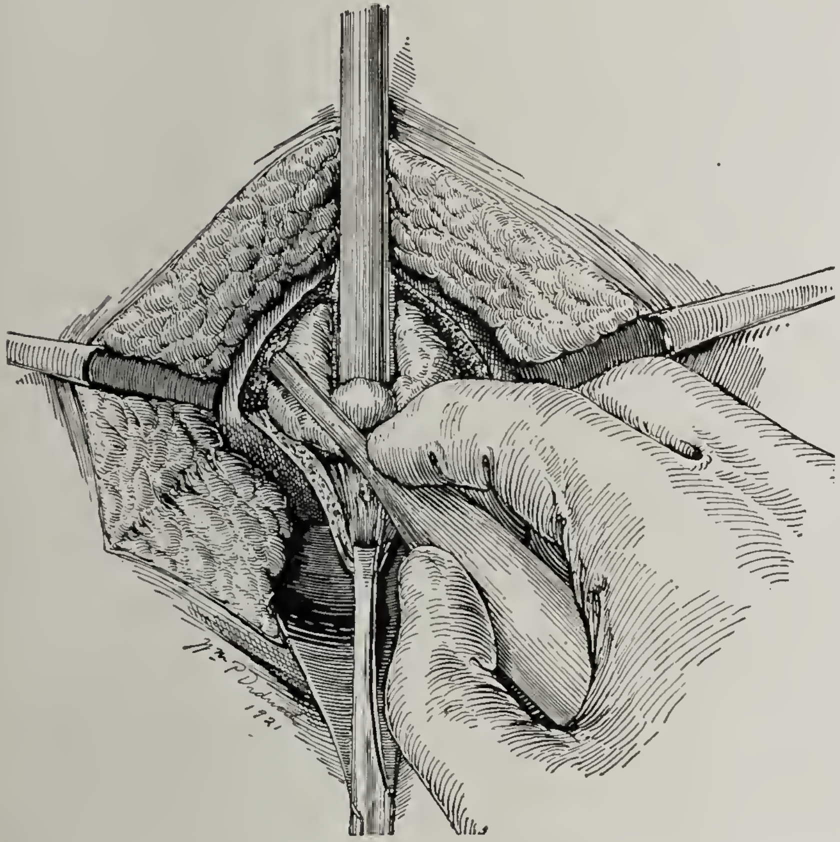

Fig. 6.—Enucleation of lateral lobes begun with blunt dissector.

The London report of 450 cases referred to above showed not only a low mortality, but also an absence of incontinence and very infrequent injury of the rectum, and demonstrated the fact that the perineal operation, if carefully and conservatively performed, would not be followed by these bugbears, concerning which so much had been written in opposition to the perineal route. But there were occasional cases in which the operation had been incomplete, owing to the fact that small lobules sometimes escaped the enucleating finger and remained to produce subsequently a certain amount of obstruction to free urination. Another disadvantage was that certain operators complained of the technical difficulties of removing separately the three different lobes, whereas by means of the suprapubic route the entire prostate could be torn out by either the interurethral or the perilobular technic in one piece, and with greater speed and without danger of leaving behind any hypertrophied tissue.

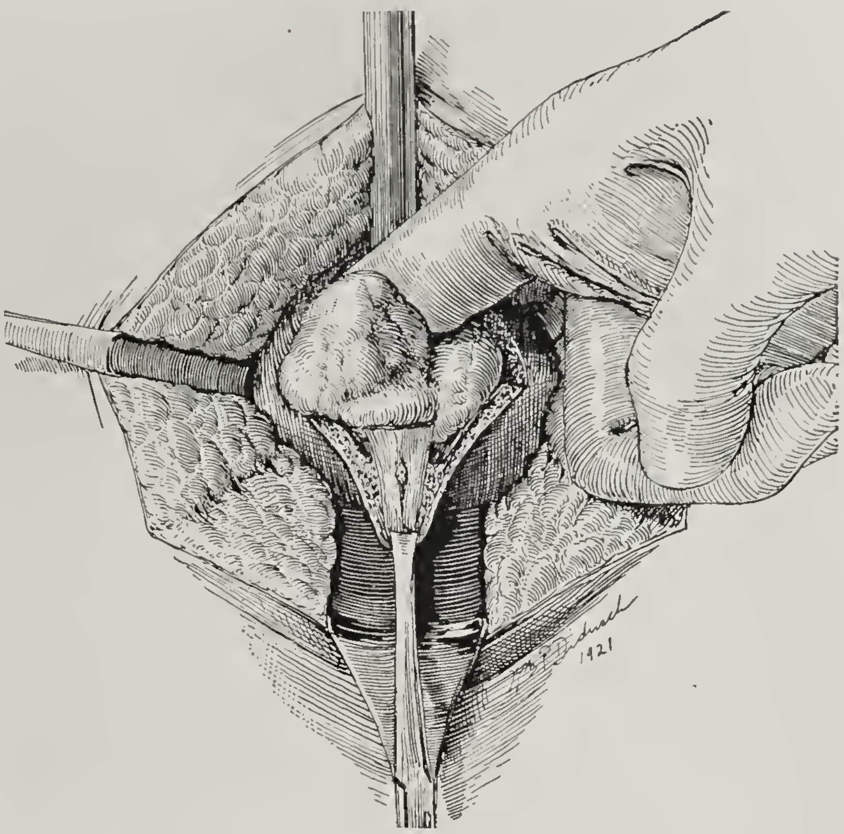

Fig. 7.—Completion of lateral enucleation with the finger

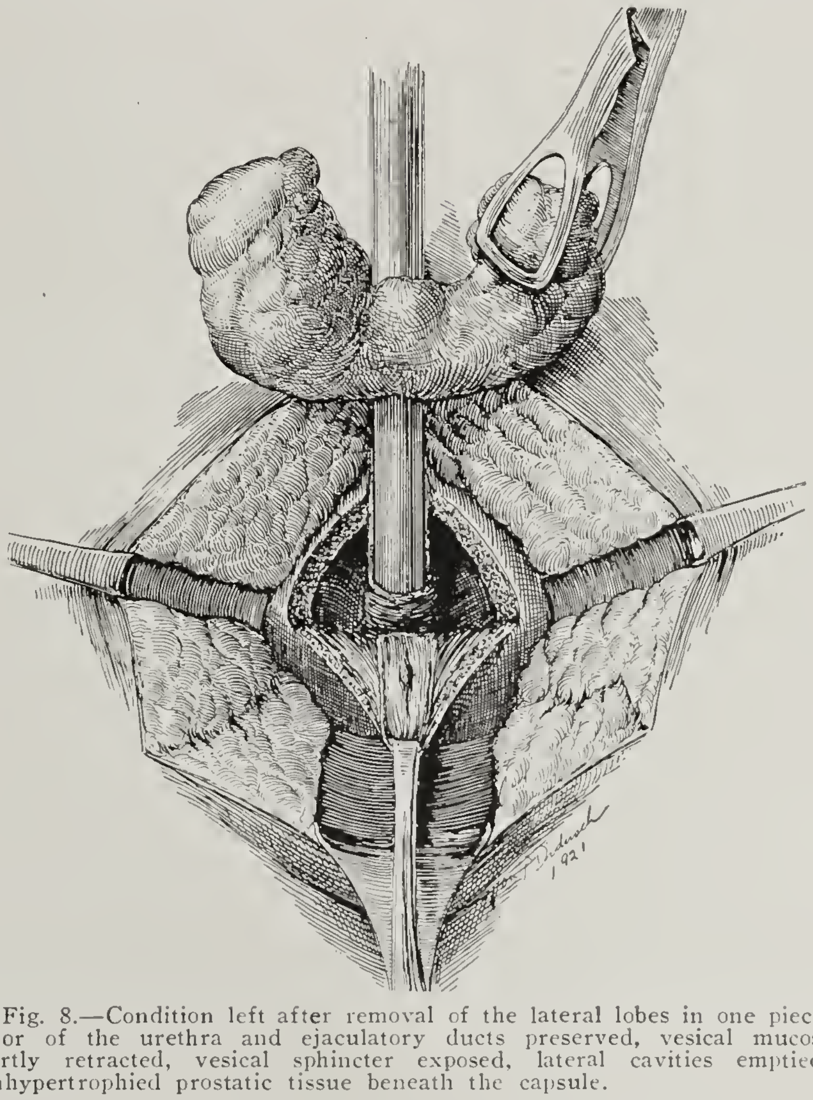

Fig. 8.—Condition left after removal of the lateral lobes in one piece: floor of the urethra and ejaculatory ducts preserved, vesical mucosa partly retracted, vesical sphincter exposed, lateral cavities emptied; unhypertrophied prostatic tissue beneath the capsule.

These reflections caused me to study again the technical possibilities of removal of the prostate in one piece through the perineum, and I wish here to set forth in detail the methods that have been employed. First of all, I reverted to the inverted V capsular technic which I had employed in my first operation with the prostatic tractor in 1903, as shown in Figure 3. Here, after the tractor had been introduced into the bladder, an inverted V incision was made through the capsule into the urethra, and a triangular flap of the prostatic capsule and urethra turned back (Fig. 4), thus exposing the floor of the urethra, verumontanum and the ejaculatory ducts (Fig. 4 *a*). The urethra was split on each side as far back as the middle lobe, and there divided transversely in front of the middle lobe (Fig. 5). By means of blunt dissection, the lateral and median lobes were removed in one piece with great ease (Figs. 6, 7 and 8), with little or no removal of mucous membrane and the absolute protection of the verumontanum and ejaculatory ducts. The wound was closed as usual with drainage of the bladder through a single large perineal tube, and the lateral cavities were packed with gauze to arrest hemorrhage.

---

[3] Rowntree, L. G., and Geraghty, T. J.: An experimental and Clinical Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein, J. Pharmacol. & Exper. Therap. **2**: 579, 1910.

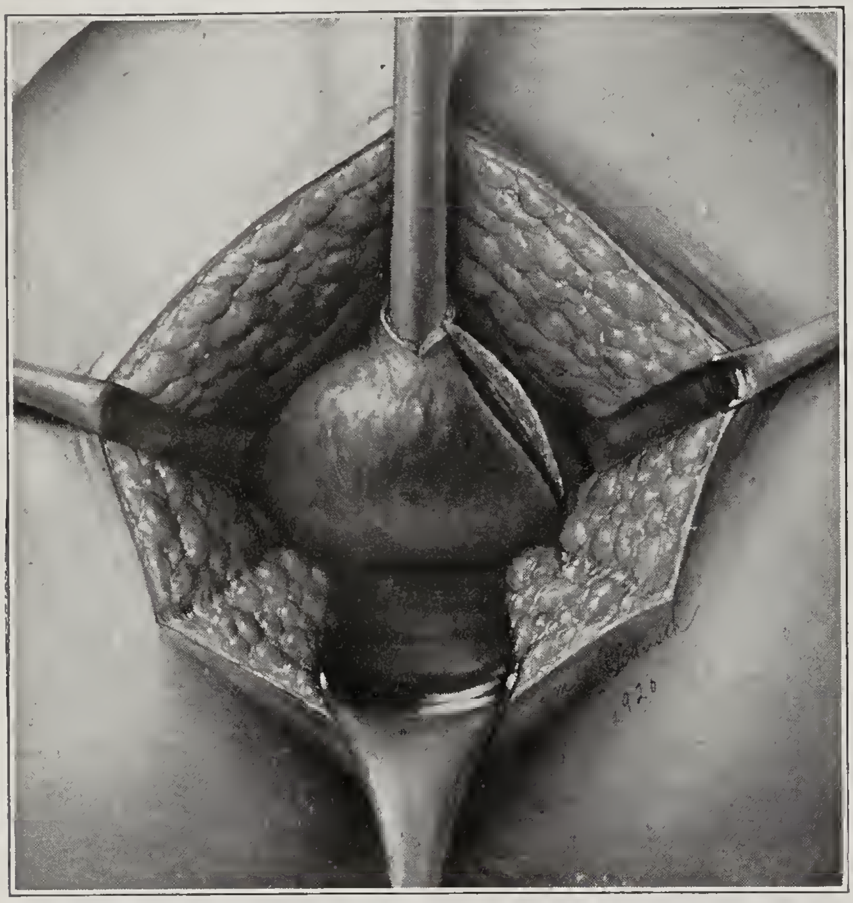

Fig. 9.—Single lateral oblique incision, which proved to be too far from midline, and which made the removal of the right lateral lobe very difficult.

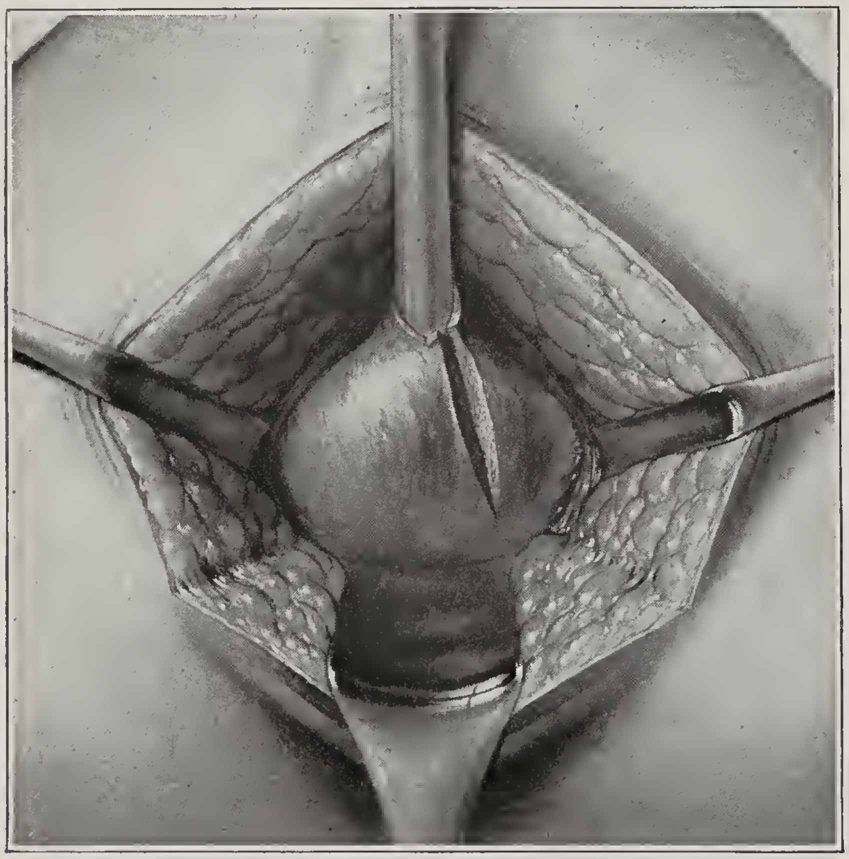

Fig. 10.—Latest technic with single lateral capsular incision almost parallel to the urethra and just external to the verumontanum and ducts. This incision opens on the urethra along the left lateral wall.

This technic was followed for a great many months, and then a careful study of cases was made and showed conclusively that the wound healing by this technic was not nearly so rapid or satisfactory as by the previous bicapsular incisions, and to our surprise a few cases of stricture of the anterior part of the prostatic urethra occurred, something that had almost never been seen by the previous technic. Investigation seemed to show that the triangular flap was probably turned backward and left a large area to be replaced by tissue along the floor of the urethra and thus led to slow healing and cicatricial contraction sufficient to produce stricture.

I then tried enucleating the hypertrophy through a single oblique capsular incision, as shown in Figure 9.

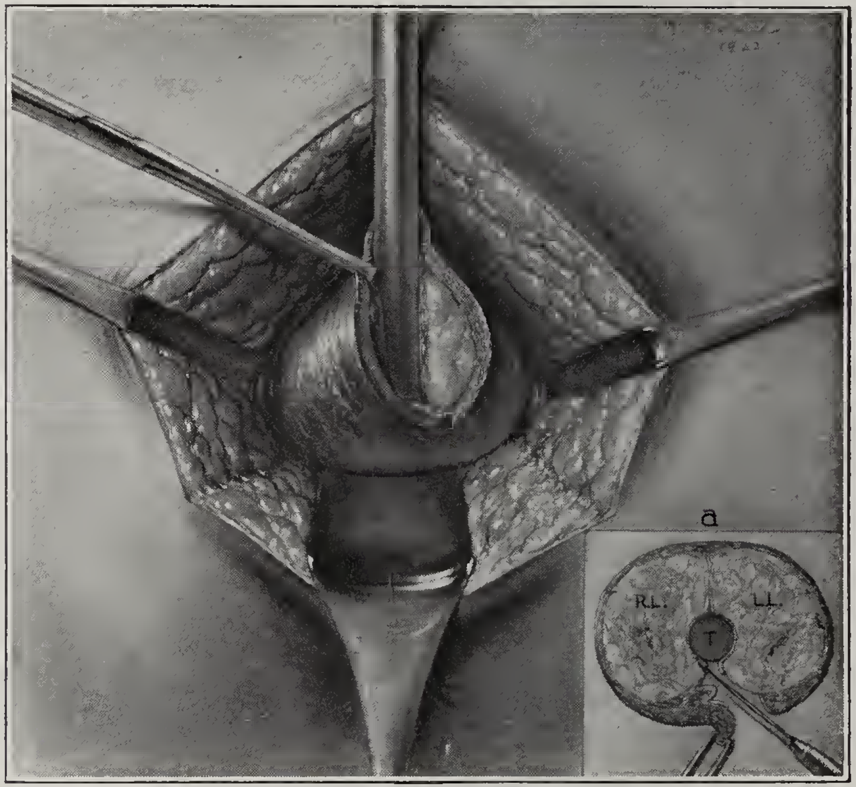

Fig. 11.—The prostatic capsule has been opened by oblique lateral incision, which extends into the urethra and divides the left lateral wall of the urethra to the middle lobe. Enucleation of the left lateral lobe begun. Mucous membrane covering the right lateral and median lobes divided, as shown in subsequent drawings. Inset, *a*, cross-section of prostate, with knife making incision in the mucous membrane covering the right lateral lobe. *R. L.*, right lateral lobe; *L. L.*, left lateral lobe; *T*, prostatic tractor.

As seen here, after the prostatic tractor had been introduced through the median urethrotomy wound and the prostate had been exposed, an oblique incision was made in the posterior surface near the left lateral margin and from there into the urethra, which was thus widely opened on the left side, exposing the floor and ejaculatory ducts. By division of the urethra longitudinally on the side and in front of the median lobe, the adenomatous prostate was then removed without difficulty through this single lateral incision. Whereas the enucleation of the left lateral lobe was easy, the right lateral lobe was more difficult to reach in this method, and after performing a number of operations by this technic I finally decided to try a single capsular incision which would open the urethra and parallel the ejaculatory ducts on one side, but sufficiently distant to avoid injury to them. This incision is shown in Figure 10. As seen here, the capsule and urethra are opened by an incision beginning along the left side of the tractor where it enters the prostatic urethra, and from that point continues backward and slightly outward near the posterior limit of the prostate. The whole prostatic urethra is thus widely opened, and investigation will show the verumontanum well preserved along the floor of the urethra to the right (Fig. 11). Incision is then made along the mucous membrane covering the inner surface of the right lateral lobe (Fig. 11 *a*), and enucleation of the lateral lobes carried out as shown in Figures 12 and 13, by means of the blunt dissector and the index finger.

The mucous membrane covering the middle lobe is then divided transversely, the ejaculatory ducts and verumontanum being pushed backward and guarded by the index finger, which is inserted along the floor of the urethra until it reaches the middle lobe (Fig. 14), the incision then being made with the scalpel on the finger nail through the mucous membrane covering the median portion of the prostate, after which the finger is pushed backward beneath the middle lobe, thus freeing it from the proximity of the ejaculatory ducts posteriorly (Fig. 15).

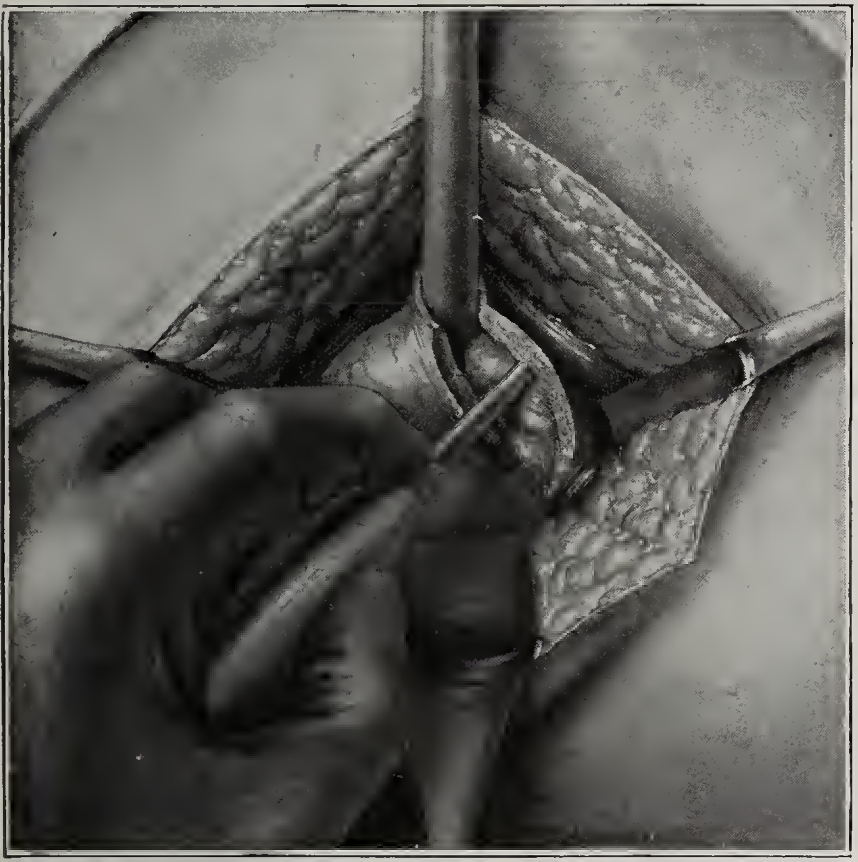

Fig. 12.—Floor of the urethra pulled aside with forceps to show the verumontanum preparatory to making longitudinal incision along the inner surface of the right lateral lobe.

Enucleation of the lateral and median lobes is then completed, first on one side and then on the other, until the entire adenomatous prostate is drawn forward and gradually separated from its attachment to the vesical and urethral mucous membrane, which usually strips away without difficulty, leaving the interior surfaces of the lateral and median portions of the prostate completely free from mucous membrane. In some cases a subtrigonal lobule is present, and on this account it is often advisable to remove the tractor and insert the index finger of the left hand through the sphincter into the bladder (Fig. 16) and remove the deep portion of the middle lobe on this finger, a curet being used (Fig. 17), if necessary, to free the deep portions of the lobe from the surrounding structures and, if a subtrigonal lobe is present, to draw this up into the wound in conjunction with the middle and lateral lobes, as shown in Figure 18. By this technic an extremely complete and satisfactory enucleation of the lateral, median and subtrigonal lobules can be carried out without difficulty and under visual direction as the deep portions are exposed. Figures 19 and 20 are accurate drawings of specimens removed by this technic.

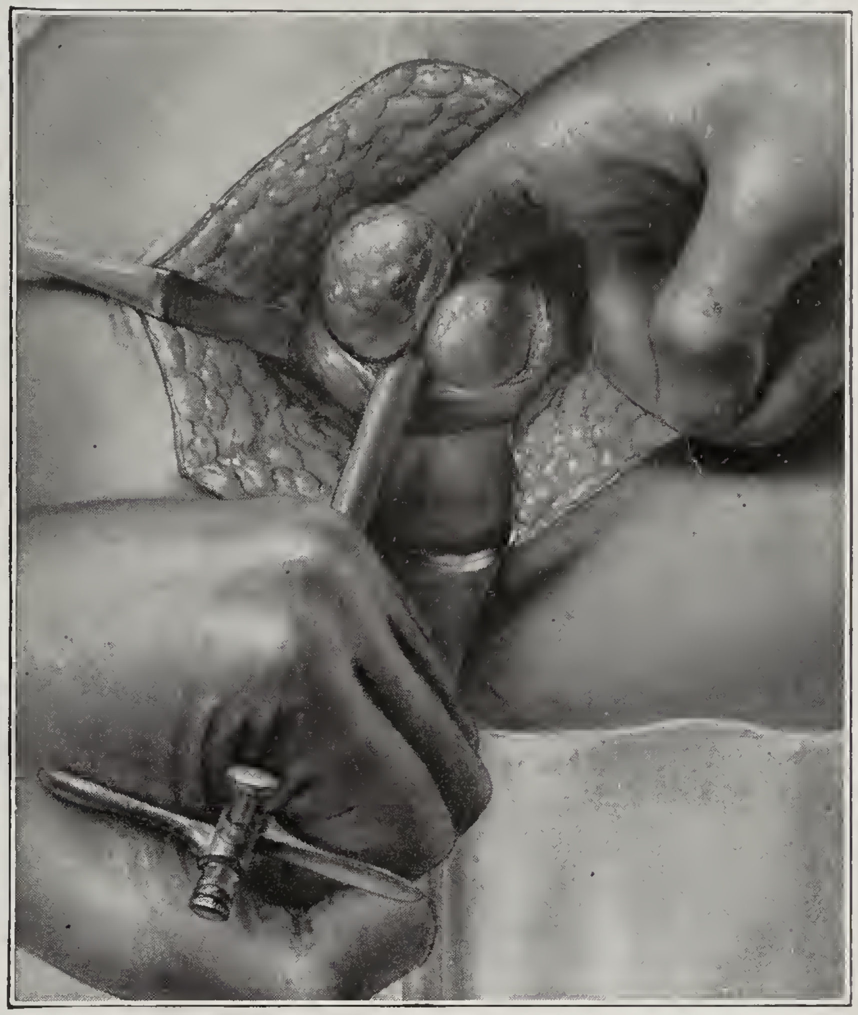

Fig. 13.—Enucleation of lateral lobes, which was started with scalpel, is completed with finger, the tractor being carried downward.

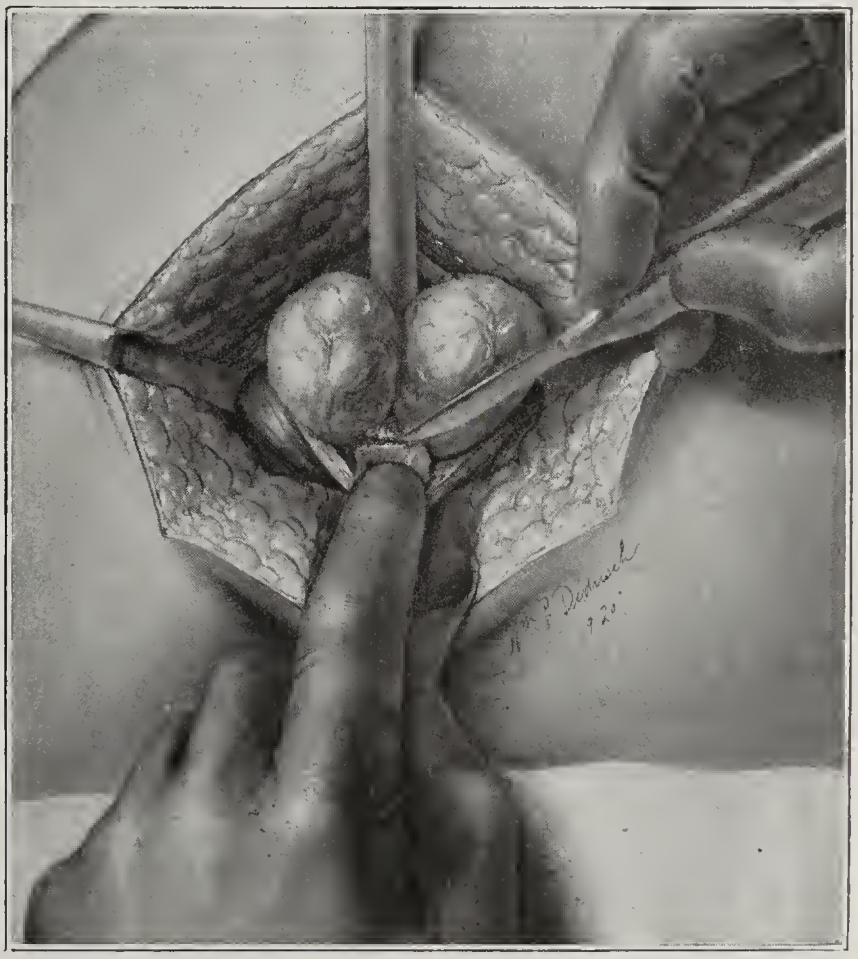

Fig. 14.—With tractor held vertically, beak directed downward, the lateral lobes having been freed, the mucous membrane in front of the middle lobe is being divided transversely with scalpel. Ejaculatory ducts covered by index finger, which pushes them backward.

Not infrequently, a bleeding artery is exposed on each side of the vesical neck adjacent to the middle lobe where it can be clamped and ligated, thus materially reducing the hemorrhage and the necessity of packing. (These areas are probably caught in the sutures which are placed by some suprapubic prostatectomists after enucleation of the prostate.) An investigation will then show that the sphincter is usually intact, though possibly dilated, and a cylinder of mucous membrane extending from the vesical neck into the prostatic cavity. The floor of the urethra and ejaculatory ducts are preserved as completely as by the old technic, and the roof of the urethra is generally entirely intact. The operation is completed by inserting a large tube into the bladder, packing the lateral cavities with gauze, and closing the skin externally on one side, as shown in Figure 21.

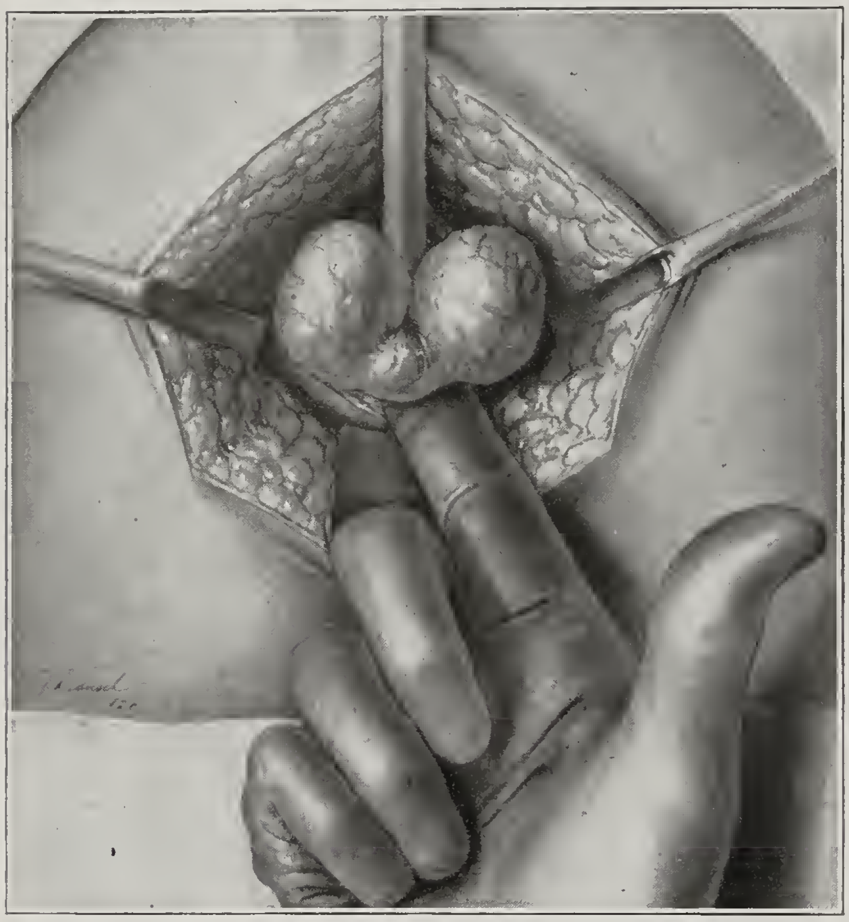

Fig. 15.—The middle lobe attached to the two lateral lobes already freed is being separated from the sphincter and vesical mucosa, and enucleated from behind forward.

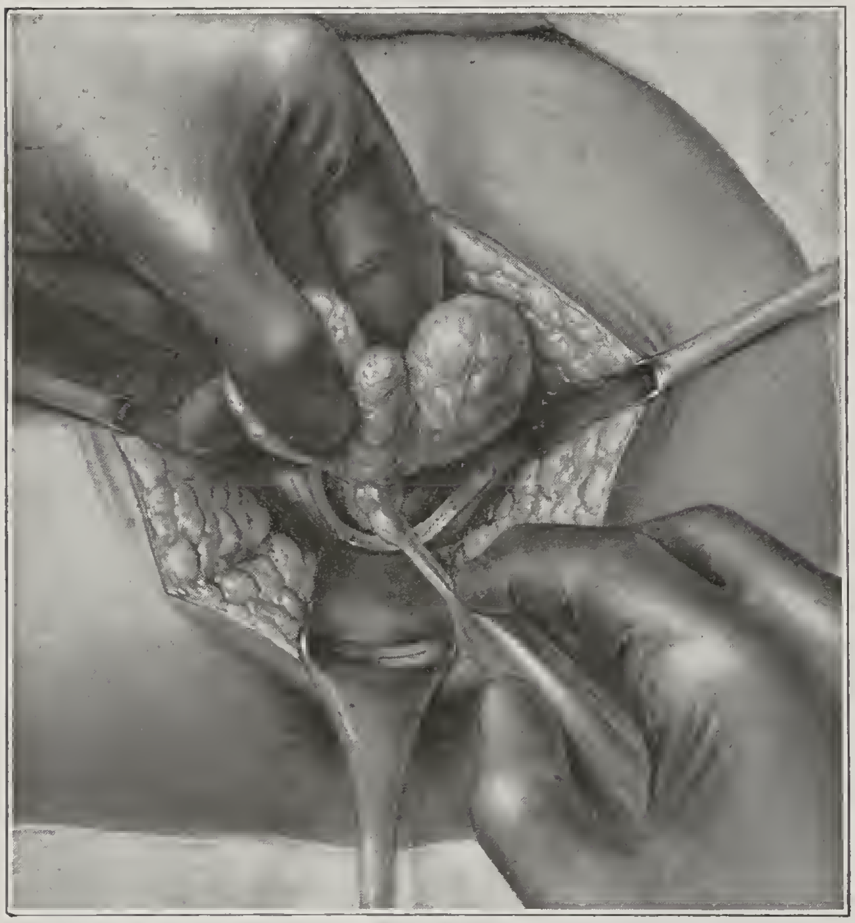

Fig. 16.—The tractor has been removed and the index finger of the left hand introduced through the vesical orifice into the bladder to investigate the median portion. The subtrigonal lobule has been discovered, and is being separated from the sphincter by the blunt tractor.

The technic described above can be varied in many ways. The anterior commissure and what gland tissue it contains (sometimes a hypertrophied lobule, occasionally a large anterior lobe) can be removed in one piece with the lateral and median portions of the prostate, thus approximating the complete removal *en bloc* practiced by Freyer in the suprapubic route, as shown in Figure 22 *A. C.*, anterior commissure intact. Figures 23, 24, 25 and 26 show specimens removed through the perineum by this technic. As seen here, the anterior commissure is well preserved. The only objection to this method is that a little more mucous membrane is removed with the specimen; but this is relatively unimportant, and it is not infrequently easier to remove the entire prostate this way than if approached intra-urethrally. Another method is to break through the urethral mucous membrane near the anterior surface of the lateral lobes on each side, as is done in the intra-urethral suprapubic technic, and to remove frankly the mucous membrane covering the entire surface of the lateral lobes, which are first separated anteriorly and then laterally and then posteriorly in enucleating them along with the middle lobe in one piece. Figure 27 shows a specimen removed in this way.

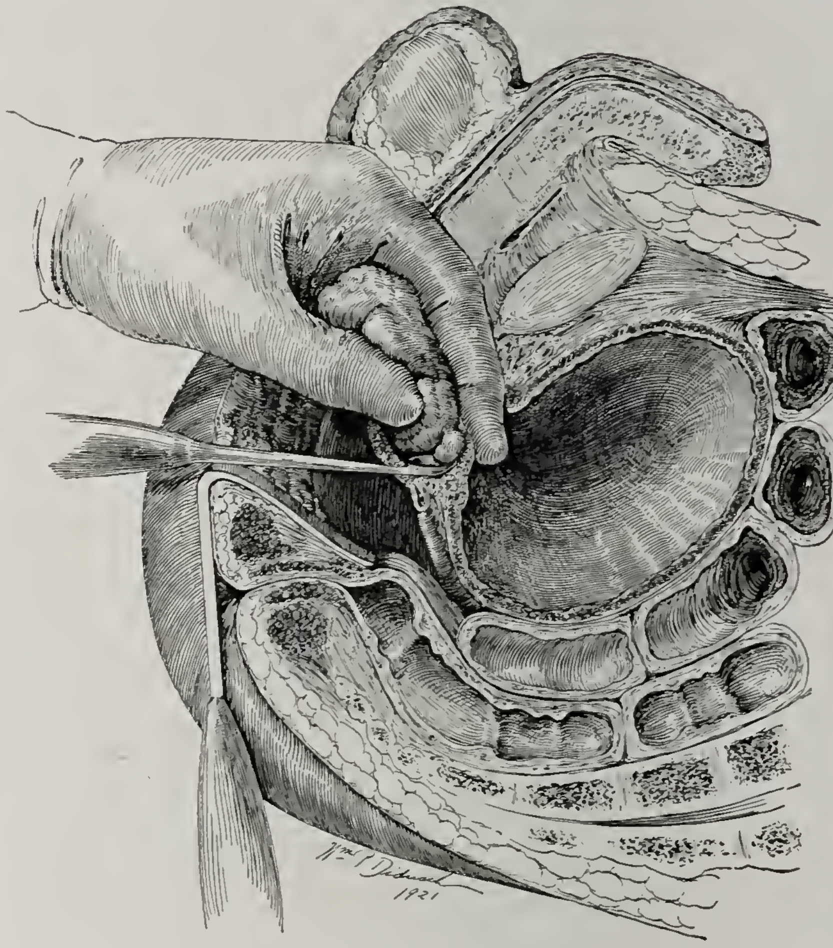

Fig. 17.—A sagittal section indicating the removal of the subtrigonal lobule on the index finger in bladder by means of curet.

The principal advantage of this single capsular incision is that a more thorough removal of the deep portion of the lateral and median hypertrophied lobes may be accomplished, and all in one piece, thus avoiding the chance of leaving intravesical lobules of gland tissue behind to cause future trouble. The ejaculatory ducts and sphincter are preserved with equal care. The urethral mucosa is probably more lacerated and sometimes partly removed, but this is apparently of little importance, as the normal prostate which remains rapidly collapses after removal of the lateral hypertrophied lobes, and a year later the prostate is generally of the size and consistency of a normal prostate. As a matter of fact, the amount of tissue remaining is practically that of a normal prostate, the lateral adenomas having only pushed outward and backward the normal gland tissue in their growth, and thus the gland is subsequently restored to normal after contraction of the cavities left by removal of the lateral and median lobes. Indeed, the operation should not be called prostatectomy but prostatic adenectomy, the term prostatectomy being reserved for the radical operation for cancer of the prostate, in which the whole prostate is removed.

In some fibrous and very adherent cases the old bilateral capsular incision and technic are the most satisfactory; and, although it is a great pleasure to remove a beautiful specimen of the adenomatous prostate in one piece, there are some instances in which the immediate result is more conservative by the old technic than with the new. But these newer methods are interesting, as showing that the entire adenomatous prostate can be removed in one piece through the perineum without injury of the internal sphincter or the ejaculatory ducts, and the ultimate result is far more conservative than that of suprapubic prostatectomy, in which much of the urethral mucosa is removed, and the internal sphincter is greatly dilated and often lacerated or even functionally destroyed by the removal of a large prostatic mass through its lumen, as shown by Hyman[4] and Watson.[5]

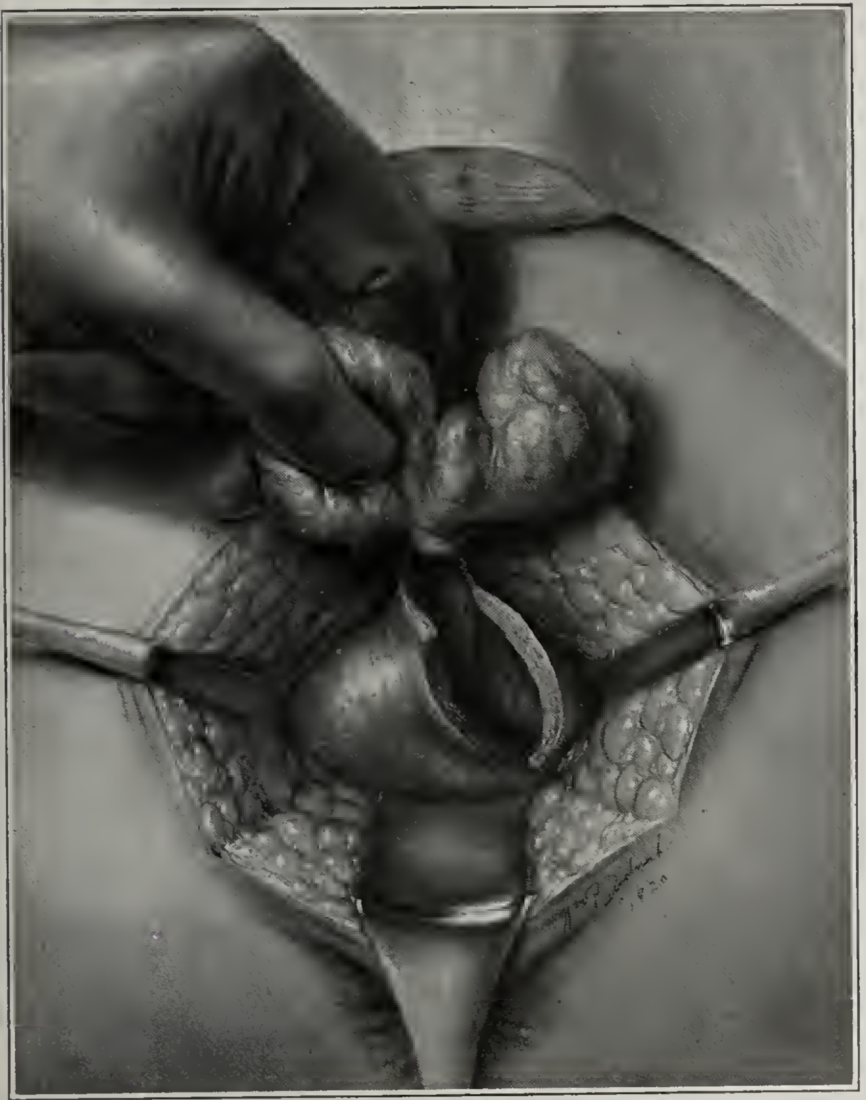

Fig. 18.—Condition present after removal of lateral, median and subtrigonal lobule. Normal subcapsular tissue remains. Ejaculatory ducts preserved, roof and floor of the urethra intact, cavity on each side and in region of middle lobe. Vesical sphincter intact.

MORTALITY

During the last three years, the more recent technic described above has been generally followed in my personal cases. Since my return from France, I have had from Feb. 11, 1919, to date (a period of three years) 166 consecutive perineal prostatectomies without a

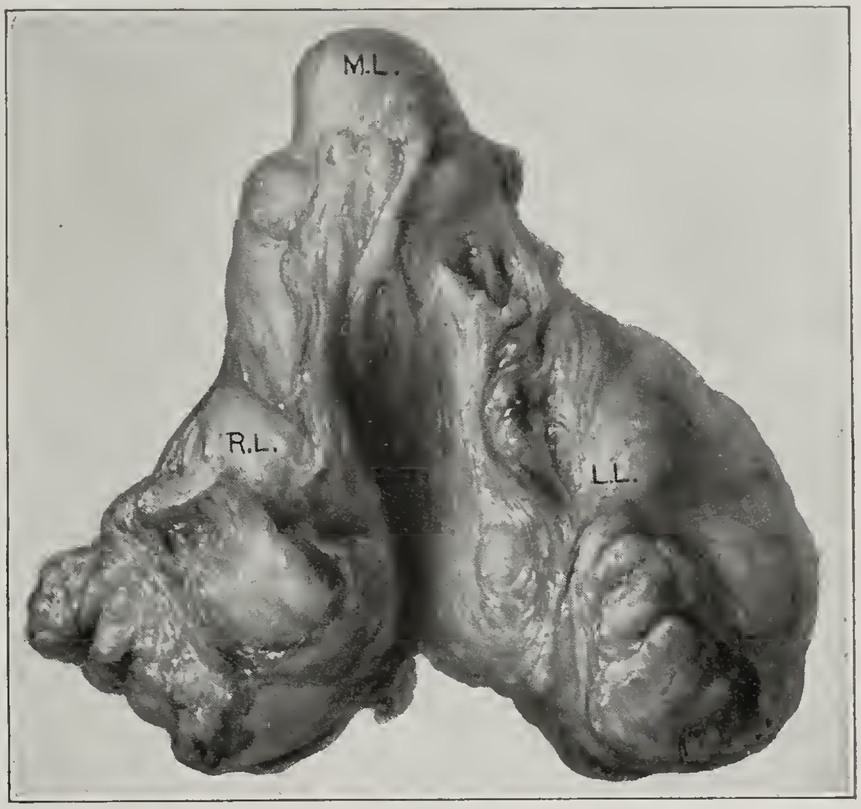

Fig. 19.—Specimen removed by foregoing technic, consisting of very large left lateral (*L. L.*), moderate right lateral (*R. L.*), and very long median lobe (*M. L.*), which projects far into the bladder. No mucous membrane removed.

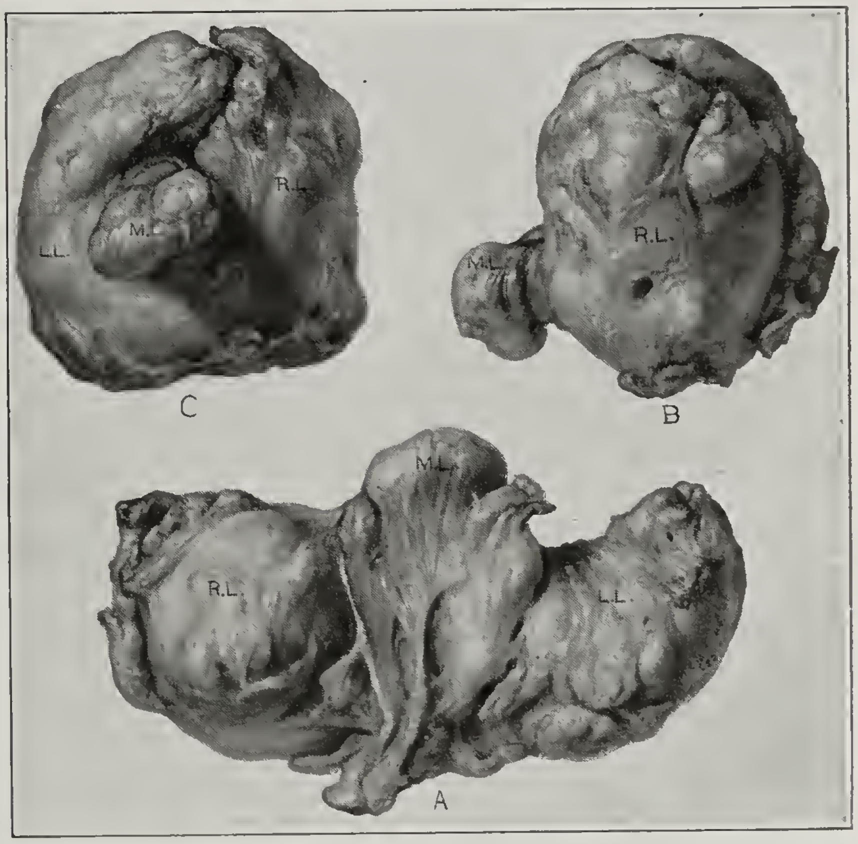

Fig. 20.—*A*, anterior view of lateral and median lobes removed in one piece; *B*, side view of right and median lobes of specimen; note the constriction of median lobe by sphincter and small subtrigonal posteriorly projecting lobule; *C*, vesical aspect of prostrate, showing the small intravesical median and very large extravesical lateral lobes; if this had been removed suprapublically, the sphincter would have surely been destroyed.

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4. Hyman, A.: The Normal Bladder and Its Sphincters, and the Changes Following Suprapubic Prostatectomy, Ann. Surg. **59**: 544, 1914.
5. Watson, E. M.: A Study of the Vesical Orifice Following Perineal Prostatectomy, J. Urol. **1**: 543 (Dec.) 1917.

death. Among these patients there were four more than 80 years of age, and forty-nine more than 70, and about 30 per cent. had kidneys so badly impaired as to require several weeks of preliminary catheter drainage and treatment with large amounts of water to restore the renal function sufficiently before operation could be safely undertaken. In only two cases was it necessary to supply suprapubic drainage in the preparatory treatment. All other cases were handled by either intermittent or continuous catheter drainage, great care being taken to avoid urethral suppuration, and careful study of the renal function with the phenolsulphonephthalein test and blood chemistry if serious renal disease was indicated. The preparatory methods which have been used have been indicated in a previous paper,[6] and need not be repeated here.

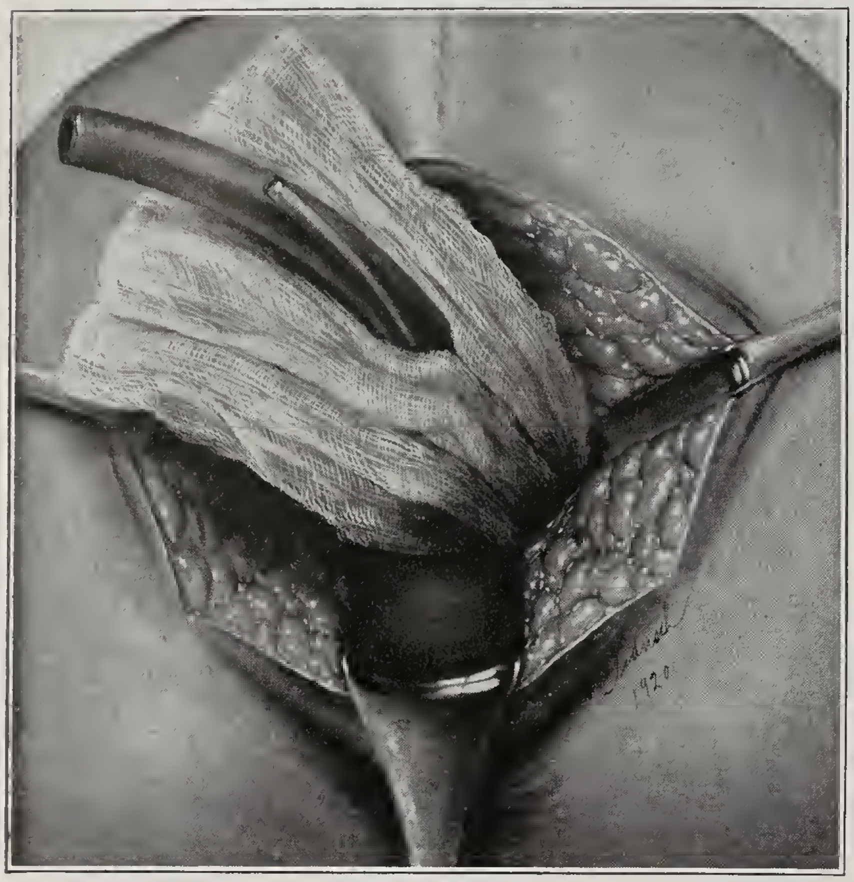

Fig. 21.—Large tube has been inserted into bladder, a small tube into the cavity for the insertion of oil to facilitate removal of gauze which has been introduced into the lateral cavities to arrest hemorrhage.

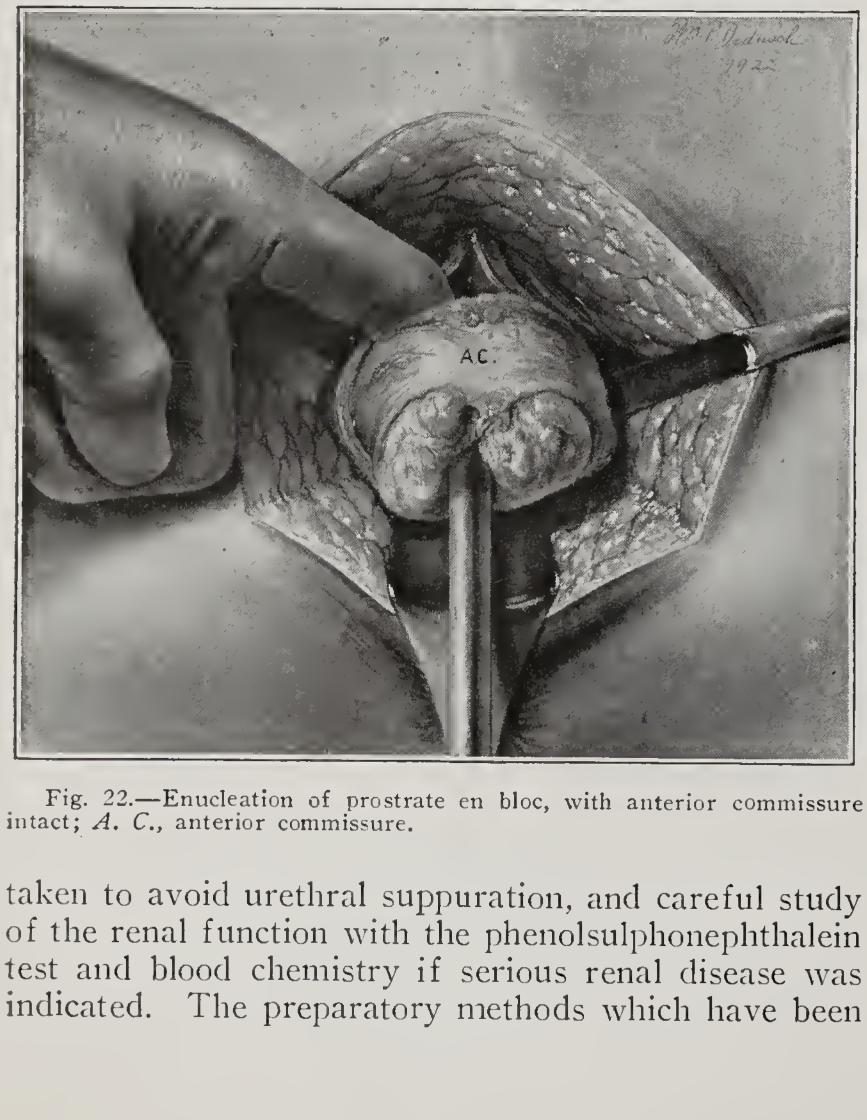

Fig. 22.—Enucleation of prostrate en bloc, with anterior commissure intact; *A. C.*, anterior commissure.

CONCLUSION

The principal object of this paper has been to show that:

1. By means of the perineal route, just as radical and satisfactory removal of the entire adenomatous prostate in one piece can be accomplished through the perineum as by the suprapubic route, with, however, complete conservation of important anatomic structures (vesical sphincter, ejaculatory ducts, etc.) as outlined above.

2. By means of the great natural advantages of the lower operation—ability to do an open operation through visual inspection, to arrest hemorrhage and to apply sufficient packing for complete hemostasis, and with dependent drainage, an avoidance of sepsis, and the inconvenience of distention of the bowels which so frequently follow suprapubic operation—a remarkably low mortality can be secured and prostatectomy brought within the ranks of those modern major surgical procedures which are practically free from danger.

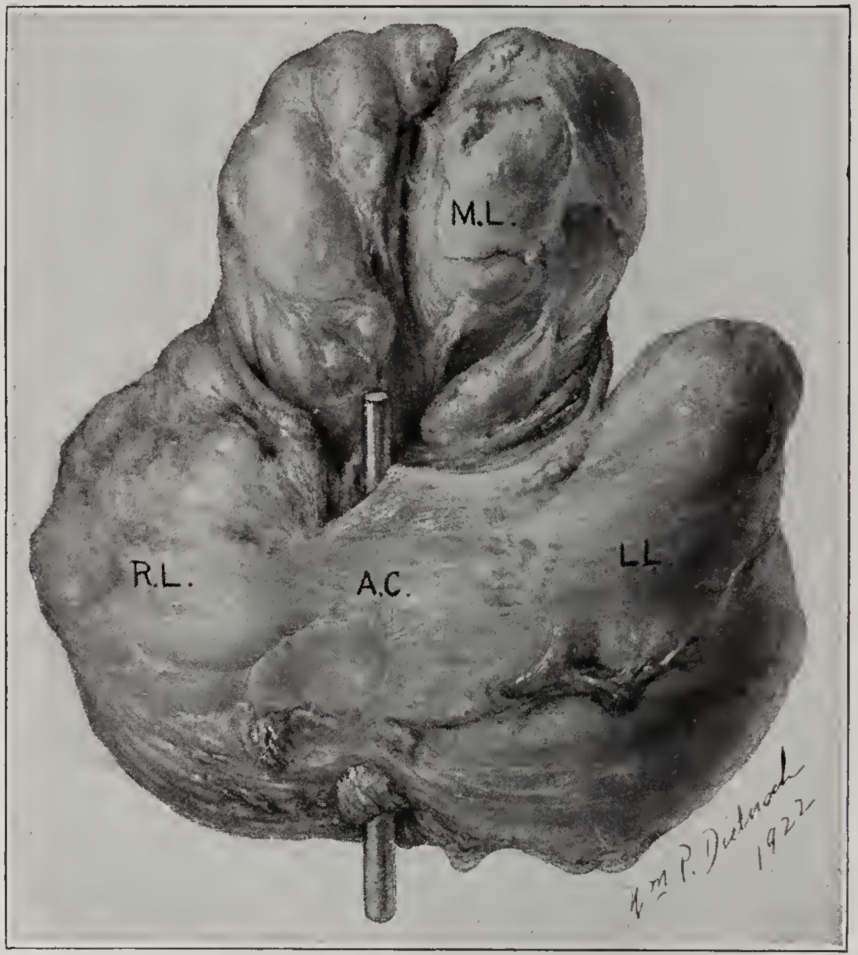

Fig. 24.—Anterior view of very large prostate removed en bloc with anterior commissure.

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[6] Young, H. H., and Frontz, W. A.: Preliminary Treatment for Prostatectomy in Unfavorable Cases, J. A. M. A. **68**: 526 (Feb. 17) 1917.

Survey of Schoolchildren and Adults.—The Eye Sight Conservation Council of America, New York City, announces that statistics covering many years show that nine out of every ten persons over 21 years usually have imperfect sight. At 31, the proportion is larger. Above 40, it is almost impossible to find a man or woman with perfect sight. A survey of several thousand schoolchildren showed that 66 per cent. of them had defective vision of such a degree as to warrant the wearing of glasses. An examination of more than 10,000 employees in factories and commercial houses showed that 53 per cent. had uncorrected faulty vision, and 13 per cent. had defects which were corrected, making a total of 66 per cent. with defective eyes.

KERATODERMIA BLENNORRHAGICA

EDWARD C. GAGER, M.D.
ST. PAUL

This disease, first described by Vidal in 1893, is comparatively rare. Chauffard[1] described the condition in 1910 and gave references to all cases reported up to that time. In 1912, Simpson[2] reported a case in detail, and reviewed the literature. Since that time there have been reported several cases of localized gonorrheal keratoses, among them four cases[3] in 1918.

REPORT OF CASE

A man, aged 41, single, a glazier, referred by Dr. O. I. Sohlberg, July 23, 1921, had his first attack of gonorrhea at the age of 20. This cleared up readily. At 27 he had urethral stricture with acute retention. Treatment of this condition gave him permanent relief, and he had had no difficulty of urination since that time. The patient stated that, since the first attack, he had had gonorrhea six or seven times. The present attack began with a purulent urethral discharge, July 2. July 5, he noticed a balanitis; July 9, a papulopustular eruption appeared on the arms and legs, together with pain, tenderness and swelling of the right wrist, both knees and ankles.

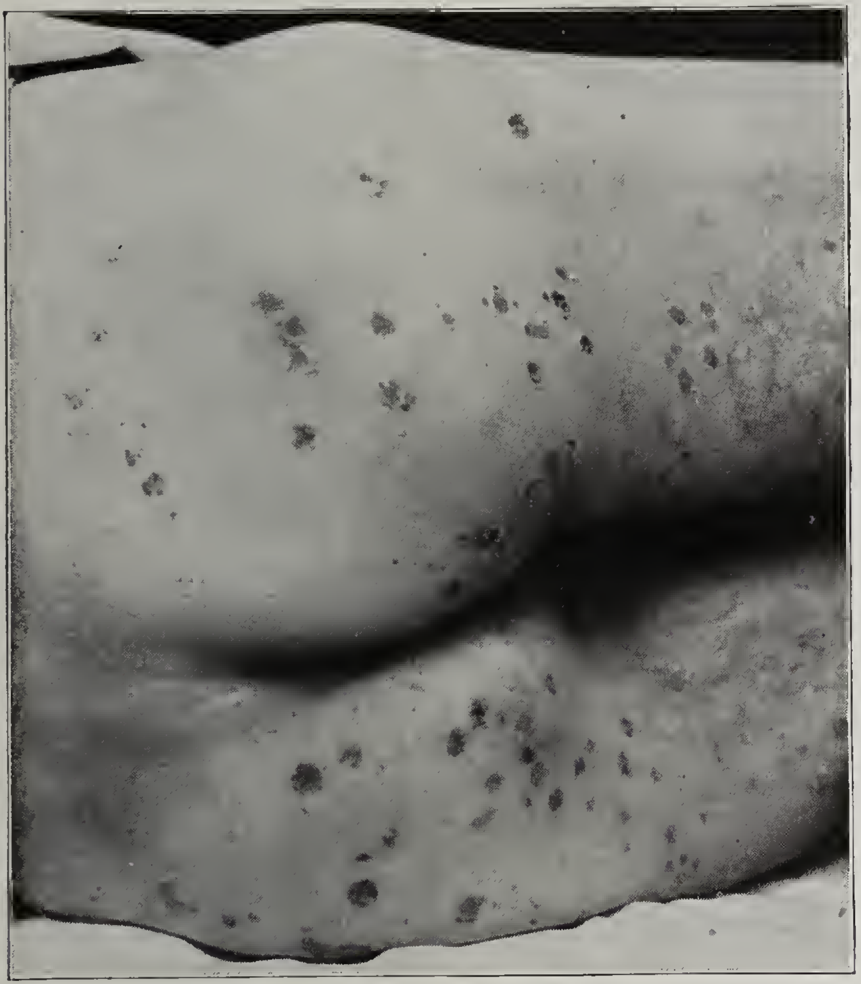

Fig. 1.—Character and grouping of lesions on trunk, some still covered with a white scale and others showing the red base where the scale has been brushed off.

The patient was well developed but poorly nourished. The teeth were in poor condition. The heart was slightly enlarged to the left; the pulse was regular, 110 a minute; there were no murmurs over the aortic area. There was a soft, diastolic murmur at the apex, not well transmitted, but heard indistinctly over the vessels of the neck. The blood vessels were arteriosclerotic. There were water hammer pulse and capillary pulse. The liver and the spleen were not palpable. The knee reflexes were slightly hyperactive. The right wrist was red and swollen, and there was an arthritis of both knees and ankles. There was a general adenopathy. The glans penis and the prepuce were reddened and hyperkeratotic. The serum Wassermann reaction was negative on two examinations. The temperature on admission was 101 F., and ranged to a maximum of 103 during the course of the illness. The pulse was rapid throughout; for some weeks it was 120 a minute.

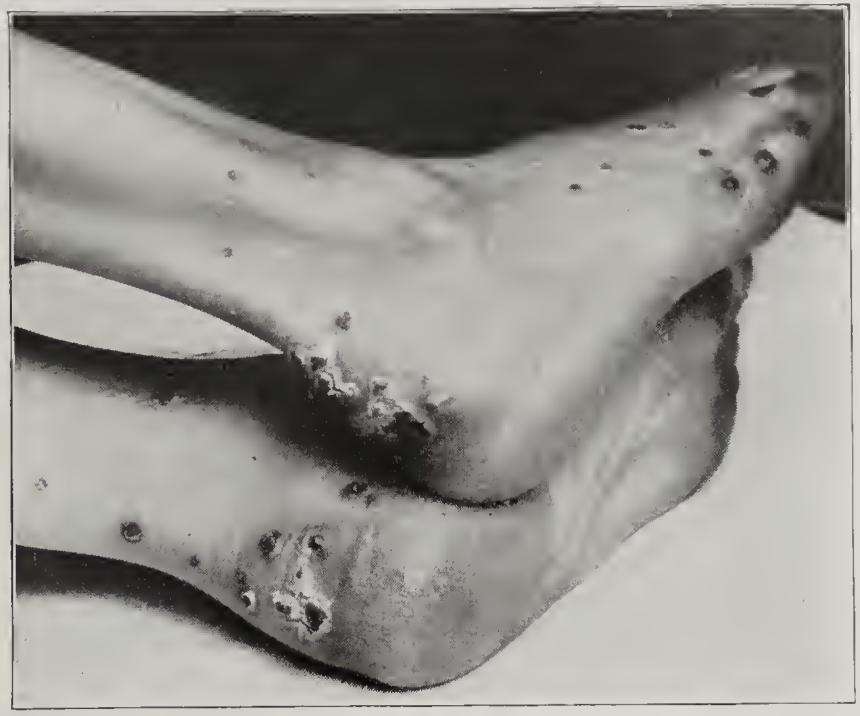

Fig. 2.—Grouping of confluent lesions on the heels.

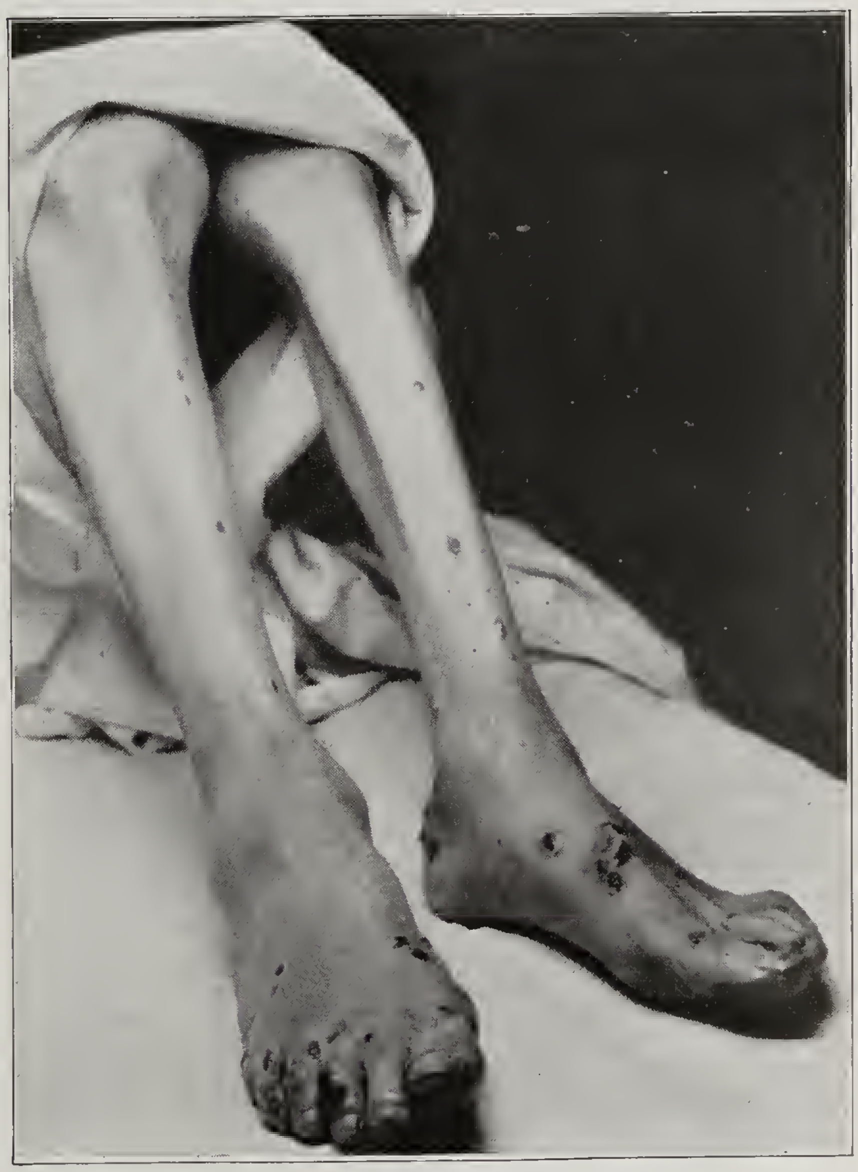

Fig. 3.—Conical shape of individual lesions may be noted; also swelling of knee and ankle.

The lesions, which we saw in their early state, began as vesicles which rapidly became pustules. Smears from the pustules on the skin as well as from the urethra contained extracellular, gram-negative diplococci; pus cells were very numerous.

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[1] Chauffard, in the Ikonographia Dermatologica, 1910.

[2] Simpson, F. E.: Kératodermie Blennorrhagique, J. A. M. A. **59**: 607 (Aug. 24) 1912.

[3] Brown, W. H., and Davidson, A. M.: J. Cutan. Dis. **36**: 225 (April) 1918. Lundie, C.: Brit. J. Surg. **5**: 389 (Jan.) 1918.

The eruption was widely distributed, bilateral and tended to be symmetrical. The distribution was grouped, although there were scattered lesions on all parts of the body. There were groups, several confluent, on the buttocks, thighs, legs, feet, arms and forearms. The lesions in the beginning were vesicles or pustules on an erythematous base. After some of the older lesions had dried up and were brushed off, there was left a smooth, pink surface underneath. The smallest lesions measured from 3 to 4 mm. (about ⅛ inch) in diameter; the larger ones were from 2 to 4 cm. (¾ inch to 1½ inches). The base was raised and covered with a keratin scale.

Some of the larger lesions presented almost a mussel shell appearance. About the inner surface of the ankles and on the soles there were numerous convex pustules with hard and thickened caps; these gradually and slowly became enormously thickened and keratinized.

The discrete lesions were convex and cornified, and were conical, enlarging gradually to the base. On the soles, especially over the ball of the foot, they became confluent, and there was an enormous thickening of the epidermis. The appearance of these lesions was very striking, and resembled no other eruption.

The course of the eruption was prolonged. After one month the lesions were crusted, cornified and yellowish; at the end of two months most of the lesions on the trunk and arms were completely keratinized and brushed or scraped off, leaving pink, smooth skin underneath.

Lesions on the soles led to an entire desquamation of the enormously thickened skin. At the end of three months the eruption had healed entirely, but it was six months before the arthritis had cleared up, and the patient had a prolonged recovery and convalescence.

The diagnosis of the condition was: gonorrheal urethritis; balanitis; arthritis; myocarditis; keratodermia blennorrhagica.

334 Lowry Building.

Respiratory Symptoms Due to Latent Syphilis.—Syphilis may ape any disease. Prior to the discovery of the tubercle bacillus, pulmonary syphilis was believed to be common. Following Koch's discovery, the reporting of cases of syphilis of the respiratory tract became quite rare. The experience at the Henry Phipps Institute has been that symptoms and physical signs due to latent syphilis cannot be distinguished in the beginning from those due to pulmonary tuberculosis. Syphilis is to be suspected as the cause of the trouble: (1) if the sputum is persistently negative for tubercle bacilli; (2) if stigmas of syphilis are found (history of miscarriages, nocturnal headaches, tenderness over the sternum, enlargement of inner end of clavicle, atrophy and induration of testicle, etc.); (3) if the Wassermann reaction is strongly positive; (4) if there is an amelioration of the symptom following antisyphilitic treatment.—*Bull. Henry Phipps Institute.*

"IDEAL CHOLECYSTOTOMY"

A VALUABLE PROCEDURE IN CERTAIN CASES OF CHOLELITHIASIS *

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There are cases of gallbladder disease in which diagnosis is simple and operative treatment generally successful. When a history of recurring attacks of colic, often associated with fever and jaundice, is obtainable; when the physical examination reveals a tumor or localized tenderness in the region of the gallbladder, and when roentgenologic study gives no indication of disease of the stomach, duodenum or appendix, but suggests involvement of the gallbladder, we are reasonably sure of the ground on which we stand. In these cases, doubt is removed by the very evident pathologic changes revealed on opening the abdomen. The institution of appropriate surgical measures will practically always cure these patients, or, at least, afford a considerable degree of relief.

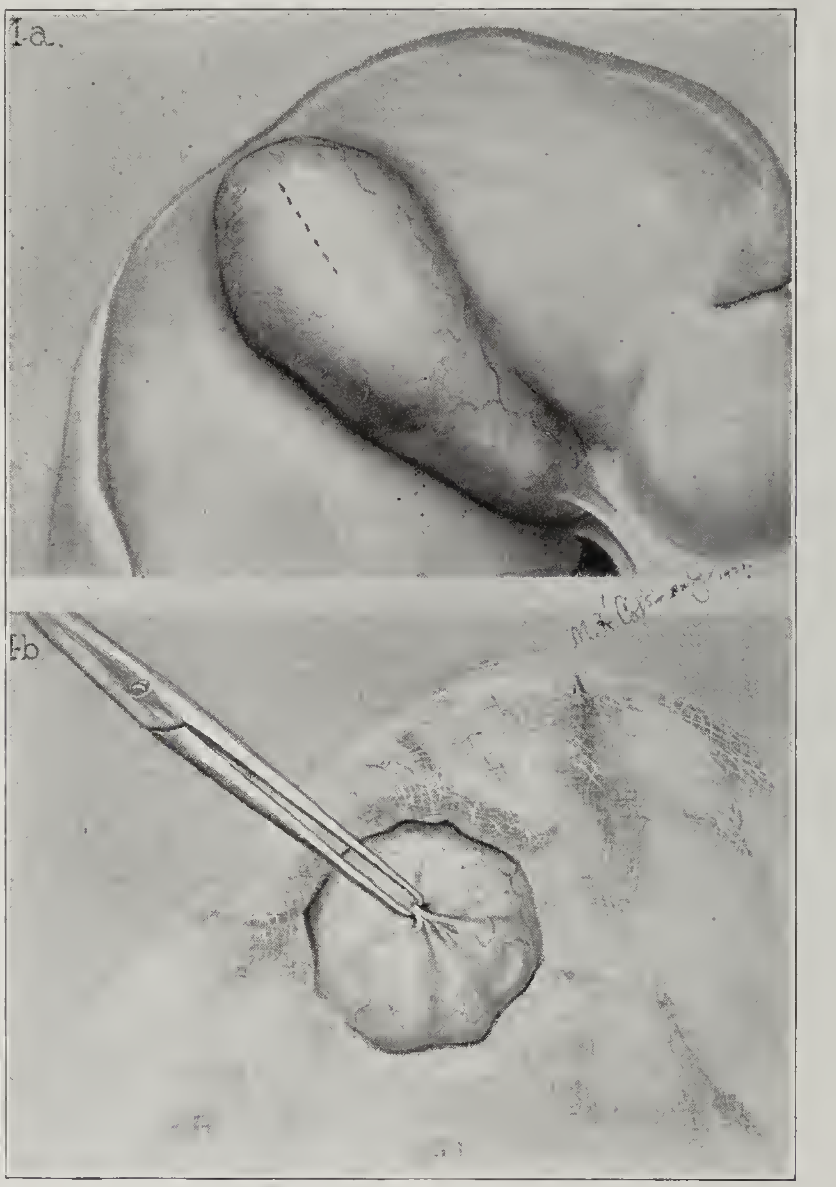

Fig. 1.—*a*, site for incision in gallbladder in the region with least blood supply; *b*, gauze applied to prevent contact of bile with adjacent peritoneum.

As C. H. Mayo [1] has recently pointed out, however, such cases as these represent the terminal stages of gallbladder disease. This author stresses the importance of earlier diagnosis and operative interference, so that our patients may be saved from the crippling local lesions as well as the danger of involvement of other organs. This advice is sound, but the attempt to follow it introduces actual difficulties for the diagnostician, and potential dangers for the patient.

The early detection of these cases is possible from the clinical history. Though physical and roentgen-ray examinations are negative, if the patient states that he has suffered from dyspepsia, when he complains of epigastric fulness after eating, associated with frequent eructations of gas, there is strong likelihood of the existence of a cholecystitis, provided careful examination fails to reveal the presence of disease elsewhere.

Believing that the patient is suffering from cholecystitis, surgeons recommend either cholecystostomy for drainage, or else the removal of the gallbladder. The attempt has been made elsewhere to point out the evil consequences [2] which are prone to follow the former of these procedures in the cases of slight disease of the gallbladder, the resulting infection and adhesions rendering the patient's condition worse than it was before operation. On the other hand, are we not becoming a little overenthusiastic in regard to removal of the gallbladder? The results which have followed cholecystectomy with omission of drainage are certainly good, but it would seem wiser to reserve this operation for cases in which we are reasonably certain that the organ is diseased. If we are to believe this is the case in spite of the fact that both inspection and palpation of the inner and outer walls are negative, the gallbladder occupies a unique position, for no other abdominal organ may be diseased to such an extent as to render its removal necessary without giving evidence of such involvement.

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* Read before the Southern Surgical Association, Pinehurst, N. C., Dec. 15, 1921.

[1] Mayo, C. H.: Cholecystostomy versus Cholecystectomy, Collected Papers of the Mayo Clinic **7**: 256, 1915.

[2] Willis, A. M.: Some Problems in Connection with the Surgery of the Biliary Tract, Ann. Surg. **75**: 196 (Feb.) 1922.

Earlier in my experience, simple cholecystitis was rather infrequently recognized. In a series of 549 cases in which operation was performed prior to 1918 because of supposed gallbladder disease, 86 per cent. of the patients showed the presence of calculi, while only 14 per cent. were instances of noncalculous cholecystitis. Impressed by the fact that I had, apparently, been derelict in my duty toward the patients, I made the attempt to increase the proportion of cases in which the diagnosis was made in the precalculous stage. This attempt has been so far successful that in a series of a hundred cases in which operation was performed during the last two years, stones were absent in 25 per cent. The sense of gratification which might be expected to follow this apparent increase in diagnostic skill is lessened, however, by the results of microscopic examination of the gallbladders, or sections, removed at operation. Ten of these gallbladders, or 40 per cent. of those which did not contain stones but were operated on because they were considered diseased, showed no histologic changes that could be considered pathologic. In other words, in the eagerness to forestall the streptococci, it would appear that a considerable number of normal gallbladders have been operated on, largely because the former owners gave a history of definite digestive disturbances, accompanied by epigastric fulness and gaseous eructations.

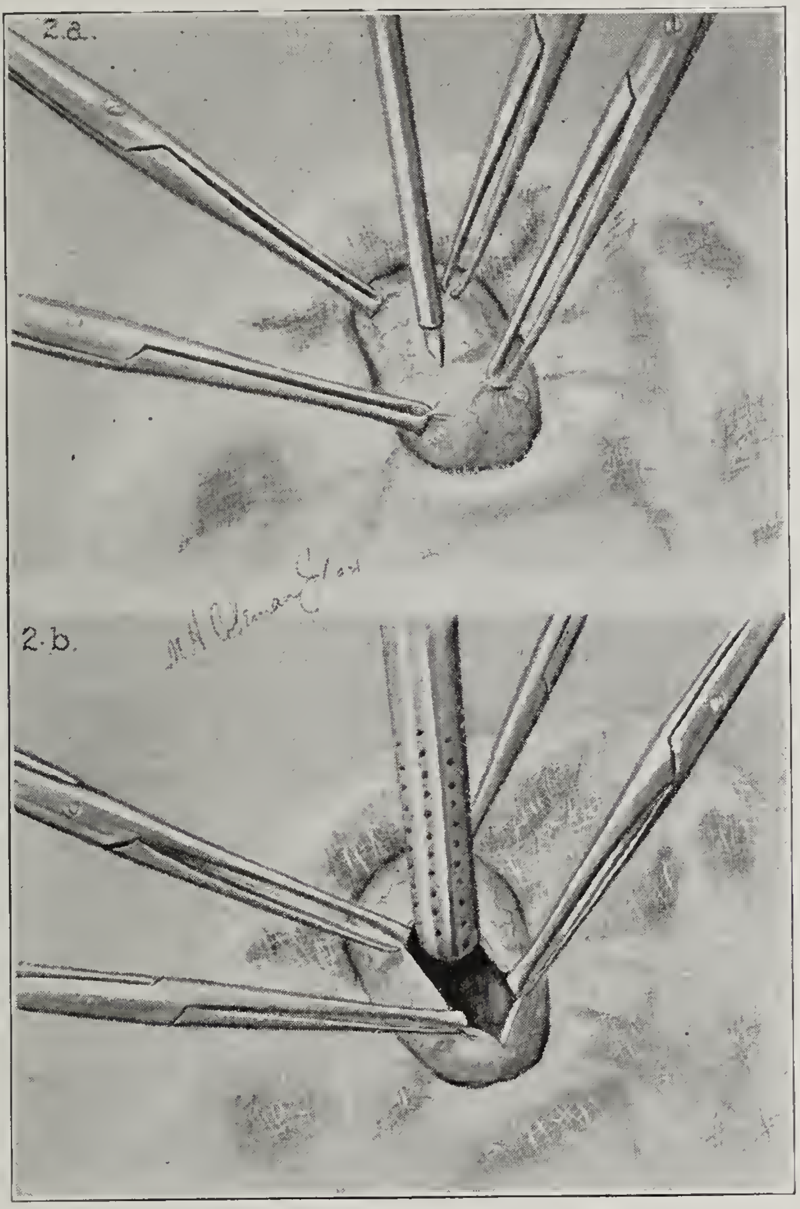

Fig. 2.—Introduction of (*a*) trocar-aspirator: (*b*) irrigator-aspirator.

In a recent paper by Jacobson,[3] it is stated that of 365 patients with cholecystitis operated on at the Peter Brent Brigham Hospital, in only fifty instances (13.7 per cent.) were stones absent from the gallbladder or ducts. Of these fifty patients, sixteen were found to have normal gallbladders when the organ was examined histologically, so that in this institution approximately one patient out of every three subjected to cholecystectomy for "simple cholecystitis" parted with a normal gallbladder, the failure of patients to obtain relief following the operation confirming the belief that the diagnosis of cholecystitis was a faulty one.

In increasing the proportion of cases of noncalculous cholecystitis in my series as compared to Jacobson's, the proportion of incorrect diagnoses has been raised from 32 to 40 per cent. When we encounter reports of series in which almost 40 per cent.[4] of the patients subjected to cholecystectomy were supposed to be suffering from noncalculous cholecystitis, one cannot forbear speculating as to how many normal gallbladders were sacrificed.

In addition to these borderline cases of cholecystitis, there are others in which we should hesitate to decide on the employment of radical measures. It is with some trepidation that I acknowledge a faith in the existence of the "silent" gallstone.[5] Possibly because of an increase in the amount of cholesterin or a decrease in the solvent power of the bile for this substance, it would seem conceivable, at least, that sterile calculi could be formed in the gallbladder. Even though we accept the view that all biliary calculi arise as the result of infection, is it not possible that the infectious process in the gallbladder which gave rise to the stones might eventually be overcome, and the calculi remain as "tombstones" of the dead bacteria? On the strength of postmortem examinations, the incidence of gallstones is placed as high as 12 per cent. in persons dying from all causes, and yet we know that not even a small fraction of 12 per cent. of the population ever suffers from symptoms severe enough to necessitate seeking surgical treatment. Every abdominal surgeon has discovered calculi in the gallbladder of patients who gave no history of gallbladder disease and who were operated on for disease in other organs in no way connected with the gallbladder. W. J. Mayo[5] reports that in 1,244 cases of women operated on for uterine myomas at the Mayo Clinic, ninety-two (7.1 per cent.) showed the presence of biliary calculi; while in patients operated on for various gynecologic lesions, Peterson[6] encountered gallstones in 12.5 per cent. I am convinced that many of these patients suffer from symptoms so slight as to be unrecognizable, and that in a certain proportion the presence of the calculi will cause no serious disturbance. If we accept this view, are we justified in drainage of the gallbladder after accidental discovery of the gallstones? The realization that this course will result in the formation of dense, crippling adhesions in many instances, producing very definite symptoms, is certainly reason for hesitation. On the other hand, should the apparently normal gallbladder be removed? Though it has been claimed that removal of the gallbladder does not lead to any disturbance, it has not been proved to be free from exerting any detrimental action. Most truthfully has it been said: "Uncertainty as to function and confidence in readjustment are, at best, questionable motives for adventures in ablation."[7]

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[3] Jacobson, Conrad: Gallbladder Disease: A Statistical Study, Arch. Surg. **1**: 310 (Sept.) 1920.

[4] Mayo, C. H.: Cholecystectomy with Modified Drainage, Collected Papers of the Mayo Clinic **12**: 119, 1920.

[5] Mayo, W. J.: "Innocent" Gallstones a Myth, J. A. M. A. **56**: 1021 (April 8) 1911.

[6] Peterson, R.: Gallstones during the Course of One Thousand and Sixty-Six Abdominal Sections for Pelvic Disease, Surg., Gynec. & Obst. **20**: 284, 1915.

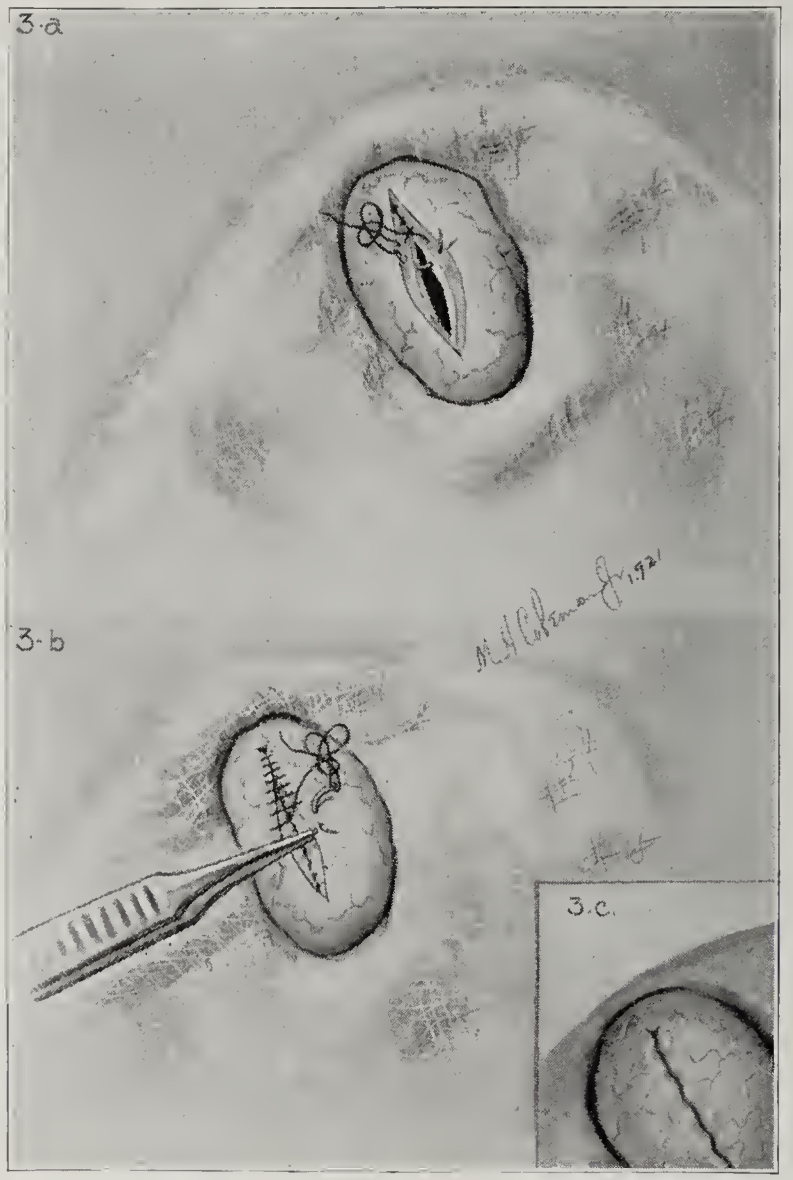

Fig. 3.—First sutures (*a*) include muscular and submucous coats; *b*, closing visceral peritoneum; *c*, final appearance of closed gallbladder.

Is there no middle course that may be followed in these cases? Because of a history suggesting cholecystitis, or because of the accidental discovery of gallstones, are we compelled to subject the patient either to the chance of an accentuation of his discomfort or to a loss of a normal organ? It has seemed to me that in the ideal cholecystotomy, with the omission of drainage, such a middle course is to be found. This operation was first performed at a time when diagnostic methods were crude and operative technic was poorly developed; and because the results obtained under those conditions were poor is no justification for the almost universal condemnation of the operation that is now encountered. Though the literature abounds with reports, proving, according to the bias of the operator, the superiority of cholecystostomy or of cholecystectomy, I am unaware of a single recent series of cases in which cholecystotomy was used with disastrous results.

The objections that may be advanced against cholecystotomy are: (1) a failure to cure the disease; or (2) damage from escape of bile into the peritoneal cavity.

It has been pointed out that, with the use of existing methods, a certain proportion of the patients operated on for gallbladder disease in reality have normal gallbladders; therefore, the drainage or removal of the gallbladder would not effect a cure. Cholecystotomy, however, would allow an internal exploration of the organ in these suspected cases. If, externally and internally, the gallbladder gave no signs of disease, no matter how much "dyspepsia" the patient had suffered from, it scarcely seems that there is ground for more radical measures. On the other hand, if we accept the view that sterile, symptomless gallstones may exist, it would indeed seem possible that they might be removed and the gallbladder incision afterward closed tightly, thus accomplishing a cure with as much certainty as would be the case after cholecystectomy.

As to the second point, namely, the possibility of the escape of bile into the peritoneal cavity, the danger is more fancied than real. In the first place, with the technic to be illustrated, there is no reason why bile should escape. Bile pressure, either as a result of the secretory activity of the hepatic cells or the contractile power of the gallbladder, is low: so low that there is no danger of leakage through a properly sutured wound, provided no foreign body, such as a drain, be placed in contact with the suture line. Even though a small amount of bile did escape into the peritoneal cavity, no serious harm would ensue. I have found that, in dogs, making an incision into the gallbladder several times larger than the diameter of the common duct not only is survived, but examining the peritoneal cavity several weeks afterward fails to show any effects, except the presence of adhesions in the vicinity of the gallbladder.

Not only is the freedom from danger of cholecystotomy demonstrable by animal experimentation, but the opportunity to use the operation clinically has occurred in a few cases, and the results obtained here have still further convinced me that there is a definite field of usefulness for this procedure. In the present state of our knowledge, it would seem that this operation is definitely indicated, first, for the purpose of exploration in those cases in which there exists more than a possibility that we are dealing with a normal gallbladder, and, secondly, to remove the danger of future trouble when calculi are present as sterile foreign bodies in a gallbladder free from pathologic changes.

TECHNIC

In performing the operation of cholecystotomy in the cases in which it is indicated, it is scarcely necessary to emphasize the importance of careful technic. Three points deserve especial mention: (1) the avoidance of unnecessary trauma to the gallbladder; (2) protection of the adjacent peritoneum from contact with the concentrated and, possibly, infected bile; (3) tight closure.

Seizing the gallbladder with clamps injures the wall and will inevitably interfere with healing; the organ must be handled with the utmost care. Packing gauze around the gallbladder, according to Moynihan's suggestion, preliminary to opening it (Fig. 1 *b*) prevents soiling the peritoneum with bile. A trocar is then thrust through the wall (Fig. 2 *a*) and the bile removed as thoroughly as possible. Next, the opening in the gallbladder is enlarged and the irrigator-aspirator introduced (Fig. 2 *b*), the gallbladder being carefully irrigated with isotonic saline solution. The gallbladder is then carefully inspected, internally as well as externally, and any calculi that may be present are removed.

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[7] The Functions of the Gallbladder and the Bile Ducts, editorial, J. A. M. A. 77: 1738 (Nov. 26) 1921.

It has been found that the use of a lens giving a magnification of ten diameters is a great assistance in the internal inspection, bringing out detail that could not be detected by the unaided eye.

In closing the gallbladder incision, a small curved intestinal needle and No. 0 to No. 1 plain catgut are employed. The first line of sutures includes the muscular and submucous coats, but does not penetrate the mucosa or the visceral peritoneum (Fig. 3 *a*). Finally, the edges of the peritoneal coat of the gallbladder are brought together by a stitch which occasionally dips down to include the muscular coat, thus eliminating dead space (Fig. 3 *b*).

DERMATITIS HERPETIFORMIS IN CHILDREN

REPORT OF TWO CASES

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Dermatitis herpetiformis is a somewhat uncommon cutaneous disease characterized by the presence of an eruption of vesicles, papules, bullae or pustules, occurring in groups and usually accompanied by intense itching and burning sensations.

The disease is often ushered in with a sense of chilliness, some fever, and a feeling of malaise. The eruption, which may be any of the types mentioned, is almost always symmetrically distributed, is grouped, and occurs in successive attacks with periods of partial or complete remission. The lesions of one attack may be of one type, or at least one type may predominate, and in the next recurrence they may present an altogether different aspect.

The symptoms consist of intense itching, burning or pricking sensations, and are virtually always present. These are most marked at the beginning of an attack, and are relieved on rupture of the lesions. In long continued cases, the lesions are found on special areas, such as the elbows, the lumbosacral region, the popliteal spaces, the trochanteric regions and about the scapulae. The lesions occur in successive groups, and their grouping is characteristic. The general health is well preserved, even in cases of long duration.

Dermatitis herpetiformis in children is not at all common. McLeod[1] states that in 11,000 cases of cutaneous diseases admitted to the Victoria Hospital for Children, there were only three cases of dermatitis herpetiformis.

In 1907, Knowles[2] reviewed the literature and reported a case in a girl, aged 6 years. He found at that time fifty-seven reported cases by forty-one different authors. The disease as it occurs in children, Knowles concludes, shows four distinct differences from the adult type. Itching is not so marked as in adult cases, the multiformity of the eruption is absent, grouping is found but seldom, and pigmentation as a sequel is present in less than a quarter of the cases. Both of our cases, however, showed marked itching, and distinct grouping. The multiformity was not marked; and, while there was some pigmentation, it was not very noticeable.

REPORT OF CASES

The first case described is interesting because of the age of the patient, its widespread character, and its response to treatment.

W. K., a boy, aged 18 months, was brought to the outpatient department of the Children's Memorial Hospital, May 4, 1921, with a widespread bullous and papulovesicular eruption. There was little in the paternal or maternal history of importance except that the mother had always been of a nervous temperament. The patient was the fourth child. Two others were living and well; one died of pneumonia. The mother suffered a severe attack of influenza in March, 1919, while carrying the child, but recovered and was delivered at term without instruments after a two hours' labor.

At birth, the child weighed 8 pounds (3.4 kg.). He was breast fed for the first two months, and then breast fed with supplementary feedings until he was 11 months old. At that time he was put on a general diet. He had his first teeth at 6 months, and walked at 10½ months. Until the last year he had had no contagious disease. In the summer of 1921 he had whooping cough. He had never been vaccinated, had always slept poorly, and had always been extremely nervous and irritable. The present illness began about Feb. 1, 1921. At that time a small bulla developed on the chin. It was treated locally, and in a few days disappeared. The first week in March, small pea sized bullae appeared on the calves of the legs. A day later, similar lesions appeared on the extensor surfaces of the arms. The disease in this way kept appearing, until three weeks later it had extended over both legs up as far as the loins, over the back, both arms, scalp and face. This attack lasted three or four weeks, and then cleared up.

April 20, the disease again recurred on the same sites, and the child was brought to the dispensary, April 27. When examined, the child appeared extremely nervous and restless. His legs, arms, hands and feet were covered with a bullous and papulovesicular eruption that was pruritic. The predominating lesion was a bulla, the size of a bean. These bullae were tense and distended for the most part, but numbers of them had ruptured, and the broken lesions were covered with scabs.

The other lesion seen was papulovesicular, and was the size of a split pea. Both the anterior and the posterior surfaces of the legs and arms were the seat of most of the eruption, though numerous lesions were present on the hands and feet, in groups on the back, abdomen and chest, and in places on the face, about the mouth, ears and scalp. The grouping was best seen on the back, abdomen and chest. There were also seen crusts, excoriations and areas of pigmentation, the seat of former lesions. A tentative diagnosis of dermatitis herpetiformis was made, and liquor potassii arsenitis (Fowler's solution), 1 minim (0.06 c.c.) three times daily, increasing the dosage 1 minim daily, with a soothing lotion externally, was prescribed for him. The patient returned two weeks later with the greater part of his eruption gone.

A general physical examination revealed the head symmetrical and the fontanels closed. The pupils were equal, and reacted to light and accommodation. There was no nystagmus or strabismus. There was a slight purulent discharge from the nose and left ear. The tonsils were enlarged and ragged.

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[1] McLeod: Diseases of the Skin, New York, Paul C. Hoeber, 1921, p. 886.

[2] Knowles: J. Cutan. Dis. **25**: 247, 1907.

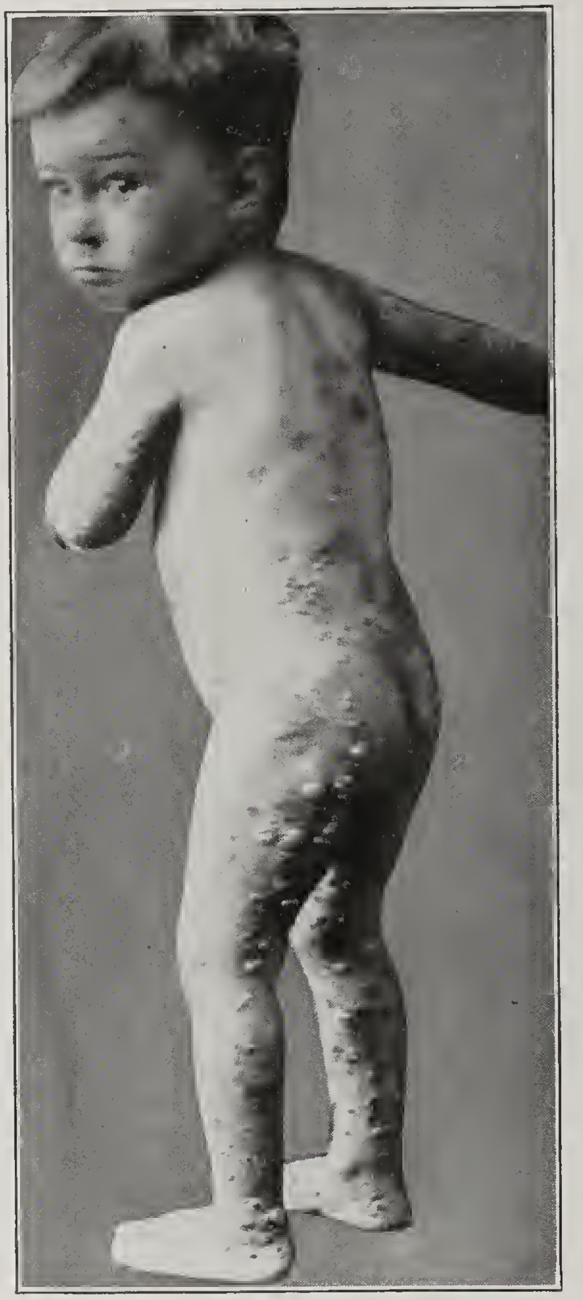
The cervical glands on both sides of the neck were enlarged to the size of a bean. They were not tender. The heart and lungs were normal. The liver was barely palpable, but the spleen was not. There was no abdominal tenderness. The prepuce was long, but not adherent. Both testicles were in the scrotum. The reflexes were active. The specific gravity of the urine was 1.015, and the urine was normal.

Blood examination revealed: hemoglobin (Sahli), 80 per cent.; erythrocytes, 4,790,000; leukocytes, 21,100; polymorphonuclear leukocytes, 33.1 per cent.; small lymphocytes, 56.3 per cent.; large lymphocytes, 5.4 per cent.; eosinophil cells, 4.0 per cent.; basophil and transitional cells, each, 0.6 per cent.

Case 2.—I. F., an undersized girl, aged 10 years, brought to the office by her parents, Dec. 29, 1921, had had the present eruption continually for the last two years. At times it had been distinctly better, but never entirely well. She was an only child, and lived on a farm just outside Chicago. Both parents were living and well. None of the family had ever had a cutaneous disease, and there was no history of miscarriages. She had never been vaccinated, and had never had any of the acute contagious diseases of childhood. The present trouble began two years before on the neck.

The child presented a textbook picture of dermatitis herpetiformis. There was symmetrically placed groups of lesions extending over the entire body. The intervening skin was normal in every respect. These groups were of various sizes, some as large as the palm of the hand, others the size of a silver half dollar. They were made up of papules and papulovesicular lesions ranging in size from that of a pinhead to that of a split pea. These groups were seen over the sternum, the scapulae, flexures of the elbows, backs of the hands, lumbosacral region, inner surface of the thighs, popliteal spaces, and dorsal surfaces of the feet. The chief symptom complained of was marked itching, especially when she was warm.

The height of the patient was 4 feet 5 inches (134.6 cm.), weight, 54 pounds (24.5 kg.). The eyes were clear; the pupils reacted to both light and accommodation. There was no nystagmus or strabismus. The tonsils were very large, but did not appear diseased. The teeth were in fair condition. The chest was symmetrical, and the heart and lungs were negative. The liver and spleen were not palpable. The reflexes were active. The specific gravity of the urine was 1.014; no albumin or sugar was present. The Wassermann reaction was negative. Blood examination revealed: hemoglobin, 81 per cent.; erythrocytes, 4,130,000; leukocytes, 5,200; polymorphonuclear neutrophils, 62 per cent.; eosinophils, 4 per cent.; basophils, 0; large mononuclears, 3 per cent.; small mononuclears, 31 per cent.



Generalized eruption of papulovesicular lesions in Case 1.

The first patient has been under observation for the last ten months, and when last seen, a week before this was written, still had slight attacks, with scattered groups of a papular and bullous eruption, but has gained in weight and strength and looks and acts like a normal child. His nervousness has to a great extent disappeared. When first seen, arsenical medication was begun. Fowler's solution, beginning with 1 drop daily and increased gradually until he was taking 15 drops (1 c.c.) daily, was given. After three weeks of this medication, the eruption entirely disappeared. To ascertain whether the eruption had disappeared spontaneously or whether the arsenic was controlling it, the medication was discontinued, and the eruption promptly reappeared.

Dermatitis herpetiformis is so uncommon in children that it was with hesitancy that the diagnosis in this case was made. It is well known that arsenic will sometimes control these pemphigoid eruptions in children. The fact that the disease was multiform in its lesions, the distinct grouping seen, the presence of small pea sized bullae arising from erythematous macules, the intense itching and the lack of involvement of the mucous membranes, together with its frequent reoccurrence when medication was discontinued, seem to clinch the diagnosis.

Dermatitis herpetiformis is a disease of adult life, rarely of children. In some cases there is found nothing to account for the intense cutaneous reaction. In some, the general health seems unimpaired. Enough, however, is known to indicate that, in adults at least, the disease is a neurotic one. It manifests itself time and again after severe mental strain and nervous shock, and its connection with the nervous system is well seen in cases that are due to pregnancy.

Leredde believes that the toxin responsible for the disease is a product which in health is eliminated by the urine, but, in renal disease, accumulates and acts on the nervous system, the skin and the blood cells; hence the eosinophilia. Crocker[3] believes that it can be explained by a toxin produced in the intestine which causes a reflex irritation of the vasomotor centers.

In the cases investigated by Knowles, the majority of the children were in good condition. In twenty-six of the fifty-seven reported cases there was a possible cause. In eleven cases there was a marked neurotic tendency in the family. In the others, diphtheria, pertussis, nephritis, sepsis, vaccination and phimosis were considered the etiologic factors. Roussel has reported a case in which phimosis was apparntly the cause since, after circumcision, the child recovered. In our first case the mother's influenza and her extreme nervousness were possible factors in the etiology of the disease. In the second one there was no factor that we could consider.

Bowen[4] has reported six cases in which the diagnosis of dermatitis herpetiformis seemed to be the only logical one and vaccination seemed to be the causative factor. Cases with this etiology have been reported by Pusey, Dyer and Stelwagon.[5] Neither of our patients had been vaccinated. The youngest reported case is that of Morris[6] in an infant, aged 13 weeks.

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[3] Crocker: Diseases of the Skin, Philadelphia, P. Blakiston Son & Co., p. 336; Brit. M. J., 1886, p. 969.

[4] Bowen: J. Cutan. Dis., 1901, p. 401; 1905, p. 79.

[5] Stelwagon: Diseases of the Skin, Philadelphia, W. B. Saunders Company, 1919, p. 276.

[6] Morris, Malcolm: Brit. J. Dermat., 1896, p. 275.

POTENTIAL CARDIAC DISEASE AND PREVENTION OF ORGANIC HEART DISEASE IN CHILDREN

A STUDY OF SIXTY-FIVE CASES UNDER CONTINUOUS OBSERVATION FOR AN AVERAGE PERIOD OF FOUR AND ONE-HALF YEARS *

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Part I. Potential Cardiac Disease

In the winter of 1915-1916, the cardiac patients under care in the general pediatric clinic at St. Luke's Hospital were grouped together in a special clinic where an energetic effort was instituted for the relief of cardiac disease. It soon became apparent that, in all probability, preventive measures would yield more satisfactory results than could be obtained by attention to relief alone. It was a matter of common knowledge that between 80 and 90 per cent. of the cases of organic heart disease in children were closely associated with the so-called rheumatic manifestations. The heart did not always become involved at the first appearance of these conditions, but with repeated attacks the chances became ever greater that actual damage would occur. A study of the natural history of the rheumatic manifestations disclosed that the active phases tended to recur, often with increasing frequency and severity. In many instances the advent of cardiac involvement was a matter of time alone. Accordingly, cases of acute rheumatic fever, chorea, recurring pains in the bones and joints (growing pains), and myositis, in which the heart was normal were classified as potential cardiac cases.[1] This term seemed particularly well adapted to this group of cases, and children suffering from these conditions were enrolled as regular members of the cardiac clinic. Although the organization, management and methods employed in this clinic have already been described in detail,[2] it was found necessary to wait a considerable period before trustworthy deductions as to the value of the work could be made. This paper is concerned with the results obtained. It is well understood that, while important, the findings in so small a series of cases could not be considered as final.

CLINICAL ENTITIES INCLUDED IN THE POTENTIAL CARDIAC GROUP

It is deemed wise to define specifically the clinical entities included in this series of potential cardiac cases and to state the reasons for such inclusion. The conditions referred to as rheumatic manifestations are, as a rule, fairly definite clinical entities in children. By acute rheumatic fever is meant the classical polyarthritis (infrequently monarthritis) associated with a febrile reaction and physical changes in the joints which return to normal (or apparently so) at the cessation of the attack. Cases showing chronic changes in the joints have not been included. Myositis refers to conditions such as torticollis. By bone and joint pains are meant the constantly recurring dull, aching pains in the hands, feet, long bones and larger joints which were unaccompanied by a febrile reaction or physical change in the part. By chorea is meant the classical clinical entity characterized by the typical movements. Sore throat refers to tonsillitis or pharyngitis. Although these conditions (except acute rheumatic fever) are seen in the general pediatric clinic with great frequency in all degrees of severity, only severe and clearly defined cases were selected for enrolment in the potential cardiac group. The acceptance of all cases, the milder ones of which were only remotely predisposed to cardiac disease, would have defeated the purpose of the special class.

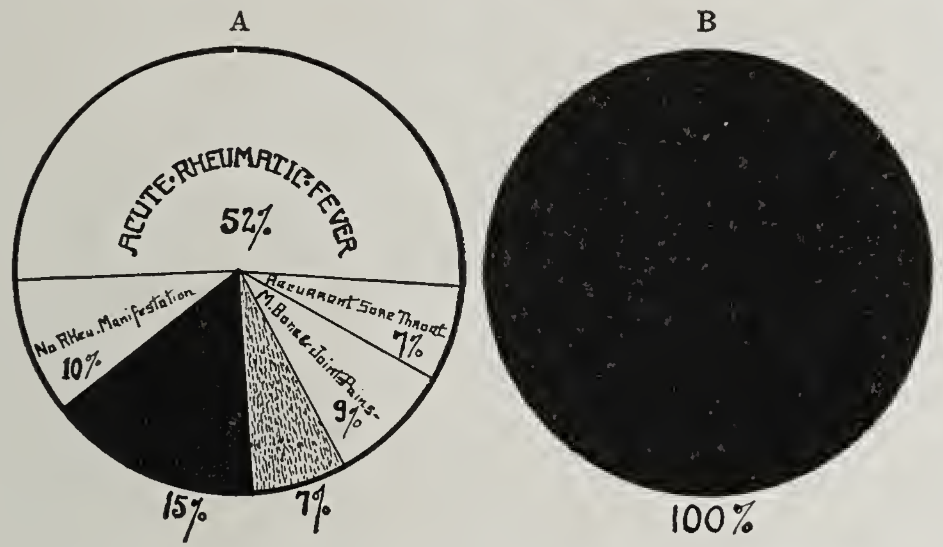

Fig. 1.—*A*, 100 cases of cardiac disease in children. These patients were not under management during the potential stage of the disease, but appeared at the clinic with a lesion in the heart. The relative frequency of the rheumatic manifestations in these cases is indicated by the various sectors in the circle. The cardiac lesion was attributed to acute rheumatic fever (no chorea in these cases) in 52 per cent. In 7 per cent., both acute rheumatic fever and chorea had occurred, and it was impossible to determine which factor was responsible for the lesion in the heart. Disease of the heart was attributed to chorea in 15 per cent. of the cases. If this factor was responsible for all the lesions occurring in cases showing both chorea and acute rheumatic fever, the total attributed to chorea would be 22 per cent. *B*, the sixteen patients admitted to the clinic during the potential stage who developed cardiac disease while under management. The lesions in all of these cases were attributed to chorea (100 per cent.). A striking difference in the importance of the various rheumatic manifestations concerning disease of the heart may be noted, depending on the presence or absence of treatment. Preventive measures have greater effect when directed against acute rheumatic fever and myositis, bone and joint pains and sore throat. All cases characterized by these manifestations have remained free of cardiac disease to date. In the untreated potential case, acute rheumatic fever is the most important factor, whereas, in the potential case under treatment, chorea is the most important rheumatic manifestation concerning disease in the heart. Solid black, chorea; shaded area, both acute rheumatic fever and chorea.

The number of cases of each clinical entity was dictated largely by the material available. The rheumatic fever group is relatively small because the heart is frequently involved at the first attack. Cases of chorea are numerous, and in most instances this disease persists for a prolonged period before a lesion occurs in the heart. Larger numbers are therefore readily available. Nine per cent. of our cardiac children give a history of recurring attacks of myositis and bone and joint pains in the absence of acute rheumatic fever or chorea. For this reason these conditions were believed to bear a close relation to disease of the heart, and children with such a history were included in the potential group. Frequently, such recurring attacks of myositis and bone and joint pains precede, for varying periods, typical attacks of acute rheumatic fever with accompanying cardiac involvement. About 7 per cent. of cardiac children give a definite history of recurrent attacks of sore throat in the absence of other rheumatic manifestations; however, when the great frequency of this condition throughout childhood was considered, it was found unpractical to include them.

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* Read before the Boston Association of Cardiac Clinics, at the Peter Bent Brigham Hospital, Jan. 19, 1922.

* Published from the Department of Diseases of Children, Columbia University College of Physicians and Surgeons and the Children's Cardiac Clinic, St. Luke's Hospital, New York.

[1] St. Lawrence, William: A Clinical Classification of Cardiac Disease, Arch. Pediat. 34: 308, 1917.

[2] St. Lawrence, William, and Adams, E. Louise: The Organized Care of Cardiac Children, Hosp. Social Service Quart. 2: 151, 1920.

Opinions differ as to the importance of scarlet fever, diphtheria, pneumonia and other acute infectious diseases in the production of cardiac disease in childhood. While these diseases would seem to be occasionally accompanied by a lesion in the heart, it was felt that they had no great bearing on the cardiac problem.

THE PERIOD OF OBSERVATION

These children have been under continuous observation for from one and one-half to six and one-half years, or an average period of four and one-half years. Throughout this entire time they have been carefully questioned and examined at fairly regular intervals. During the earlier and more active stages of the disease, examinations were performed at intervals of from one to four weeks. When the heart had remained normal long after the rheumatic manifestations had ceased to recur, and when the general health and nutrition made it possible, the patients were placed on the inactive list at the clinic and examinations were then made at intervals of from three to six months. Not infrequently, as in Case 57, Table 3, the course of the disease has been continuously observed from the earliest stages to the unfortunate end. Virtually all patients have been questioned and examined within a few weeks of the date of writing. Case 1, Table 2, will serve as an example. This child was under observation almost seven years, during which time she was examined forty-eight times—an average of one examination in every six weeks. She has been well most of this time, and her heart has remained normal to date.

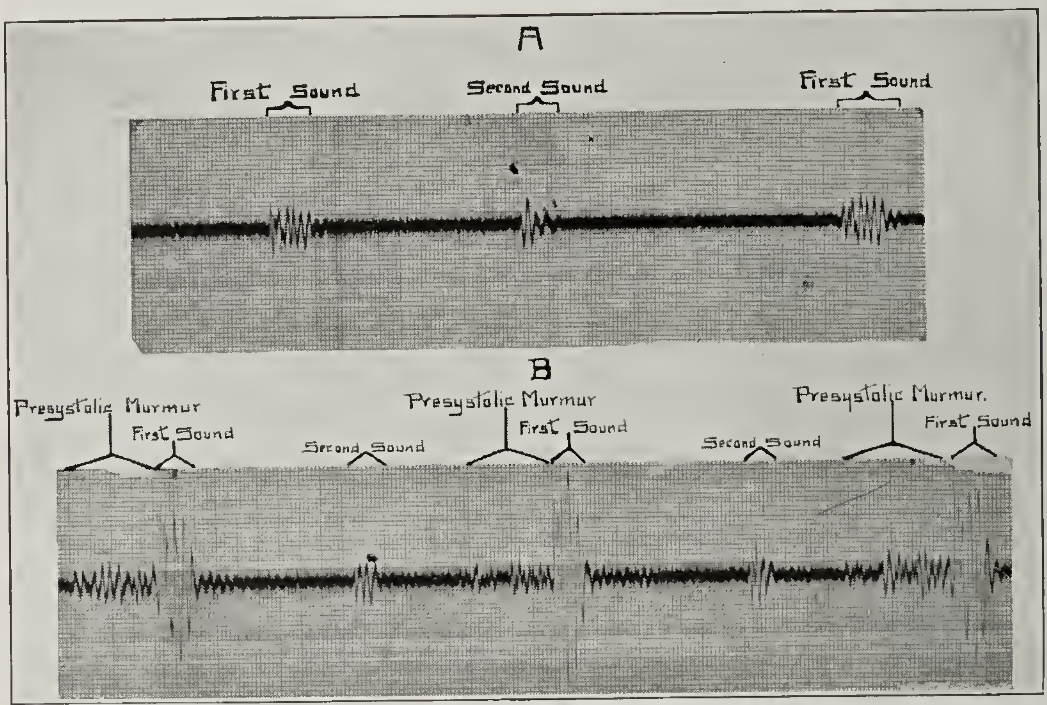

Fig. 2.—Effect of the rate of the heart on the murmur of mitral stenosis: *A*, graphic record of sounds at the apex of the heart made while child was at rest. The heart rate was about 85. *B*, graphic record of sounds at the same location on the same child. This was made a few minutes later, immediately after the child had hopped ten times on one foot. The heart rate was about 126. The increased rate of the heart is accompanied by the presence of a low pitched murmur which begins in mid-diastole and ends in the first sound. This murmur is not present in the first record, which was taken at a lower heart rate.

Such intense observation requires much time and necessarily places a limit on the size of a cardiac class. The facilities of the average large general hospital permits of an enrolment little beyond 250 cases. In the well balanced clinic, scarcely more than 25 per cent. can be devoted to potential cardiac patients, and it will therefore be seen that the total number in any one clinic will probably never be very large.

THE SERIES

This series comprises sixty-five potential cardiac cases. They have been arranged in four symptom-groups in Table 1. Tables 2 and 3 give detailed information of individual cases. There were thirty-one girls and thirty-four boys. Of the twenty-five rheumatic fever patients, nine were girls and sixteen were boys; of the eight patients with bone and joint pains, two were girls and six were boys; of the forty-one chorea patients, twenty-three were girls and eighteen were boys. The ages varied from 5 to 12 years on admission to the clinic. The average age was 8⅓ years.

RESULTS OF AN ATTEMPT TO PREVENT DISEASE OF THE HEART

Having placed a group of potential cardiac patients under highly organized management in an earnest effort to prevent disease of the heart, it would be valuable indeed to compare the results obtained with those occurring in a series under natural conditions. Unfortunately, there is no such series in children for comparison. A follow-up study of a group of cases of acute rheumatism comprising all ages (mostly adults) and not subject to modern methods of management showed that "23 per cent. of patients go through one or more attacks of acute rheumatism without any clinical affection of the heart, irrespective of the age when first attacked." It is implied that 77 per cent. of the patients contract a cardiac lesion at the first attack or subsequent attacks. When it is realized that cardiac disease more commonly accompanies acute rheumatism in children than in adults, the difference between these figures and those to be presented is even more striking than would at first appear.[3]

Of the sixty-five children under observation, forty-nine (75 per cent.) remained free from evidence of cardiac disease for an average period of four and one-half years. This seemed due almost entirely to the success of the effort to diminish the recurrence, or to cause the cessation of the rheumatic manifestations. This number, however, will almost certainly diminish with time, for there are children with normal hearts now in this group who are constantly suffering severe recurrences of acute rheumatic fever or chorea. In the past, such patients have rarely failed to contract eventually a lesion in the heart. It is difficult, indeed, to determine the time at which recovery from the rheumatic manifestations may be considered to be secure. Cases of recurrence are seen after years of complete freedom. In general, it may be stated that if a child remains free for a period of three years, recovery may be regarded as fairly safe. Observations on this matter in fifty children continuously followed over a period of five and one-half years revealed the fact that in only four cases was there recurrence between the third and the fifth years.

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[3] Kemp, C. G.: Prognosis of Acute Articular Rheumatism, with Special Reference to the Cardiac Manifestations, Quart. J. Med. 7: 251, 1913-1914.

Sixteen children (25 per cent.) contracted a lesion in the heart while under observation. Except for uncommon instances described in Part II, each case was characterized by the continuous presence of a rheumatic manifestation in a severe form. Ten girls, as compared to six boys, showed cardiac involvement. This difference was probably due to the fact that there was a greater number of girls with chorea in the series.

TABLE 1.—FOUR SYMPTOM-GROUPS

	Patients Under Observation for an Average Period of 4½ Years		Patients Who Contracted a Lesion in the Heart While Under Observation		
			No. of Cases	Per Cent.	
	16	Acute rheumatic fever; no chorea............	0	0	
	8	Myositis, and bone and joint pains associated with sore throat; no acute rheumatic fever or chorea	0	0	
41	32	Chorea; no acute rheumatic fever...........	12	38	39
	9	Chorea and acute rheumatic fever (see text)	4	44	
	65		16	25	

ACUTE RHEUMATIC FEVER

There were twenty-five cases of acute rheumatic fever in the series. In sixteen of these there was no history of chorea, while the remaining nine had shown both manifestations.

In each of the sixteen cases of acute rheumatic fever unaccompanied by chorea, the heart has remained normal to date. These children had suffered from one to four attacks and had shown varying combinations with bone and joint pains and sore throat (Table 2, Group 1).

ACUTE RHEUMATIC FEVER AND CHOREA

There were nine cases in which acute rheumatic fever was associated with chorea. Five of these children have remained free from evidence of cardiac involvement (Table 2, Group 4). In each of the four others the heart has presented evidence of disease (Table 3, Group 6). The lesions are: two cases of aortic and mitral insufficiency; one case of mitral insufficiency, and one case of hypertrophy without demonstrable valvular lesion.

Because of the close observation of these children, it was possible to study the relation of the date of the attacks of acute rheumatic fever to the date and circumstances of the discovery of the cardiac lesion. In Case 62, Table 3, Group 6, the cardiac lesion preceded a very mild attack of acute rheumatic fever. It occurred during an attack of chorea. In Case 63, Table 3, Group 6, an attack of rheumatic fever occurred in January, 1917. During the next thirteen months this child was examined nine times, and no evidence of cardiac disease was found until February, 1918, when the diagnosis of mitral insufficiency was made. During this period she had suffered from chorea in varying degrees of severity. During an exacerbation of chorea, an aortic insufficiency was discovered in May, 1919. In Case 64, Table 3, Group 6, almost six years elapsed between the attack of acute rheumatic fever and the appearance of signs of disease in the heart. The lesion appeared during a recurrence of chorea. In the three years preceding the discovery of the cardiac involvement, this boy was examined twenty times, and the heart presented no evidence of disease at these examinations. In Case 65, Table 3, Group 6, nearly four years intervened between the rheumatic attack and the development of the signs of the cardiac lesion. During this time the manifestations of chorea were almost continuous.

In each of these four cases, only a single attack of acute rheumatic fever occurred. It was a very mild attack in every instance. In each case the heart presented no evidence of disease at repeated examinations for a prolonged period following the attack. The clinical picture of every case was dominated by chorea which was severe, uncontrollable, constantly recurring and present at the time of the discovery of the lesion in the heart. It would therefore seem certain that the heart remained uninvolved at the time of the attack of acute rheumatic fever, and that the lesion resulted from chorea in each of these cases.

TABLE 2.—FORTY-NINE POTENTIAL CARDIAC CASES IN WHICH THE HEART PRESENTED NO EVIDENCE OF DISEASE WHILE UNDER OBSERVATION FOR AN AVERAGE PERIOD OF FOUR AND ONE-HALF YEARS*

No.	Name	Age	Sex†	Date of Admission	Months Under Observation	Acute Rheumatic Fever	Myositis; Bone or Joint Pains	Chorea	Sore Throat
	Group 1—Cases of Acute Rheumatic Fever, No Chorea								
1	C. McL.	5	♀	7/15	80	+	+	0	++++
2	A. H.	5	♀	7/15	80	+++	++++	0	++++
3	T. M.	11	♂	7/15	80	+	0	0	+
4	R. P.	11	♂	7/15	80	+	++++	0	+
5	W. O'K.	12	♂	1/16	74	++	++++	0	++++
6	J. W.	6	♂	3/16	72	+	++++	0	++++
7	M. H.	7	♀	12/16	63	+	+	0	+++
8	E. G.	10	♂	6/17	57	+	++++	0	++++
9	L. R.	10	♀	6/17	57	++++	++++	0	++++
10	E. M.	6	♀	3/19	36	+	0	0	+++
11	H. W.	11	♂	8/19	31	+	++	0	+
12	E. L.	6	♀	10/19	29	+	+++	0	++
13	O. L.	6	♂	4/20	23	+	+	0	++
14	P. McA.	7	♂	5/20	22	+	0	0	++
15	H. F.	11	♂	6/20	21	++	+++	0	+++
16	M. C.	6	♂	10/20	17	+	0	0	+++
	Group 2—Cases of Chorea; no Acute Rheumatic Fever								
17	W. W.	7	♂	6/15	81	0	0	++++	0
18	A. F.	9	♀	7/15	80	0	0	++++	0
19	O. W.	6	♀	2/16	73	0	0	+++	0
20	I. R.	8	♀	3/16	72	0	+++	+	++
21	N. M.	7	♀	5/16	70	0	0	+++	0
22	J. R.	10	♂	5/16	70	0	0	++	0
23	M. S.	8	♀	8/16	67	0	++++	++	+++
24	M. K.	12	♂	12/16	63	0	++	++	+
25	E. K.	6	♀	1/17	62	0	++	++++	+
26	J. R.	5	♂	3/17	60	0	+	+	+
27	H. W.	6	♂	4/17	59	0	++++	++	+++
28	M. G.	10	♀	4/17	59	0	++	++	0
29	C. N.	10	♀	5/17	58	0	++	+++	+++
30	F. N.	5	♂	5/17	58	0	0	+++	0
31	F. B.	7	♂	6/17	57	0	+	++++	++++
32	L. R.	10	♀	11/17	52	0	++++	++	++++
33	H. D.	11	♀	12/17	51	0	++++	++	+
34	J. F.	10	♂	10/19	29	0	0	++	++++
35	W. B.	10	♀	11/19	28	0	0	+++	+
36	E. L.*	7	♀	4/20	23	0	0	+	0
	Group 3—Cases of Myositis, Bone or Joint Pains; no Acute Rheumatic Fever or Chorea								
37	R. K.	5	♂	10/15	77	0	+++	0	++++
38	S. F.	6	♂	11/16	64	0	+++	0	+
39	J. M.	7	♂	12/16	63	0	++++	0	++
40	M. B.	5	♀	3/17	60	0	+++	0	+++
41	W. S.	8	♂	5/17	58	0	+++	0	+++
42	H. L.	6	♂	3/18	48	0	+++	0	+++
43	M. S.	7	♀	12/19	27	0	+++	0	+++
44	K. S.	11	♂	5/20	22	0	++++	0	+++
	Group 4—Cases of Acute Rheumatic Fever and Chorea								
45	H. M.	11	♀	5/15	82	+++	+++	++++	+
46	L. McM.	11	♂	6/15	81	++++	++++	++++	++++
47	F. M.	7	♂	4/17	59	+	+++	++	0
48	J. C.	8	♂	7/17	56	+	0	++	+++
49	J. O.	12	♂	7/20	20	+	+	+	+++

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* The plus signs in Tables 2 and 3 are thus employed: In cases of acute rheumatic fever and chorea, each plus sign indicates a specific attack. In cases of myositis, bone and joint pains and sore throat, plus signs indicate degree in frequency and severity; + occasional; ++ frequent; +++ and ++++ constantly recurring. Figures in column under "Date of Admission" indicate month and year at which child was enrolled in the cardiac clinic.

† In tables 2 and 3, ♂ indicates male, and ♀ female.

MYOSITIS; BONE AND JOINT PAINS (GROWING PAINS)

Eight cases were characterized by recurring attacks of myositis, bone and joint pains, and sore throat in the absence of acute rheumatic fever and chorea (Table 2, Group 3). In each of these cases the heart has remained normal to date. Although these manifestations were frequently present often with considerable severity in Groups 5 and 6, Table 3, it was not possible to determine their relation to the development of the lesion in the heart.

CHOREA

There were thirty-two cases of chorea unassociated with acute rheumatic fever, and nine cases which had shown both of these manifestations (Tables 2 and 3). Except in six instances, all the cases were severe. They were characterized by from two to four more attacks, during the intervals between which there was often an almost constant low grade manifestation of the disease. Of the thirty-two cases unassociated with acute rheumatic fever, twelve children contracted a lesion of the heart. Of the nine cases which had shown both of these manifestations, four developed cardiac involvement. Of the total of forty-one cases of chorea, sixteen presented evidence of heart disease while under observation (39 per cent.). In every case in the series in which a cardiac lesion developed, it was attributed to chorea. The lesions present in each case may be seen by reference to Table 3.

TABLE 3.—SIXTEEN POTENTIAL CARDIAC CASES IN WHICH ORGANIC DISEASE OF THE HEART DEVELOPED WHILE UNDER OBSERVATION *

Number	Name	Age	Sex	Date of Admission	Months Under Observation	Acute Rheumatic Fever	Myositis; Bone or Joint Pains	Chorea	Sore Throat	Cardiac Lesion	Date of Discovery	Causative Etiologic Factor
Group 5.—Cases of Chorea; no Acute Rheumatic Fever												
50	P. L.	9	♂	5/15	82	0	0	++++	++++	M. S.	10/19	C
51	A. G.	10	♀	6/16	69	0	0	++++	0	M. I.	5/17	C
52	J. D.	8	♂	9/16	65	0	++++	++	++	M. S.	2/20	C
53	A. McE.	12	♀	11/15	76	0	+	++++	0	A. I.	6/16	C
54	L. R.	7	♂	3/17	60	0	+++	++++	+++	M. S.	1/20	C
55	M. W.	7	♀	6/17	57	0	0	++++	0	H.	4/21	C
56	E. K.	8	♀	6/17	57	0	0	+	+	M. I.	5/20	C
57	C. M. *	12	♀	11/17	44	0	++	++++	+++	M. and A. I.	5/21	C
58	C. W.	11	♀	1/20	26	0	0	+++	++	M. I.	3/20	C
59	M. B.	10	♀	5/20	21	0	+	+++	0	M. S.	4/21	C
60	M. D.	6	♀	7/20	19	0	+++	++++	++	M. S. and I., A. I.	3/21	C
61	T. B	6	♂	7/20	19	0	+	+	++++	M. S.	9/21	C
Group 6.—Cases of Acute Rheumatic Fever and Chorea												
62	S. S.	11	♂	5/15	82	+ Nov. 1916	++++	++++	++++	M. and A. I.	10/16	C
63	A. F.	11	♀	4/16	71	+ Jan. 1917	++++	++	+	M. I., A. I.	2/18	C
64	P. V. T.	11	♂	11/16	64	+ Mar. 1914	++++	++++	0	M. I.	2/20	C
65	M. McK.	8	♀	7/19	31	+ Feb. 1916	0	++++	0	H.	11/19	C

* Died July, 1921, cardiac failure.

* Figures in column under "Acute Rheumatic Fever" indicate the date at which the attack occurred (Group 6). Letters in column under "Cardiac Lesions" indicate the lesion as: M. S., mitral stenosis; M. I., mitral insufficiency; A. I., aortic insufficiency; H., hypertrophy without demonstrable valvular lesion. Figures in column under "Date of Discovery" indicate month and year at which lesion was first observed. Letters in column under "Causative Etiologic Factor" indicate the rheumatic manifestation to which lesion was attributed; C, chorea.

COMMENT

There is a striking difference in the importance of the various rheumatic manifestations concerning disease of the heart, depending on the presence or absence of treatment during the potential stage. A study of the incidence of these manifestations in the histories of 100 unselected cases of cardiac disease in children which were untreated during the potential stage revealed: acute rheumatic fever, 52 per cent.; chorea, 15 per cent.; both chorea and acute rheumatic fever, 7 per cent.; myositis, bone and joint pains with sore throat, 9 per cent., and recurrent sore throat alone, 7 per cent. Acute rheumatic fever was the most important factor, and the greatest number of cases which might have been attributed to chorea was therefore 22 per cent. (Fig. 1 *A*). A great variation may be noted when these figures are compared to the incidence of the rheumatic manifestations in the sixteen potential cardiac patients who developed evidence of heart disease while under treatment. As already shown, in each of these cases (100 per cent.) the lesion was attributed to chorea (Fig. 1 *B*).

Measures of value in the prevention of heart disease were of greatest value when directed against acute rheumatic fever and myositis, bone and joint pains and sore throat, and least effective, if effective at all, when directed against chorea. This is not entirely unexpected. The effect of tonsillectomy on the recurrence of the rheumatic manifestations may be taken as an example. It has been shown that this procedure is much less likely to be followed by recurrences of acute rheumatic fever than chorea in cases presenting these manifestations before the tonsils were removed.[4] It will be shown in Part II that disease of the heart almost always arises during an active phase of a rheumatic manifestation. It is only natural, therefore, that measures of value in diminishing the recurrence or causing the cessation of these active phases should have influence on the advent of cardiac disease. In every instance in the series in which a cardiac lesion occurred, the case was characterized by recurring attacks of chorea. In the absence of this clinical manifestation, the heart remained free from disease. Acute rheumatic fever is the most important factor concerning disease of the heart in untreated cases of the rheumatic manifestations (52 per cent.), whereas in cases under management before the appearance of the lesion in the heart, chorea would seem to be the most important cause of such involvement (100 per cent.).

Chorea is almost certainly a manifestation of rheumatic disease. It is accompanied by some other rheumatic manifestation in a very high percentage of cases (from 65 to 80). It is associated with or followed by the same type of cardiac disease. It shows much the same seasonal variation, and it is almost always accompanied by a slight elevation in temperature. Other members of the family of a child suffering from chorea show a remarkably high incidence of the other rheumatic manifestations and cardiac disease. However, its greater frequency in girls than boys, its tendency to subside at puberty, and its infrequency in adult life would point to the influence of unknown factors.

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[4] St. Lawrence, William: The Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea, J. A. M. A. 75: 1035-1041 (Oct. 16) 1920.

It would seem unwise to retain the conception that the rheumatic manifestations are acute, self-limited diseases, usually terminating in recovery, but which predispose to future attacks. This is a conception which implies a complete cure at the conclusion of the acute attack, as might be justified, for example, in the case of pneumonia. It would seem better to consider these manifestations as expressions of a chronic disease of prolonged duration which is characterized by active and inactive (latent) phases. At present there is no method of determining the end of the latent phase and the advent of absolute cure. Chorea might be regarded as a central nervous system infection and, as such, less amenable to treatment than the other manifestations. It is a matter of common knowledge that syphilis is much more resistant to treatment when the central nervous system has become involved.

Practically all of the modern methods of treatment have been employed in the management of the chorea cases in this series. All have been equally unsuccessful in preventing recurrences, and only unusually was there any dramatic shortening of the active phase. The problem has been discouraging, and at times it has seemed quite hopeless. Because of the great frequency of this disease, the lack of effective measures in its treatment and the high percentage of cases which are accompanied by cardiac involvement, chorea is undoubtedly one of the most important, if not the most serious, chronic disease of childhood.

Part II. Development of Organic Disease of the Heart

The sixteen patients who developed cardiac disease while under observation, as well as many other cases in the cardiac clinic, have contributed interesting and important facts concerning the development and later clinical course of cardiac disease. Knowledge of the natural history of disease can be obtained only by the close observation of large numbers of cases over prolonged periods of time. The details of the natural history of cardiac disease in children were little understood when this work began, and great difficulty was experienced in predicting the course to be followed by a particular case. However, observation has taught that this disease develops or changes its course under fairly definite conditions, and that in the absence of these conditions the immediate future may be predicted with a fair degree of security. Cardiac disease in children gives evidence of its development or changes in its course during the active phase of a rheumatic manifestation or during a period of pyrexia. This applies to almost all cases except mitral stenosis, which may not present evidence of its presence for a year or more after the acute phases have subsided.

DEVELOPMENT OF CARDIAC DISEASE DURING AN ACTIVE PHASE OF THE RHEUMATIC MANIFESTATIONS OR PERIOD OF PYREXIA

The heart may be involved during the first or subsequent attacks of any of the rheumatic manifestations. The greater the duration of the active phase, the greater the chance of cardiac involvement. When the active phase subsides, the child may be considered as entering the inactive or latent phase with a lesion in the heart. This latent phase is characterized by the absence of fever and all other acute or subacute manifestations of disease. It may persist for months or years. The physical signs of the heart will remain almost absolutely unchanged during this period, and become altered only on the recurrence of an active phase. The general health and nutrition are frequently excellent; the exercise tolerance is usually high, and as a rule these children enjoy a state of perfect well being. With the recurrence of any rheumatic manifestation or pyrexia, almost any course may ensue. This varies from no demonstrable change in the lesion and general health to marked changes, cardiac failure and early death. The lesions in the heart which arise under these conditions are pericarditis, hypertrophy and the lesions of the endocardium. With the exception of mitral stenosis, rarely have these lesions been observed to arise in the absence of an active phase.

Pyrexia is important in cardiac disease in children, for it may be the only clinical expression of active disease in the heart. It accompanies acute rheumatic fever, and is almost always present in chorea. It has been invariably present in every case of cardiac failure observed (decompensation). It is quite commonly present in cases showing an appreciable reduction of the exercise tolerance. When present in a child whose heart is diseased, it may be caused by a focus of infection elsewhere in the body or in the heart itself. It is usually difficult to determine definitely its location in the heart, and, as a rule, it is so attributed only after failure to find a cause elsewhere in the body. Not infrequently, however, a change in physical signs, such as the occurrence of an aortic insufficiency in a case of mitral disease, will place the site beyond doubt. Cardiac infection may arise in a child who has never shown any of the rheumatic manifestations, or it may appear in a child in whom these manifestations have previously occurred. It may appear in a normal heart or in one already diseased. Therefore, after eliminating other foci of infection, it is important to consider pyrexia in cases which have shown any of the rheumatic manifestations and in cases of cardiac disease, as an active phase of the rheumatic infection with the lesion probably in the heart. When the heart becomes extensively diseased, the rheumatic manifestations tend to subside; and although repeated attacks of cardiac failure (decompensation) with pyrexia may ensue, it is unusual to see a frank attack of acute rheumatic fever or a classical attack of chorea.

DEVELOPMENT OF CARDIAC DISEASE IN AN INACTIVE PHASE OF THE RHEUMATIC MANIFESTATIONS DURING A PERIOD OF WELL BEING

Except in cases of mitral stenosis, the heart invariably remained free from signs of disease if normal at the time that the rheumatic manifestations made a permanent disappearance. However, mitral stenosis was frequently observed to appear long after the cessation of any rheumatic manifestation or pyrexia of any kind, during a period of freedom from infection, normal exercise tolerance and perfect well being. In Case 50, Table 3, Group 5, there was no recurrence of any rheumatic manifestation or pyrexia of any kind after May, 1918. During the next eighteen months this boy was examined five times at fairly regular intervals, and the heart presented no evidence of disease.

He was absolutely fit, had a normal exercise tolerance, and attended school regularly. In October, 1919 (eighteen months later), a typical rough, crescendo, presystolic murmur was heard at the apex when the heart rate had been elevated by exertion. The boy remained in the same excellent condition with no change in the physical signs until May, 1921, when a rough, rumbling diastolic murmur was present at the apex when the heart rate was low (rest) and the murmur already described was present after elevation of the heart rate by exercise. In Case 52, Table 3, Group 5, there was absolutely no return of any rheumatic manifestation or pyrexia after April, 1917. This boy enjoyed perfect health and possessed a normal exercise tolerance. There was no evidence of disease at monthly examinations during the next seven months (November, 1917). Owing to war conditions, he was not examined until February, 1920. There had been no recurrence of any rheumatic manifestation or pyrexia of any kind, his health had been practically perfect, and he had had a normal exercise tolerance. At examination of the heart, it presented a typical rough, crescendo, presystolic murmur at the apex after elevation of the heart rate by exertion. Patient 61, Table 3, Group 5, suffered from an attack of chorea from July to September, 1920. At frequent examinations during the next twelve months the heart presented no evidence of disease. This boy had remained free from any rheumatic manifestation or pyrexia and had been in good health with a normal exercise tolerance. In September, 1921, the heart presented a typical rough, crescendo, presystolic murmur at the apex after elevation of the heart rate by exertion. The diagnosis of mitral stenosis was made in each of these cases. They were typical examples of a sequence of events observed in other members of the cardiac clinic.

Mitral stenosis was the only lesion observed to arise after the cessation of the active phases of rheumatic infection. A year or more intervened before the heart presented evidence of disease. In each instance the child had enjoyed a prolonged period of perfect well being. Whether this change in physical signs was caused by active disease or whether it was the result of contraction of the chordae tendineae and the weblike addition to the valve between them cannot be determined. The excellent general health of these children might seem to favor the latter view. These cases have importance from the fact that they demonstrate that it is impossible to state at the conclusion of an attack of acute rheumatic fever or chorea that the heart has been unaffected by these conditions.

THE EFFECT OF THE RATE OF THE HEART ON THE MURMUR OF MITRAL STENOSIS

The effect of increased heart rate (exercise or amyl nitrite[5]) on the physical signs of mitral stenosis in children is often little short of dramatic. The examples given above are typical of many children in the cardiac clinic. They presented no evidence of disease until the heart rate was accelerated. These and other children have frequently been placed before men of experience, who, because of their failure to examine the heart immediately after acceleration of its rate, did not succeed in detecting evidence of disease. This finding is frequent and important in the early diagnosis of mitral stenosis in children. Figure 2 is a graphic record of the heart sounds at the apex before and after exercise in the same child. It was made by Dr. Horatio Williams in his laboratory at the Columbia University College of Physicians and Surgeons.

This report is intended only as a presentation of the facts observed, for while it is felt that they are important, it is well understood that the number of cases in the series is insufficient for the formation of trustworthy conclusions.

SUMMARY

1. Sixty-five cases of potential cardiac disease in children were continuously observed for an average period of four and one-half years.
2. Forty-nine patients (75 per cent.) remained free from evidence of cardiac disease during that time.
3. Of twenty-five patients with acute rheumatic fever in the series, none contracted a lesion in the heart.
4. Of nine patients with myositis, bone and joint pains (growing pains) and sore throat, none contracted a lesion in the heart.
5. Sixteen patients (25 per cent.) contracted a cardiac lesion while under observation.
6. In every case in which a cardiac lesion developed, the clinical picture was dominated by chorea in a severe form. No patient contracted a lesion in the absence of this manifestation.
7. Of forty-one patients with chorea in the series, sixteen (39 per cent.) contracted a lesion in the heart.
8. Measures of value in preventing disease of the heart are of greatest benefit when directed against acute rheumatic fever and myositis, bone and joint pains (growing pains) and sore throat.
9. Such measures have little if any value when directed against chorea.
10. In untreated potential cases, acute rheumatic fever is the most important factor concerning disease in the heart.
11. In potential cases under management, chorea is the most important factor concerning disease in the heart.
12. With the exception of mitral stenosis, cardiac lesions practically always occur during the active phase of a rheumatic manifestation or a period of pyrexia. In the absence of an active phase, the physical signs in the heart remained unchanged.
13. Evidence of mitral stenosis may not appear for a year or more after the cessation of the rheumatic manifestations. It is therefore impossible to state at the conclusion of an attack of acute rheumatic fever or chorea that the heart was unaffected by these conditions.
14. Heart rate may have a marked effect on the physical signs of mitral stenosis, as shown by a graphic record.

950 Park Avenue.

Better Teaching of Obstetrics.—There is some difference of opinion among London obstetric physicians as to the best method of obtaining a definite improvement in the teaching of practical midwifery; while some of them believe the right course to be the establishment of large midwifery and gynecologic institutes, self-contained and closely associated with maternity and child welfare centers, others believe that a better solution is the provision on a more generous and better equipped scale of lying-in wards at the various medical schools.—*Lancet*, Dec. 13, 1919.

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[5] Morison, R. A.: Value of Amyl Nitrite Inhalations in the Diagnosis of mitral Stenosis, Brit. M. J. **1**: 452 (April 20) 1918.

CARCINOMA OF THE SPLEEN

ITS MICROSCOPIC FREQUENCY; A POSSIBLE ETIOLOGIC FACTOR

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History.—G. Y., a woman, aged 42, white, married, admitted to the Hahnemann Hospital, April 7, 1921, complained of shortness of breath and pain in the left side of the neck. The family history contained nothing of importance. The patient had had measles, pertussis and mumps in childhood. She had suffered repeated attacks of tonsillitis, but no rheumatism. She spoke of "neuritis of the feet and legs." She denied alcohol and dietetic indiscretions. The menstrual history was normal. She had one child, living and well. In June, 1904, she was operated on at the Episcopal Hospital for a broad ligament cyst, and this and small ovarian cysts were punctured, but nothing was removed. In 1917, she was again admitted to the Episcopal Hospital with excruciating abdominal pain and symptoms suggestive of perforated gastric ulcer. The patient at this time gave a history of epigastric pain relieved by eating. At operation, the stomach, duodenum and gallbladder were normal: the appendix was injected and kinked, and was removed.

The present illness, according to the patient, began about a week before we saw her, when she awoke with a high fever and pain in the left side of the neck. She complained of anorexia, great thirst, shortness of breath, and a dry, hard cough. For three weeks she had suffered pain which came on about ten minutes after meals.

Examination.—The patient was in good mental but poor physical condition, with extreme anemia and a yellow skin suggestive of pernicious anemia. The teeth were poor, the gums retracted, the breath offensive, the throat negative. There was nothing local to explain the pain in the neck. The heart was slightly irregular. The systolic blood pressure was 124, and the diastolic 68 mm. Examination of the lungs revealed signs pointing to involvement of the left side of the chest, but evidence was not sufficient for a definite diagnosis. There was a lump in the left breast. The entire abdomen was sensitive, particularly along the lower border of the liver. The liver was slightly enlarged. The spleen was just palpable. Vaginal examination was negative except for a lacerated cervix. The temperature was 104 F., pulse 140, respirations 34. The roentgenologist reported findings suggestive of malignancy of the mediastinum with extension into the lung structure; also marked enlargement of the spleen. The urine showed a trace of albumin and a few casts. The hemoglobin was 21 per cent.; red cells, 1,230,000; white cells, 10,700. Differential count revealed: polymorphonuclears, 63; lymphocytes, 33; transitionals, 2; eosinophils, 1; basophils, 1. The spread showed few red cell changes, and these were not characteristic of pernicious anemia. A blood culture gave a rich growth of a hemolytic streptococcus.

The patient lived only three days in the hospital. During this time, she had a continuous high temperature and suffered frequent attacks of a hard, dry, nonproductive cough.

Necropsy.—This was performed, April 10, six hours after death. The right pleural sac contained about 250 c.c. (½ pint) of clear fluid, and both layers were very slightly thickened. The left pleura contained from 600 to 700 c.c. (20 to 23 fluidounces) of slightly cloudy fluid, and there was a fibrin-like deposit on both the costal and visceral layers, as in a serofibrinous pleurisy. The upper lobes of both lungs were crepitant and normal in appearance. The middle and lower lobe of the right and the lower lobe of the left lung were solid, resistant and noncrepitant. They were uniformly gray, fairly dry and firm on section. There were no nodules in either lung. The pericardium was normal. The heart valves and orifices and the myocardium were grossly normal. The mediastinum showed no noteworthy glandular enlargements.

There were a number of peritoneal adhesions, presumably from the previous operations. The liver was moderately enlarged, firm, smooth, light brown, and contained a few small white nodules. These nodules, of which there were only four or five, were from 3 to 10 mm. (⅛ to ⅜ inch) in diameter, and plainly resembled secondary malignant growths. The gallbladder was markedly contracted, and presented a thickened wall, especially at the neck. There were no gallstones, and the sac contained only a small amount of mucoid fluid, which could be expressed from the common duct on pressure. There were many adhesions between the gallbladder and the adjacent structures. The spleen was much enlarged, and measured 20 by 12 by 6 cm. (7¾ by 4¾ by 2⅜ inches). The organ was smooth, firm, and on section exhibited a granite-like mottling. There were no nodules to be seen or felt. The pancreas was normal in appearance and size, though there was slight enlargement of the glands about the head. The stomach and intestines were normal. The kidneys were firm and pale; the cortices normal in width and appearance. The suprarenals were normal, as was the uterus. The ovaries were slightly enlarged and cystic. The left breast contained a roughly spherical white nodule, 4.5 cm. (1¾ inches) in diameter, and not attached to the skin or underlying tissues.

Microscopic examination of the breast tumor revealed a peculiar carcinomatous infiltration overwhelming what was apparently previously a fibro-adenoma. There were no large cell islands but mostly linelike strands of cells confined to the previously adenomatous areas: the intervening fibrous tissue, of which there was considerable, showed little or no infiltration. Several small blood vessels contained tumor cells. Microscopic examination of the lungs and pleura also revealed a diffuse, carcinomatous infiltration. The thickening of the pleura was seen to be due to row upon row of single lines of cancer cells, with here and there a dilated vessel containing a small group of tumor cells. Both the right and left lungs were involved, not only in the solid lower lobes but also in the grossly normal upper lobes. The infiltration appeared particularly in the lymph spaces around the pulmonary vessels, but even the large blood vessels contained great masses of cancer cells with fairly numerous mitotic figures. The alveolar spaces were not involved by the tumor growth. The lower lobes showed, in addition, edema, a low grade desquamative pneumonia and a few small abscesses.

The liver, likewise, exhibited an extraordinary, diffuse, carcinomatous infiltration. The tumor cell proliferation was most marked about the portal connective tissue islands, but was also widely distributed in the portal capillaries; and both interlobular and sublobular veins containing tumor cells were noted. The gallbladder was densely infiltrated with carcinoma from serosa to mucosa, the cells being especially numerous in the latter. The normal epithelium had largely disappeared, though occasionally a short chain of columnar cells, semidetached, was seen. The tumor cells were neither columnar in form nor adenocarcinomatous in arrangement, but occurred in small collections of from four to six or long strands of single cells, as in the breast. Cancer cells had invaded vessels and nerve sheaths. The spleen, like the liver and lungs, was infiltrated throughout the entire organ. The carcinomatous invasion was most marked about the trabeculae and entering vessels, but also involved the pulp to some extent. The malpighian follicles were largely replaced by neoplastic cells. Tumor cells within vessels were common. A section of the diaphragm showed no carcinomatous growth.

COMMENT

There is but little reference matter on splenic carcinoma. One may consult textbook after textbook on pathology to find scarcely more than a line of mention, and this is used to state its infrequency. There is little reward in a search of the journals. The indexes of THE JOURNAL for the last ten years contain no reference to cancer of the spleen. In Ewing's encyclopedic Neoplastic Diseases, the few references are incidental. For instance, in discussing the particular susceptibility of a tissue to develop secondary tumors, he simply states that the spleen seems to escape with peculiar frequency.[1] In answer to an inquiry, Ewing[2] writes: "I do not remember an extensive infiltration of the spleen in mammary cancer, but this organ is sometimes the seat of bulky metastases from other epithelial growths. The largest I have seen were in ovarian adenocarcinoma and melanoma. I know of no summary of the literature on splenic metastases of carcinoma, while most of the references mention the comparative immunity of this organ, which on the whole is rather striking." Mallory[2] writes: "In the last twenty-five years, we have had 4,265 necropsies. There have been cancer metastates (of the spleen) ten times. That is a little oftener, probably, than you would have imagined." The rarity of splenic cancer has given rise to a hypothesis of tumor immunity of this organ. It has been shown, however, that the spleen does not possess any special resistance to tumor growth, for when neoplasms are implanted in the spleen they grow just as well as in any other part of the body.[3] The explanation of the infrequency, according to Wood,[4] lies (1) in the simple anatomic fact that the spleen possesses no afferent lymphatics; (2) in the sharp branching off of the splenic artery from the celiac axis, and (3) in the rhythmic pulsation of the spleen, whereby the tumor cells are kept oscillating in the splenic sinuses and do not find a resting place where they can obtain a foothold.

While carcinoma of the spleen is rare from any point of view, the mass of evidence on which the conclusion is based has been obtained from gross observation. The necropsy has undoubtedly furnished the statistics on this subject, and when secondary nodules have not been detected macroscopically, the search has seldom been pursued microscopically. The value of such study has been brought out by Deelman,[5] who finds that metastatic splenic cancer occurs much more frequently than macroscopic observation would lead us to suppose. He examined the spleen in seventy-five cases of carcinoma, and in seven, or about 10 per cent., microscopic splenic carcinoma was discovered. In not one of these was tumor evident grossly. Deelman follows the matter up, and shows, further, that in cases of splenic cancer we should look to the lung as the source of cancer cells and the blood vessels as the means of transmission. With regard to the origin of the metastatic carcinomas of the lung, he finds that gross manifestations or nodules are the result of lymph vessel emboli, while cancerous pneumonia and microscopic pulmonary carcinomas usually follow implantation by the blood vessels. These observations are especially appropriate to our own case, in which the lungs looked pneumonic and in which both the lungs and the spleen gave no gross hint of tumor growth, though microscopically they showed carcinomatous saturation. Schmidt[6] has also called attention to the frequency of tumor cell emboli in the lung without macroscopic changes. Once the lung is involved, grossly or microscopically, the possibility of splenic metastasis is opened.

The overwhelming streptococcus infection and the extreme anemia in our patient obscured the malignant aspects of the case during her three days' stay in the hospital. But, in the light of the microscopic findings and in quest of further exact information, we carefully interrogated her sister and husband, and reviewed the history with the hospital intern. The following additional information is more or less significant. A small lump in the breast had been noted at 13 years of age, but it gave the patient no trouble until about three years before her death, since which time it had been associated with pain. Some months before she went to an osteopath, who gave her "electrical treatments" and massage, and it was noted that after his treatments a lump developed in the left axilla. She was plainly anemic a month before she entered the hospital, and had had fever for one week. In the hospital, the patient remarked to the intern that she now thought she would have been better off if she had not gone to the last doctor; that she had had a lump in the breast and the doctor assured her he would scatter it or massage it away; that in his treatment, he had massaged her breast on numerous occasions. We looked up the osteopath in question, and found that he was listed as a neuropath. In answer to an inquiry over the telephone, he said he had used "electrical treatment" of the breast but no massage, but that he had massaged the abdomen and limbs after the electrical applications.

The deleterious effects of massage in malignant growths have been demonstrated both experimentally and clinically. Tyzzer[7] has watched in mice the active and early production of metastases following massage, and suggests that, for the advantage of the patient, it would be well to regard each questionable tumor of the breast as a high explosive, the least manipulation of which should be absolutely avoided. Wood[8] has shown that if a mouse tumor is massaged, the lungs in a few days will be riddled with small thrombi containing tumor cells. While only a few of these implantations continue to grow, it is obvious that repeated massage would multiply the chances. In further discussion, Wood[9] says, "A much better demonstration is, unfortunately for the patient, occasionally seen in those instances of carcinoma of the breast in which osteopathic treatment or massage has been applied to 'dissipate the tumor' by rubbing, or in those in which the possessor has used massage without instruction. In such instances, the whole thorax may be covered by an enormous number of skin nodules, and extremely early involvement of the bone marrow and all the organs of the body often occurs."

Just how important the massage factor was in this case is not certain. There is a contradiction in statements of the parts manipulated; but that some massage was carried out is admitted, and the final results are strong testimony. Such an extraordinary tumor dissemination suggests extraordinary means of dissipation. Adler,[10] in 374 cases of primary pulmonary carcinoma, reports liver metastases in 103, kidney in fifty-eight and brain in fifty-three, while the spleen was involved in only eighteen instances. This illustrates the comparative immunity of the spleen, even when the primary growth is situated most favorably for such metastases. It is likely, therefore, that some unusual factor contributed to the complete infiltration of the spleen in our case.

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[1] Ewing, James: Neoplastic Diseases, Ed. 1, Philadelphia, W. B. Saunders Company, 1919, p. 86.

[2] Personal communication to the author.

[3] Goldmann, E. E.: Beitr. z. klin. Chir. **122**: 1, 1911.

[4] Wood, F. C.: Notes on Tumors, New York, 1920, p. 48.

[5] Deelman, H. T.: Het metastatisch carcinoom van longen en milt in verband met de verspreidung van het carcinoom door het lichaam, Amsterdam, 1918. (I am indebted to Dr. F. C. Wood for a translation of this dissertation.)

[6] Schmidt, M. B.: Die Verbreitungswege des Carcinoms, Jena, 1903.

[7] Tyzzer, E. E.: J. M. Res. **28**: 309, 1913.

[8] Wood, F. C.: Notes on Tumors, New York, 1920, p. 46. Knox, Leila C.: Ann. Surg. **75**: 129, 1922.

[9] Wood, F. C.: Notes on Tumors, New York, 1920, p. 50.

[10] Adler, I.: Primary Malignant Growths of the Lungs and Bronchi, New York, Longmans, Green & Co., 1912.

SUMMARY

Carcinoma of the spleen, secondary to cancer of the breast, and part of a general microscopic carcinomatosis was present in the case here reported. The rarity of cancer of the spleen is genuine, but there is evidence to show that there is actually no local immunity, and that microscopic examination may add considerably to the number of reported cases. In this case massage was probably an etiologic factor, an evidence of the danger of tumor manipulation.

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TREATMENT AND PREVENTION OF PELLAGRA BY A DAILY SUPPLEMENTAL MEAL*

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At the suggestion of Surgeon Joseph Goldberger, an outpatient clinic was established in connection with the U. S. Pellagra Hospital and Laboratory at Spartanburg, S. C., Nov. 1, 1914. The principal motive in establishing this clinic was to test the efficacy of a supplemental diet in the treatment and prevention of pellagra in persons continuing in their normal environment.

Practically all the patients so treated resided in the vicinity of the hospital, and, for the most part, were residents of Spartan cotton-mill village, which surrounds the hospital grounds. Three patients from more distant points were able to secure accommodations at some of the nearby homes, and from there attended the clinic. All were ambulant cases of a moderate degree of severity.

The treatment was dietary in character and consisted of one meal served daily at midday in the hospital dining room. In the earlier days of the clinic, a placebo consisting of 1 part of syrup of wild cherry or fluidextract of licorice to 9 parts of distilled water was given in teaspoonful doses after each meal. An occasional laxative was given for obstinate constipation.

During the first four years of the operation of the clinic, the daily dinner consisted of fresh meat, vegetables, sweet milk, wheat bread (loaf), butter, and a dessert (usually fruit in some form). The following selections from the records are typical:

April 30, 1915: Beefsteak, field peas, sweet milk, wheat bread (loaf), butter, dessert.

April 28, 1916: Fried trout, turnip salad, mashed potatoes, wheat bread (loaf), sweet milk, butter, baked apples.

During the last two years of the operation of the clinic, corn bread was substituted for wheat bread, and buttermilk for sweet milk. Each patient was liberally served and urged to make a full meal; special emphasis was placed on the milk and meat.

Aside from this meal, the patients were allowed to follow their individual inclinations and habits, dietetically and otherwise. Many of them were cotton-mill operatives, several of whom resumed or continued their work in the mill while under treatment. A few children of school age, attending school during the sessions, came to the hospital for this meal. It is believed that there were very few, if any, changes in the hygiene and domestic environment of these patients, except possibly for the three patients from a distance who secured accommodations in the homes of mill families near the hospital so as to enable them to avail themselves of the advantages of the clinic. The medical inspections were made at the time the patients appeared for their dinner.

The clinic was in operation from Nov. 1, 1914, to July 1, 1920, during which period there were 105 admissions. Of this number, twenty-four were under treatment only a short time (less than three weeks), and are therefore excluded from consideration. Of the eighty-one patients continuing under treatment for a period longer than three weeks, twenty-seven did not present the characteristic pellagrous eruption at the time of admission, the diagnosis being based on the history or subjective complaints, or both. Since, in the present state of our knowledge of the clinical manifestations of the disease, more or less uncertainty attends a diagnosis in the absence of the distinctive skin lesion, it is considered best to exclude from present consideration the cases in which the diagnosis was not confirmed by the presence of the eruption.[1]

Of the fifty-four patients remaining, including five readmissions, fourteen were males and forty females. The ages varied between 2 and 62 years. With the exception of one colored male and one colored female, all were white native Americans. Nine were under treatment less than two months; eighteen from two to four months; eight from four to six months; three from six to eight months; one from eight to twelve months, and fifteen for one year or more. Of the fifteen patients who completed the first anniversary of their attacks under treatment, three completed also the second, two the third, and one the fourth.

In order to test, as thoroughly as possible, the influence of the supplemental meal on the prevention of seasonal recurrences, the patients were encouraged to continue under treatment even after all pellagrous symptoms had disappeared. The date of discharge, therefore, bears no constant relationship to the date of recovery from pellagrous symptoms. The average patient appeared to have fully recovered from *symptoms* within from six to ten weeks from the date of admission to the clinic. With one exception, all were free from both objective and subjective manifestations of pellagra at the time of discharge. One, Patient 93, a man, aged 53, discontinued treatment against advice after two months and three days. Though the eruption and most of the subjective symptoms had completely disappeared, he was not entirely free from nervous complaints when he ceased to appear for his meals. This patient showed marked constitutional symptoms, with pronounced mental involvement, on admission. His appetite was poor, and his teeth were in such bad condition that he could not chew his food properly. However, he showed considerable improvement during his attendance at the clinic. No patient showed a return of symptoms while under treatment.

The results of the treatment are summarized in the accompanying table.

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* The organization of the clinic begun by former P. A. Surgeon R. A. Herring was completed, and the major portion of the data herein analyzed was recorded under the supervision of Surgeons R. M. Grimm and G. A. Kempf.

[1] It should be stated that, beyond a reasonable doubt, many of these patients were clinically pellagrins, and that in most instances their general improvement was no less marked than in those who presented themselves with the eruption.

It is to be observed from the table that there had been a uniformly high percentage of annual recurrences among these patients prior to admission to the clinic. Of the two patients who gave a history of having had attacks in 1911 and six in 1912, all (100 per cent.) had recurrent attacks the following years. Of the ten who had attacks in 1913, and an equal number who had attacks in 1914, nine (90 per cent.) had return attacks the following years. Of the three patients who had attacks in 1915, all (100 per cent.) had attacks the following year. Of the seven who had attacks in 1915, and the same number who had attacks in 1917, six (85.7 per cent.) had recurrent attacks the following years. There were two patients who had attacks in 1918 and one in 1919, all (100 per cent.) of whom had recurrent attacks the following years.

SUMMARY OF PERTINENT DATA RELATING TO FIFTY-FOUR ADMISSIONS TO OUTPATIENT CLINIC FOR SUPPLEMENTAL DINNER

Case No.	Prior Attacks	Admitted	Discharged	Condition on Admission	Condition on Discharge	Recurrences Under Treatment
1	1913	11/ 2/14	12/27/15	Eruption	No symptoms	None
2	1913	11/ 2/14	8/ 4/17	Eruption	No symptoms	None
2a*	1913-14	4/10/18	10/15/18	Eruption	No symptoms	None
2b*	1913-14-18	5/28/19	9/ 3/19	Eruption	No symptoms	None
3	1912-13	11/ 2/14	1/ 8/16	Eruption	No symptoms	None
4	1912-13	11/ 9/14	10/15/18	Eruption	No symptoms	None
8	1914	5/ 9/15	7/16/15	Eruption	No symptoms	None
10	None	4/22/15	6/10/15	Eruption	No symptoms	None
13	1913-14	5/ 2/15	8/16/18	Eruption	No symptoms	None
14	1911-12-13-14	5/12/15	9/10/15	Eruption	No symptoms	None
15	1914	5/14/15	11/13/16	Eruption	No symptoms	None
16	1914	5/17/15	7/20/15	Eruption	No symptoms	None
18	1912-13-14	6/ 3/15	6/18/16	Eruption	No symptoms	None
19	1912-13-14	6/ 7/15	9/17/15	Eruption	No symptoms	None
21	Many	7/21/15	11/ 3/15	Eruption	No symptoms	None
23	1914	8/ 5/15	1/ 9/17	Eruption	No symptoms	None
23a*	1914-15	6/16/17	7/13/18	Eruption	No symptoms	None
28	....	6/25/17	10/15/18	Eruption	No symptoms	None
29	None	9/ 7/15	4/ 7/16	Eruption	No symptoms	None
42	1914	6/19/16	10/ 8/16	Eruption	No symptoms	None
42a*	1914-16	5/ 4/17	9/16/17	Eruption	No symptoms	None
44	None	6/26/16	10/ 4/16	Eruption	No symptoms	None
45	None	6/29/16	10/ 7/16	Eruption	No symptoms	None
46	1915	8/ 5/16	10/ 4/16	Eruption	No symptoms	None
53	1916	5/31/17	6/ 1/18	Eruption	No symptoms	None
54	None	5/31/17	1/ 1/18	Eruption	No symptoms	None
54a*	1917	7/16/18	9/16/18	Eruption	No symptoms	None
55	None	6/ 9/17	9/20/17	Eruption	No symptoms	None
57	1916	6/18/17	8/29/17	Eruption	No symptoms	None
58	None	6/21/17	8/15/18	Eruption	No symptoms	None
59	None	6/21/17	8/15/18	Eruption	No symptoms	None
63	1911-12-13-14-15-16	8/15/17	10/10/17	Eruption	No symptoms	None
65	None	8/20/17	9/24/17	Eruption	No symptoms	None
67	1913	8/31/17	10/15/18	Eruption	No symptoms	None
68	1915-16	9/14/17	10/15/17	Eruption	No symptoms	None
69	None	9/23/17	6/ 1/18	Eruption	No symptome	None
75	1916	3/21/18	6/ 1/18	Eruption	No symptoms	None
76	1916-17	4/17/18	10/15/18	Eruption	No symptoms	None
79	....	5/ 7/18	10/15/18	Eruption	No symptoms	None
80	None	5/ 9/18	9/16/18	Eruption	No symptoms	None
82	None	5/23/18	9/18/18	Eruption	No symptoms	None
83	None	5/31/18	9/21/18	Eruption	No symptoms	None
84	None	6/ 6/18	7/29/18	Eruption	No symptoms	None
85	1917	6/ 6/18	9/18/18	Eruption	No symptoms	None
86	None	6/18/18	7/13/18	Eruption	No symptoms	None
87	None	6/24/18	9/ 1/18	Eruption	No symptoms	None
88	None	6/25/18	9/16/18	Eruption	No symptoms	None
89	....	6/29/18	10/15/18	Eruption	No symptoms	None
90	1917	7/16/18	10/15/18	Eruption	No symptoms	None
93	1917	6/23/18	8/26/18	Eruption	Improved	None
94	None	7/30/18	9/ 1/18	Eruption	No symptoms	None
95	None	8/ 2/18	10/15/18	Eruption	No symptoms	None
96	1917 and 1919	6/ 8/20	7/10/20	Eruption	No symptoms	None
97	1917-18	4/25/19	6/21/19	Eruption	No symptoms	None

* Readmission.

To summarize: Of the forty-eight patients who had attacks prior to the one for which admitted to treatment, forty-four (91.6 per cent.) had had regular annual recurrences up to the time of admission to treatment in the outpatient clinic. Of this group, fifteen patients passed the first anniversary, three of whom passed also the second, two the third, and one the fourth, making in all twenty-five chances for seasonal recurrences while under treatment. In the light of their own previous experience, it would seem to follow that, in the absence of some protective factor, 91.6 per cent., or twenty-two recurrences, might properly have been expected to develop in these patients during the period of treatment. The fact that, on the contrary, none showed evidence of a return attack, points to the supplemental meal, the single outstanding modification in their hygiene, as that protective factor.

This view is further strengthened when we consider the course taken by Cases 2, 2a, 2b, 3, 18, 23, 23a, 42, 42a, 54 and 54a subsequent to the discontinuance of the supplemental dinner:

CASE 2.—A white woman, aged 34, was admitted to treatment, Nov. 2, 1914, with a first consecutive annual recurrent attack, and continued under treatment until Aug. 4, 1917, at which time she was discharged free of pellagrous symptoms and in good general physical condition. Her symptoms had disappeared within a few weeks after admission, and she remained well throughout 1915, 1916 and at least to Aug. 4, 1917. But on April 10, 1918, approximately eight months from date of discontinuance of the dinner, she was readmitted (as Case 2a) with a pronounced attack of pellagra and was again discharged free from symptoms, Oct. 15, 1918. May 28, 1919, approximately seven months from the date of the second discharge, she was again admitted (as Case 2b) with a definite attack, and finally discharged in good physical condition, Sept. 3, 1919, at which time she passed from observation.

CASE 3.—A white woman, aged 35, was admitted to treatment, Nov. 2, 1914, with a third consecutive annual recurrent attack, and discharged, Jan. 8, 1916, in good condition. She showed no evidence of a recurrence in 1915, and there is no record of a recurrence in 1916. However, during the spring of 1917, in connection with field studies of pellagra prevalence, she was seen with a definite attack of pellagra for which she was later admitted to the hospital as a bed patient.

CASE 18.—A white man, aged 44, was admitted, June 3, 1915, with a fourth consecutive annual recurrence, and was discharged in good condition, June 18, 1916. He showed no evidence of a return during the one year and fifteen days he was in attendance at the clinic; early in February, 1917, however, he developed a severe attack, approximately eight months after discharge, and was admitted to the hospital as a bed patient.

CASE 23.—A white woman, aged 22, was admitted, Aug. 5, 1915, with a first consecutive annual recurrent attack and discharged in good condition, Jan. 9, 1917. She showed no evidence of a recurrence during 1916, but was readmitted (as Case 23a), June 16, 1917, approximately five months from the date of discharge, with a well developed attack, and was finally discharged in good condition, July 13, 1918.

CASE 42.—A white girl, aged 12 years, was admitted, June 19, 1916, with a recurrence of a 1914 attack, and discharged free of symptoms, Oct. 8, 1916. She was again admitted (as Case 42a), May 4, 1917, approximately seven months from the date of discharge, with a definite recurrence, and was finally discharged, Sept. 16, 1917, in good physical condition.

CASE 54.—A white girl, aged 2 years, was admitted, May 31, 1917, with a first attack, and was discharged in good condition, Jan. 1, 1918. She was again admitted (as Case 54a), July 16, 1918, approximately six months from the date of discharge, and was finally discharged in good condition, Sept. 16, 1918.

It should be noted in this connection that the foregoing cases do not necessarily indicate the total recurrences after discharge from the clinic. It was not practicable to follow up these patients, and the cases cited are merely those that happened to return for treatment or for other reasons after the recurrences had developed. It is believed that many were able to prevent recurrences by a practical application of the knowledge of the value of diet in the treatment and prevention of pellagra which they had acquired while in attendance at the clinic.

In addition to emphasizing the influence of the supplemental meal on the prevention of pellagra, the records of the foregoing cases are of interest also in that they indicate in a general way, under the prevailing conditions, the limits of the deprivation period or the time required to bring about a recurrence of an attack of pellagra after the patient reverts to the former dietary customs and habits. With the exception of Case 3, whose record is incomplete, a period of from five to eight months intervened between the date of discharge and the date of the subsequent admission. The apparent deprivation period roughly indicated in this group of cases is considerably longer than is observed under ordinary conditions in pellagrous communities or pellagrous households in this section. There are several factors that may, and in all probability did, operate to prolong this period in the patients under consideration, beyond the minimal limits. In the first place, the date of readmission does not represent the date of development of the attack; in most instances the attack was well established before readmission, which would reduce this apparent period by one or more weeks. Secondly, each patient left the clinic on completion of treatment in good physical condition with, it is believed, a greater amount of reserve strength and energy than is ordinarily found among people of the same economic standing and dietary customs. This, it is believed, would tend to prolong to a certain degree the period of deprivation. Thirdly, it is more than probable that some of these patients kept up, to a greater or less extent and for varying periods of time, one or more of the items of food included in the meal furnished them at the clinic, thus tending to lessen in corresponding measure the degree of severity of the deprivation and, accordingly, to prolong the period before symptoms developed.

A fourth factor that must be taken into consideration is the date of discharge. On account of the seasonal variation in the availability of certain essential foodstuffs in this locality, the particular time of year in which discharge takes place would influence, one way or the other, the time required to develop a fresh attack. For instance, a patient discharged during the late summer or fall months would find a relatively plentiful supply of fresh vegetables, meats and poultry, while one discharged during the late winter or spring months would find a relative scarcity of these products. Since virtually all of these patients were discharged during the former period, these conditions may have contributed to prolong the period between discharge from the clinic to return of another attack.

It is of interest to note that, while the deprivation period suggested by the behavior of these patients is in all probability somewhat longer than that occurring under ordinary conditions in the same locality (from three to four months), it more closely approximates the period (from five to six months), observed by Goldberger and Wheeler[2] in the experimentally induced (primary) cases in male convicts. Their subjects had been well fed previously and had, therefore, a good reserve or nutritional background at the time of the beginning of the experiment.

In closing, it may be observed that the results here reported, pointing to the preventability of pellagra by diet, are in harmony with and confirmatory of the results of the preventive feeding in institutions reported by Goldberger, Waring and Willets,[3] in 1915.

SUMMARY AND CONCLUSIONS

1. Fifty-four definite cases of pellagra (including five readmissions) were treated at an outpatient clinic of the U. S. Pellagra Hospital, Spartanburg, S. C., by means of one supplemental daily, midday meal of fresh meat, milk, vegetables, fruit, bread and butter.

2. The patients were, for the most part, cotton-mill operatives residing near the hospital. All were ambulant cases of a moderate degree of severity. There were no significant changes in domestic environment or personal habits in other respects.

3. The eruption and, with one exception, the subjective symptoms disappeared within a few weeks after admission; there was no evidence of a recurrence while in attendance at the clinic.

4. Of a total of forty-eight anniversaries passed by this group of patients from the time of their first attacks to the date of admission to treatment, there had been forty-four (91.6 per cent.) regular, consecutive annual recurrences, while of a total of twenty-five anniversaries passed under treatment there was not a single recurrence.

5. Within from five to eight months after discharge from treatment, seven patients developed recurrent attacks, five of whom had had regular annual recurrences prior to treatment and had passed one or more anniversaries under treatment without return of symptoms. A deprivation period of less than five months is indicated.

6. One supplemental meal of fresh meat, milk, vegetables, fruit, bread (either wheat bread or corn bread) and butter was adequate to relieve the symptoms and to prevent recurrence in cases of pellagra of moderate severity in patients continuing in the environment in which the disease had originally developed or had previously recurred.

PRESYSTOLIC MURMURS IN RAPID HEARTS SIMULATING MURMUR OF MITRAL STENOSIS

WITH REPORT OF NECROPSIES

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DETROIT

In this note we record observations on patients in whom there were heard murmurs similar to those of mitral stenosis, in whose hearts at necropsy no narrowing of the mitral valve was found. The recognition of such cases is important in the proper interpretation of physical signs and in the diagnosis of disturbances of the heart, and also is of theoretical interest in the determination of the actual time incidence and mechanism of production of the crescendo or rumbling murmur and thrill of mitral stenosis which terminate in a sharp or snappy first sound and have been commonly called presystolic in time. For brevity, we shall conform to the usual designation of this murmur as presystolic, although we feel that the views formulated by Reid[1] in his recent papers, in which he maintains that the murmur is really early systolic in time, are worthy of serious consideration.

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[2] Goldberger and Wheeler: The Experimental Production of Pellagra in Human Subjects by Means of Diet, Bull. 120, Hyg. Lab., U. S. P. H. S., February, 1920.

[3] Goldberger, Waring and Willets: Pub. Health Rep. **30**: 3117-3131 (Oct. 22) 1915.

[1] Reid, W. D.: The First Heart Sound and the Presystolic Murmur, J. A. M. A. **76**: 432 (Feb. 12) 1921; The So-Called Presystolic Murmur, ibid. **77**: 1648 (Nov. 19) 1921.

Presystolic crescendo murmurs are heard in aortic regurgitation (Flint murmur) in perhaps one half of the cases (Thayer) and sometimes in adherent pericardium, as well as in certain cases of cardiac hypertrophy with hypertension, to which we shall refer later. These conditions are associated with hypertrophy of the left ventricle, and furnish instances of presystolic murmurs in large hearts. Sewall [2] called attention to the occurrence of presystolic murmurs in hearts of normal size without valvular disease, usually with accelerated heart action.

Failure properly to interpret such murmurs must lead to confusion in diagnosis with cases of true mitral stenosis. Morris and Friedlander [3] described a presystolic apical thrill in hearts of soldiers in whom there was no other evidence of cardiac disease, and laid stress on the necessity of a careful investigation of history and physical examination before such men were discharged with a diagnosis of mitral stenosis as unfit for service. Rapid and forceful heart action following exertion was commonly noted in soldiers in the presence of, or following, infections, and also in the group described by the term effort syndrome, or neurocirculatory asthenia. In some of these the presystolic thrills and murmurs led to an erroneous diagnosis of mitral stenosis. Many such cases are to be found in civil life from which the soldiers were drawn, but here the ordinary conditions of life are less likely to occasion the strain necessary to make evident the characteristic symptoms. White [4] has recently emphasized the need of more accurate differential diagnosis between heart disease and the effort syndrome and allied conditions in young people, especially young women.

The opportunity to examine such hearts postmortem has been rare, and it is for this reason that the following three cases, in which the necropsy showed the valves, particularly the mitral, normal in two cases, and without mitral narrowing in all three, are reported. A fourth case in which the presystolic murmur was noted in a large heart without mitral narrowing is added.

REPORT OF CASES

Case 1.—C. H., aged 28, private, infantry, who had served two months, unmarried, farmer, was sent to the hospital, Jan. 16, 1918, because of dyspnea, dizziness and fainting spells, and griping pain in the region of the heart on exertion. These symptoms prevented his doing double time and drilling. He denied rheumatism and venereal disease, and did not drink. He had suffered from his present symptoms for some years, and two years before had had a nervous breakdown referred to the excessive use of tobacco.

The patient was slightly under medium size, but well developed and nourished. The general examination disclosed nothing abnormal. Cardiovascular examination revealed the apex impulse in the fifth interspace. The right border of dulness was at the border of the sternum; the left, in the fifth interspace 9 cm. (3½ inches) from the midsternum. There was a definite, rather short, presystolic murmur, but no thrill at the apex. No abnormal pulsations or accentuations were present. The blood pressure was: systolic, 130; diastolic, 74. There was no arrhythmia. The pulse rate, standing, was 94; recumbent, 88; after exercise, 104, rapidly returning to normal.

A week after entering the hospital the patient developed measles, which was followed by a suppurative pleurisy, general peritonitis and septicemia. He died, Feb. 8, 1918.

Necropsy demonstrated right suppurative pleurisy, multiple abscesses of both lobes of the right lung, and bilateral purulent bronchitis, all of recent origin. The heart was normal in size and the valves were normal in every way.

In this case a diagnosis of stenosis of the mitral valve had been made because of a constant and definite rolling murmur, apparently presystolic in time, together with a proved marked limitation of cardiac response, but at necropsy no valvular or other cardiac lesion was found.

Case 2.—H. B. J., aged 21, private, unmarried, automobile mechanic, who had served four months, entered the hospital, Jan. 24, 1918, with symptoms of cough, weakness and pain in the chest. He had previously had measles, mumps, whooping cough, chickenpox, scarlet fever and pneumonia. For the last two years he had suffered from dyspnea, exhaustion and pain in the heart after exertion, and this had prevented his drilling or taking violent exercise while in the army. He suffered from "lung trouble" eighteen months before, and had had attacks of pleurisy ever since.

The patient was well nourished and of medium build. The lungs showed slight dulness at the right apex, with moist râles and friction in the right axilla and at the right base. A diagnosis of tuberculosis, chronic, right upper lobe, and pleurisy was made on these findings. Cardiovascular examination revealed the apex impulse in the fifth interspace, with the left border of dulness 9 cm. (3½ inches) to the left of the midsternum and the right border at the right sternal margin. The pulmonic second sound was accentuated. There were no thrills or pulsations. A short presystolic murmur was heard at the apex. The pulse rate, standing, was 120; recumbent, 112. Exercise was intentionally omitted because of the pulmonary condition, there was no arrhythmia. The roentgen-ray examination disclosed a normal sized heart and peribronchial thickening in the right lung. In view of the attendant pulmonary signs, and with the former case in mind, a diagnosis of valvular heart disease, which was seriously considered, was deferred.

About February 15, the patient developed a right serofibrinous pleural effusion with high fever. The fluid was removed by aspiration. He died suddenly, February 26. Necropsy revealed that the heart and all the valves were normal. The lungs showed chronic abscess of the right upper lobe, with bronchiectasis of the right lung, acute bronchitis of both lungs and right serofibrinous streptococcal pleurisy.

Case 3.—E. C., aged 22, private, unmarried, farmer, had had measles at the age of 8, and smallpox at 16. He stated that he had had no recent illness and was in good health on entering the service. In November, 1917, he contracted a cold with acute bronchitis, and finally a diagnosis of tuberculosis was made, though the sputum was negative and the pulmonary signs were indefinite. His symptoms were cough, fever, pain in the precordium, dyspnea, weakness and palpitation.

Besides the lung findings, the heart presented the following signs, on which a diagnosis of valvular heart disease was made: apex impulse in the fifth space 7.5 cm. (3 inches) from the midsternum; presystolic thrill at the apex; borders of dulness, 10.5 cm. (4⅛ inches) to the left and 3 cm. ($1\frac{3}{16}$ inches) to the right of the midsternum; presystolic rolling murmur and blowing systolic murmur at the apex; marked accentuation of the pulmonary second sound. The pulse rate, standing, was 96; dorsal, 94; after exercise, 132; two minutes later, 100. There were no arrhythmias. Roentgen-ray examination revealed a heart enlarged in the auricular region only.

While still under observation, the patient developed tuberculous meningitis and miliary tuberculosis, and died, May 8.

Necropsy revealed tuberculous meningitis, miliary tuberculosis of the lungs, spleen and kidneys, and tuberculosis of the right and the left bronchial lymph nodes, and of both seminal vesicles. The heart was normal in size, and the valves were not stenosed. There were, however, two small nodules on the auricular surface of the anterior leaflet of the mitral valve, about 2 mm. ($\frac{1}{12}$ inch) in diameter, one of which was ulcerated. Both were well removed from the line of closure. Sections of these nodules demonstrated that they were tubercles. The diagnosis in this patient was carefully considered in view of the findings in previous cases; and, while the murmur was not as loud as is often found in mitral stenosis, it was accompanied by a thrill and accentuated pulmonary second sound.

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[2] Sewall: Am. J. M. Sc. **138**: 19, 1909.

[3] Morris, R. S., and Friedlander, Alfred: The Significance of Presystolic Thrills in the Examination of Soldiers, J. A. M. A. **71**: 375 (Aug. 3) 1918.

[4] White, P. D.: The Diagnosis of Heart Disease in Young People, J. A. M. A. **74**: 580 (Feb. 28) 1920.

PRESYSTOLIC MURMURS IN LARGE HEARTS

Case 4 illustrates the occurrence of a presystolic murmur and thrill in large hearts without organic valvular defect, as pointed out by Phear,[5] Cabot[6] and others, and recently discussed by Reid.[7] Such murmurs are occasionally noted in large hearts with hypertension and beginning dilatation, and decrease in intensity or disappear with decrease in the hypertension and the return of the heart to more normal function after rest in bed.

Case 4.—A colored woman, aged 30, entered the hospital, Nov. 7, 1921, with symptoms of dyspnea, cough, generalized edema and precordial pain of four weeks' duration. On account of a well marked presystolic apical murmur and thrill, and systolic murmur, a diagnosis of mitral stenosis and regurgitation with failing compensation had been made. The left border of the heart was 17.5 cm. (6⅞ inches) to the left of the midsternal line at the fifth interspace; the right border of dulness, 2 cm. (¾ inch) to the right of the sternum. The apex beat was heaving, and was felt best in the fifth and sixth interspaces in the anterior axillary line. A presystolic thrill and presystolic rumbling murmur were heard at the apex, followed by a soft systolic murmur. The second aortic sound was accentuated; there was no evidence of aortic regurgitation. The blood pressure was: systolic, 180; diastolic, 122; the pulse was regular, 100 a minute. An electrocardiagram showed evidence of a large heart with left ventricular preponderance and probable degenerative changes. Fluoroscopic examination, November 10, showed enlargement of both the right and the left heart; there was no dilatation of the aorta. The urine contained albumin and casts. The Wassermann reaction was negative. The phenolsulphonephthalein output was 52.5 per cent. in two hours.

Ten days later the patient was much improved, although there was still some edema and dyspnea. The left border of heart dulness was unchanged. The presystolic murmur was not heard; the soft systolic murmur persisted; the second sounds at the base were accentuated. The presystolic murmur was interpreted as a murmur occurring in a large heart, with dilatation of the left ventricle, and as not indicative of mitral stenosis. The patient continued to improve; the edema disappeared. The precordial pain complained of on admission became more severe each night, however, and radiated to the left side of the neck and the shoulder. The patient was found dead in bed during the night of December 20.

The necropsy disclosed a large heart (790 gm., or 28 ounces), with greatly thickened left ventricular wall with no mitral or tricuspid narrowing. The aortic valves were intact; there was slight sclerosis of the coronary arteries; extensive sclerosis of the thoracic and abdominal aorta; chronic diffuse nephritis; an old fibrous pericarditis without adhesions, and an old healed infarct near the apex of the ventricle.

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[5] Phear: Lancet 2:716, 1895.
[6] Cabot: Physical Diagnosis, Ed. 5, 1912, p. 217.
[7] Reid, W. D. (Footnote 1, first reference).

Hookworm Disease.—People who live in the country, away from sewerage and work in the soil, suffer from uncinariasis more frequently than city residents. Those who go barefoot, or in other ways allow the skin to come in contact with polluted soil show a high percentage of infection. In Porto Rico, King and Ashford reported that probably 90 per cent. of the rural population was infected. Stiles estimates that more than one third of the rural population of the South is infected. Examination of the students of some of our state colleges, representing the best families in the state, and many of the student residents of towns, showed an infection of 33⅓ per cent. Drs. Stiles, Lindeman and Helms inspected 1,306 schoolchildren in Florida and estimated that 55.5 per cent. were infected. Dr. Perry of the Alabama Health Department examined 1,000 families in Sale County, and found one third infected.—J. A. Ferrell, *Hookworm Disease*.

SEQUELS OF ACUTE EPIDEMIC ENCEPHALITIS

A STUDY OF NINETY-TWO CASES FROM ONE TO THREE YEARS AFTER RECOVERY *

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As a result of the reexamination of eighty-nine patients who had recovered from an acute attack of epidemic encephalitis from six to twenty-four months before,[1] this tentative prognosis was offered:

1. Probably less than 20 per cent. of the patients who become ill with acute epidemic encephalitis die during the acute stage of their illness, as only the most severe cases as a rule reach the hospital.
2. Of those who survive the acute stage, about 10 per cent. may develop a progressive disease of the central nervous system.
3. The remainder will make a good functional recovery in from six to twenty-four months after the acute infection, with the probability of progressive approach to the normal after that period.

Unfortunately, this rather hopeful outlook on the outcome of the disease has not been substantiated by further observation of these patients. Reexamination of many of these patients, as well as others who have come under our care within the last year, emphasizes the importance of allowing time to play its part in the evolution of disease processes before ultimate conclusions can be formulated. This additional report is based on the findings noted in the reexamination of ninety-two patients who had survived the acute stage of epidemic encephalitis from one to three years prior to this examination.

Most of these cases were taken from the neurologic service of the Mount Sinai Hospital. A few were studied on the neurologic service of the Montefiore Hospital for Chronic Diseases. Among the ninety-two patients there were twenty-five who were observed three years after their acute illness, forty-seven patients two years, and twenty patients one year. Of the seventy-two patients in the first and second groups, forty-eight patients, in addition to seventeen of the twenty in the third group, have been under our continuous observation since their recovery from the acute illness.

Among the ninety-two cases, there were ten patients who had recovered completely at the time they were reexamined in December, 1921. These patients had no definite complaints, nor did they show any evidence of damage to the central or peripheral nervous system. In three of these patients three years, in six two years, and in one patient, one year had elapsed since their acute illness.

There were fourteen others who had recovered sufficiently to permit them to return to their work. Six of these patients were in the three year group, six others were in the two year group, and two were in the one year group. Among these fourteen patients there were four who showed only facial asymmetry. Six showed facial asymmetry in addition to other residual signs pointing to their cranial nerves. The remaining four patients showed disturbed cranial nerve innervation and a spontaneous tremor of the tongue, facial muscles or the extremities. All but one of these patients still complained of psychic disturbances, such as insomnia, irritability, depression or headache. Two of them were afraid to stay in the house alone.

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* From the Neurological Service of the Mount Sinai Hospital.
*Read before the Association for Research in Nervous and Mental Diseases, Dec. 28, 1921.
[1] Grossman, Morris: Late Results in Epidemic Encephalitis, Arch. Neurol. & Psychiat. 5:580 (May) 1921.

In two patients the physical findings have remained stationary since their examination one year ago. Four others, although still far from being well, have shown some improvement since their last examination. One of these patients still shows bilateral pyramidal tract involvement, and difficulty in swallowing fluids. This patient had complete paralysis of the tongue throughout her entire stay in the hospital, a period of more than two months. Two patients in this group still have unequal pupils, with sluggish reactions to light, and in addition they have a spontaneous tremor in the right hand. The fourth patient shows partial ptosis of one lid, speaks in a monotonous voice, and has a spontaneous tremor of the paralysis agitans type in both hands.

The remaining sixty-two patients all showed at the time of their examination a serious and more or less progressive involvement of the central nervous system. Forty-two of the sixty-two presented a clinical picture which closely resembled that of paralysis agitans. On account of the marked similarity in the clinical pictures of these forty-two patients, they can be most conveniently studied as a group. The remaining twenty patients will therefore be discussed separately as a second group of progressive cases.

FORTY-TWO PATIENTS OF THE PARALYSIS AGITANS TYPE

In this group of forty-two patients, there were twenty-three males and nineteen females. Three were below 10 years of age; nine between the ages of 11 and 20; fifteen between 21 and 30 years; eight between 31 and 40, and seven between the ages of 41 and 50 years. The youngest patient was 7 and the oldest was 50 years of age. Twenty-seven were below 30 years of age.

TIME OF ONSET FOLLOWING THE ACUTE ILLNESS

An attempt was made to establish the length of time that had elapsed between the acute illness and the onset of the paralysis agitans syndrome. It was impossible to establish definitely any precise interval in a sufficient number of cases to warrant drawing any conclusions on this point. Most of the patients stated that the symptoms had come on so insiduously, and that the progression was so gradual, that they could not be sure of a definite time of onset. In a few patients, however, a definite period of freedom from symptoms was noted. This varied from four months up to one year. The earliest symptoms noticed by many of the patients were easy fatigability, and increasing weakness in the extremities. Others first noticed stiffness in the extremities, while a few others did not notice anything until a tremor appeared. A striking fact was that in some of our patients, in whom during the acute stage of their illness a most intense picture of the paralysis agitans syndrome was noted, there was no evidence pointing to involvement of the basal ganglions when reexamined from two to three years later.

RESIDUAL SYMPTOMS

Cranial Nerves.—Among the cranial nerves, the facial was found to be the one most frequently involved. Twelve patients showed bilateral facial weakness, and fifteen others unilateral involvement. This weakness was always of the supranuclear type. Of nine patients showing weakness of their external rectus muscles, both recti were affected in three, and one rectus in six. Weakness of the internal rectus muscle was noted in four patients. Partial ptosis was present in five cases. One patient had an almost complete bilateral external ophthalmoplegia. Two showed nystagmoid movements of the eyeball in the horizontal planes. Two other patients had a tic-like twitching in the muscles supplied by one or two branches of the facial nerves. One patient had atrophy and fibrillary tremor of the tongue; another showed deviation of the uvula to the right, and still another had diminution of the movement of the soft palate on the right side.

Pupils.—These were unequal in seventeen patients. In four of these, the reaction to light was sluggish in both eyes. In three others one pupil failed to react, while the other pupil reacted sluggishly to light. In two patients there was a bilateral Argyll Robertson pupil. Two showed marked irregularity in the outline of their pupils. One patient had pupils that reacted to light but did not respond on convergence.

Nervous Disturbances.—All of the patients showed the typical immobile expressionless facies seen in paralysis agitans. In these patients, however, the response on laughing seemed to overcome this facial immobility more easily and more completely than it does in true paralysis agitans. Thirty-six patients showed some disturbance in the attitude of either the head, the trunk or the extremities. These parts were usually held rigid and pushed forward. The upper extremities were usually partly flexed at the elbow and wrists. The fingers were held closely together, with the thumb slightly adducted, giving the appearance of the accoucheur's hand. Many of the patients with this attitude of the hands showed a slight atrophy in the thenar group and of the interosseous muscles. In thirty-two patients the gait was like that of paralysis agitans. In six others, it resembled the hemiplegic gait. Propulsion and retropulsion were demonstrable in a number of these patients. The speech in thirty-two patients was slow, deliberate and monotonous in character. A spontaneous tremor of the paralysis agitans type was present in thirty-seven patients. It was restricted to the head, the tongue, the facial muscles or the extremities in most of the cases. There was some variation in the rhythm, rate and amplitude of movement in some of these tremors, but not more than would be found in a similar group of cases of true paralysis agitans. Two patients had, in addition, an ataxic tremor of the intentional type, in both arms. Thirty-eight patients showed disturbance in the associated movements of the arms when they walked. In twenty-six of them both arms were affected, and in twelve only one arm was involved. Muscle tonus was increased in thirty cases. In ten of these there was definite increase without the cog-wheel phenomenon, and in twenty the cog-wheel phenomenon was elicited.

Superficial, Deep and Abnormal Reflexes.—The superficial reflexes were disturbed in thirty-three cases. In twenty of these patients they were greatly increased in their activity, in eleven others moderately increased, and in two patients they were more active on one side than on the other. The deep reflexes were disturbed in thirty-five of the cases. In eleven patients they were extremely active on both sides, while in nine others they were moderately increased. In thirteen patients the deep reflexes were more active on one side than on the other. In two patients the ankle jerk could not be elicited on one side. A definite Babinski response was obtained in seven cases. It was present on both sides in one patient, and on one side only in the other six. The abdominal reflexes in these seven patients were all hyperactive.

Disturbance in Autonomic Functions.—Many of the patients showed some disturbance in their autonomic functions. Their hands and feet were blue and felt cold. Drooling of saliva was present in eight patients. Many of them had flushed, sweaty faces that appeared greasy. One patient had an intense vasomotor reaction on the face, neck and chest whenever she became the least bit excited. Excessive local sweating was present in many of the patients. One patient had increasing difficulty in starting the urinary stream. Another patient had intense sexual desire, but found his power very much diminished. Several patients had wide palpebral fissures. Exophthalmos was noted in a few cases.

Psychic Disturbances.—Many forms of psychic disturbances were noted among these patients. Psychoneurosis, fear and compulsion neurosis, anxiety states, and hysterical exaggeration of symptoms were frequently found. Fifteen of the patients still complained of insomnia, and many others had difficulty in falling asleep. Most of these patients still complained of drowsiness during the day. Seven patients were despondent and complained of marked depression, and stated that they had lost interest in current events. Failing memory, especially for recent events, was a common complaint. When they read they found it difficult to concentrate, and they soon forgot what they had been reading about. Others were irritable, and worried a great deal about their illness. Many complained of morbid fears. Most of the patients seemed to dread the night. Functional exaggeration of symptoms was occasionally evident. A number showed marked fear neuroses. These fears were due mainly to the fact that their condition seemed to be getting progressively worse, or did not show any tendency to improve. Two patients were afraid to stay in the house alone. One of these stated that she was afraid of burglars, while the other did not know definitely what she was afraid of when alone. Another patient was afraid to ride in an automobile, train, or street car, because she feared it would get beyond control and go too fast. The thought of this possibility would make her sick when she entered a car. Another patient could not control his thoughts, which were always of some calamity overtaking him. One patient showed a typical hypomanic state, extremely active, and always in some difficulty with the other children in the ward. Another patient, a man of 22, could not concentrate on anything he did. He could not overcome the impulse to steal when it overtook him. He was apprehended and convicted for stealing letters from a letter box, but was released on parole. He realized the gravity of his offense, and the moral wrong, but stated that he took things on the impulse of the moment because he was unable to control his actions at that time.

Progression.—Most of the patients felt that their symptoms were progressively growing worse. Whether this apparent progression in their symptoms was due to an increased involvement of the central nervous system by the pathologic process, or whether it was due to a psychic demoralization of the patient, could not be definitely determined at this time. It is most probable that both factors are in part responsible. Any form of treatment, medicinal, mechanical or psychic, seems to produce temporary improvement in some of their symptoms. The physical signs, however, seem to remain stationary, or slowly tend to become more intense.

Other Progressive Cases.—The remaining twenty patients all showed some progression in their symptoms or physical signs when compared with their status of last year. In eight of these patients the pupils were unequal. The pupils reacted sluggishly on both sides in five patients, and in one pupil in one other patient. One patient showed sluggish and incomplete reactions to both light and convergence. Fifteen patients showed slight weakness in facial innervation. Weakness of the external rectus muscle was present in three cases. Internal rectus muscle weakness was also present in three others. One patient had weakness of the inferior rectus muscle. Another showed almost complete bilateral external ophthalmoplegia. Unilateral ptosis was present in three patients, and bilateral ptosis was present in one other. One patient showed atrophy and fibrillary tremor in the facial muscles on one side, and another patient showed deviation of the uvula to the right.

Associated movements of the upper extremity were diminished or lost in four cases. Two showed increased muscle tonus. Eleven patients had tremor of the facial muscles or the extremities. The abdominal reflexes were hyperactive in seven patients, and absent in two others. The deep reflexes were unequal in five patients, and diminished in one other. A bilateral Babinski reflex was elicited in one case, and in one other patient it was present only on one side. Autonomic and psychic functions were disturbed in many of these patients. Ten complained of insomnia. One showed an extreme hypomanic state. Another patient had visual hallucinations during each night. Still another had marked depression with a feeling of inadequacy which led to persistent ideas of suicide. Nearly all of them complained of nervousness and irritability. One child had become very quarrelsome and difficult to control. Another patient was afraid to stay in the house alone. Three patients complained of difficulty in breathing, without any pathologic condition in the lungs. One other had bilateral exophthalmos.

Three patients had choreiform and choreo-athetoid movements. In two of them the movements were not unlike those of Huntington's chorea in its early stage. One of these three patients had in addition a tossing, tic-like movement of the head. Another showed a torsion spasm of the pelvis and the right leg. His gait closely resembled that of dystonia musculorum deformans.

Another patient in this group presented a clinical picture that simulated myasthenia gravis. I had an opportunity to study three patients with this syndrome. They have formed the basis for a clinical report.[2] There were two other patients in this group who presented diffuse lesions that produced a clinical picture not unlike that of multiple sclerosis.

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[2] Grossman, Morris: J. Nerv. & Ment. Dis. **55**: 33 (Jan.) 1922.

The large number of patients in this group showing spontaneous tremors suggests the probability that with further progress in their symptoms they will eventually require reclassification and have to be placed to the group of cases showing the paralysis agitans syndrome following encephalitis.

SUMMARY

It is obvious from the findings disclosed in the examination of these ninety-two patients that the danger from epidemic encephalitis does not pass when the patient recovers from the acute illness. Only ten of the ninety-two patients examined in this series were free from symptoms and showed no residual signs when observed from one to three years after the acute illness. Fourteen others had recovered, within this time, sufficiently to allow them to return to their work. These patients, however, still showed residual signs of their previous illness, and complained of various forms of psychic disturbances, such as insomnia, irritability, poor memory and fear neuroses. Two patients showed no change in their physical condition since their last examination one year before. Four patients showed slight improvement in their symptoms and physical signs, but were still far from being well. The remaining sixty-two patients showed a serious, more or less progressive involvement of the central nervous system which was evidenced by disturbances in the motor, psychic or autonomic functions.

Of these sixty-two patients, forty-two showed a clinical syndrome which closely resembled that seen in paralysis agitans. Almost every cardinal symptom and sign of this disease could be demonstrated in most of them. There seemed to be a few slight differences, however. On account of the rapid development of the syndrome, their emotional responses were more active than those of the average patient with paralysis agitans. They smiled more readily, and, when doing so, they seemed to overcome their facial immobility more completely and more easily. Their mental reactions were likewise more prompt. These patients were, as a rule, keenly aware of the serious nature of their illness. They worried a great deal and showed extreme anxiety as to the ultimate outcome of their disease. The relentless advance of their symptoms made them restless and irritable, and was undoubtedly the cause of the insomnia in many of them. This mental state formed a striking contrast to the resignation usually found in many of the patients suffering from true paralysis agitans in the later stages. Almost 70 per cent. of these patients were below 30 years of age. A strikingly large number of them also showed pupillary changes and residual signs pointing to cranial nerve involvement. This is an unusual finding in true paralysis agitans.

The patients who showed evidence of disease of the basal ganglions, in addition to involvement of the pyramidal tracts, form an interesting group. Barring an occasional case of disseminated sclerosis or of diffuse cerebral arterial sclerosis, encephalitis seems to be the one disease that shows most frequently lesions involving the basal ganglions and the pyramidal tracts. It is also well to emphasize the point that myasthenia gravis, disseminated sclerosis, Huntington's chorea and dystonia musculorum deformans may be closely simulated by epidemic encephalitis. In the present state of our knowledge, we are not warranted in establishing any definite etiologic relationship between epidemic encephalitis and paralysis agitans, multiple sclerosis, and the various other clinical types that follow encephalitis.

Another outstanding feature that was noted in the reexamination of these patients was the strikingly large number who showed increase in the activity of the abdominal reflexes. This was found to be the case in seven of the eight patients who showed definite evidence of involvements of the pyramidal tracts.

CONCLUSIONS

1. The prognosis as to the ultimate recovery from epidemic encephalitis should be a guarded one, even though the patient has recovered from the acute attack.
2. Only ten patients had fully recovered, fourteen were functionally well, two remained stationary, and four showed some improvement, among the ninety-two patients in this series examined from one to three years after recovering from the acute illness.
3. Sixty-two of the ninety-two patients showed evidence of a more or less progressive involvement of the central nervous system.
4. Of the sixty-two progressive cases, forty-two patients showed a clinical syndrome that closely resembled that of paralysis agitans.
5. Many of the well known clinical types may occur as sequels of epidemic encephalitis.

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A REVIEW OF THE CLINICAL SIGNIFICANCE OF THE WASSERMANN REACTION

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The Wassermann reaction has been before the profession for sixteen years, during which period it has enjoyed the greatest confidence. Today, however, in the light of its performance, it is passing in critical review. What has been the fate of the Wassermann reaction has been true of many other innovations and discoveries of a revolutionary character, namely, at first blind faith; then a period of grave doubt, and finally a normal and sensible appreciation of the actual value of the procedure under review.

There exist today three schools of thought relative to the clinical value of the Wassermann reaction. One group places absolute reliability in it, accepting the weakest reactions of the test, even when these are obtained by the use of the cholesterinized antigens as indicating the existence of syphilis. The second group considers the Wassermann test as a gross test. They look on this laboratory procedure as a symptom placed alongside the clinical findings, and are not dogmatically and blindly influenced by the results of the test. A third class looks on the test as liable to so many errors of omission and commission that no great dependence is placed by them on the results obtained. What, therefore, are some of the weaknesses of the Wassermann reaction used as a diagnostic measure?

SPECIFICITY OF THE WASSERMANN REACTION

(*a*) It is admitted that the Wassermann reaction is not a specific test. It has been shown repeatedly that the pure culture of *Spirochaeta pallida* which theoretically should be the ideal antigen in the scheme of the Wassermann test, in the practical application of the test, is absolutely useless. The commonly accepted antigens today are substances extracted from either the heart, liver or other organs, either of human or of certain of the animal species. These extracts seem to do just as well when derived from the organs of normal individuals as when obtained from the organs of individuals with syphilis. It appears by almost common consent to have been accepted that, to make the antigen employed in the Wassermann reaction more sensitive, more delicate, it is advisable to add a certain amount of cholesterin to it.

When Wassermann announced this reaction, he utilized an aqueous solution of syphilitic liver as his antigen. He supposed that this antigen contained a solution of *Spirochaeta pallida*. Since that time, it has been definitely proved that the antigen Wassermann employed was not a solution of *Spirochaeta pallida* obtained from the liver of a syphilitic fetus, but an aqueous extract of liver tissue. Today we have only the shadow of the original Wassermann technic. The methods now employed have undergone so many modifications and refinements that only one element of the original Wassermann technic is retained, and that is the name: "the Wassermann reaction."

(*b*) It is admitted that up to date no one can definitely state what substance there is in the serum of a patient which causes a positive reaction. We do not know whether this substance, which we will call reagen, is due to the interaction of *Spirochaeta pallida* per se with the serum of the patient, or whether this reagen is due to an interaction between *Spirochaeta pallida* and some or all of the tissues of the individual affected with syphilis. We are still in ignorance as to whether or not the toxins produced by *Spirochaeta pallida* may be a factor in the production of the reagen. We still stand in ignorance as to the nature of the reagen, whether it is a lipoidal substance or a cholesterin-like body, or whether it belongs to the protein substances.

Henes [1] has presented evidence which seems to point to the possibility that increased cholesterin in the serum of a patient may be productive of a positive Wassermann reaction. On the other hand, Craig and Williams [2] seem to disprove by animal experimentation that increased cholesterin causes a positive reaction. They also bring the work of Denis to their support as an argument against the value of cholesterin increase in the scheme of a positive Wassermann reaction, Denis having found no increase of cholesterin in fourteen syphilitic infections. Craig and Williams fed enormous amounts of cholesterin to rabbits, and failed to produce a positive Wassermann reaction in the serum, although a determination of the cholesterin content of the rabbit serum showed a marked increase above the normal limits.

With these divergent facts before us, we can only say that the influence or value of increased cholesterin content of the serum of a patient, so far as it influences the production of a positive Wassermann test, must await further investigation. Craig and Williams seem inclined to the view that the substance of the blood serum which appears to be responsible for the positive Wassermann test is related to the globulins. These substances are known to be increased in the blood and spinal fluid of syphilitics, especially the euglobulin.

INFLUENCE OF DRUGS ON THE WASSERMANN REACTION

The world-wide use of the arsphenamin preparations in the treatment of syphilis, and the facts that in a certain perecentage of syphilitic patients the Wassermann reaction does not seem to be influenced by the intravenous injection of arsphenamin, and that many are administering arsphenamin for conditions other than syphilis either because the diagnosis is not made or because they believe that arsphenamin should be tried, because all other methods of treatment have failed, have made it important to study the effect of arsphenamin on the Wassermann reaction.

Ravaut [3] tested the effect of neo-arsphenamin on nonsyphilitic patients suffering from varied dermatologic conditions, and in 35 per cent. he was able to produce a positive Wassermann reaction. In all, he studied fourteen patients, and of these in five he was able to produce positive complement fixation following neo-arsphenamin injections. The positive Wassermann cases were: (1) angiolupoid with papulonecrotic tuberculid; (2) lupus erythematosus; (3) generalized lichen planus; (4) psoriasis, and (5) lichen planus. The number of injections in the positive group varied from three to nine injections, and the dose of neo-arsphenamin varied from 0.3 to 0.9 gm.

Without any knowledge of the work of Ravaut, I tested the effect of arsphenamin and neo-arsphenamin on the Wassermann reaction of nonsyphilitic patients suffering from varied dermatologic affections. In a contribution [4] published in 1920, it was shown that, in my series of twenty-four patients, sixteen, or 66 per cent., gave at least one positive reaction, and fourteen, or 58 per cent., gave two or more positive reactions. The greatest number of positive reactions in any one case was nine. If we consider 50 per cent. inhibition of hemolysis as indicative of syphilis, we can say that nine patients, or 38 per cent., gave + 2 or a greater degree of positive reaction.

According to the plan adopted for this work, the first Wassermann test of these patients had to be completely negative, they had to present a negative syphilitic history, and their skin affections were definitely nonsyphilitic. The ages of these patients varied from 15 to 63 years. Included in this list were patients with eczema, psoriasis, acne vulgaris, acne rosacea, purpura, sycosis vulgaris and some of the more rare skin affections. No patient received more than seven injections at weekly intervals. The usual dose of arsphenamin given in my series was 0.5 gm. If we can discard the + 1 (weakly positive) cases from our list, it can be seen that the percentage of positive Wassermann findings of my series agrees with the percentage of positive Wassermann results obtained by Ravaut.

In a study as yet unpublished, I also noted the effect of mercurials given intravenously on the Wassermann reaction. In a series of twelve patients to whom weekly intravenous injections of mercuric benzoate were given in the dose of ⅖ grain (0.026 gm.) in 10 c.c. (2 ¾ fluidrams) of physiologic sodium chlorid solution, not a single instance was found in which the mercurials injected changed the Wassermann reaction from negative to positive. The patients of this series suffered either from psoriasis, lichen planus or sycosis vulgaris. All of these patients, before receiving the injections, had a negative Wassermann test. These mercurial injections varied in number from eight to twenty.

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[1] Henes, Edwin, Jr.: Cholesterinemia and the Wassermann Reaction, Am. J. Syph. **4**: 685 (Oct.) 1920.

[2] Craig, C. F., and Williams, W. C.: Am. J. Syph. **5**: 392 (July) 1921.

[3] Ravaut, P.: Ann. de dermat. et de syph., 1914, p. 219.

[4] Strickler, Albert; Munson, H. G., and Sidlick, D. M.: A Positive Wassermann Test in Nonsyphilitic Patients After Intravenous Therapy, J. A. M. A. **75**: 1488 (Nov. 27) 1920.

Also in an unpublished study, I tested the effect of intravenous injections of sodium cacodylate on the Wassermann test of nonsyphilitic persons suffering from various skin affections, the amount of arsenic in the sodium cacodylate solution being equal to the amount of arsenic in arsphenamin. In all, eleven patients were subjected to this method of treatment. In this series, the first Wassermann test previous to receiving this remedy was completely negative. The number of injections varied from five to fourteen. A Wassermann test was made before each treatment. The result showed that, in all instances but two, the Wassermann test was not affected by these injections. The two instances in which the Wassermann reaction became positive occurred in one patient, the first positive Wassermann + 2 ± + 1 occurring after three injections had been given, and the second positive Wassermann + 1 + 1 + 1 occurring after the ninth injection.

INCIDENCE OF A POSITIVE REACTION IN DISEASES OR CONDITIONS OTHER THAN SYPHILIS

The most ardent advocates of the specificity of the Wassermann test admit the occurrence of a positive reaction in leprosy and yaws. There are also other conditions of disease and also temporary alterations of normal state not in itself a disease in which it is becoming more and more certain that a positive Wassermann reaction can be obtained and that this positive reaction does not mean syphilis.

Williams[5] studied the Wassermann reactions of patients with diabetes. Of a series of 337, sixteen patients gave a + 3 or + 4 result at one time or another during the period of their observation. These patients also gave negative and doubtful Wassermann tests. On these sixteen patients, forty-five tests were performed, and of this number twenty-two positive reactions were obtained. It was observed by Williams that "these discordant Wassermann results were obtained chiefly in young diabetics who were suffering gravely from malnutrition occasioned by the disease and in whom there was evident lipoidal disturbance." Williams observed that as the nutrition of these diabetic patients was improved by proper dietetic measures, there was a coincidental improvement in the Wassermann test, and that in each instance in which a positive Wassermann reaction was observed, the diabetes was very severe. Williams offers a number of hypotheses to explain these alternative positive and negative Wassermann results in his series of diabetic patients:

1. It is possible that the results obtained in these Wassermann tests were due to technical errors, and if that be so the results of all laboratories could be questioned as to their accuracy.
2. It is possible that these patients were syphilitic, and, if that be so, then in the absence of antisyphilitic treatment the results of the Wassermann tests should be constant and not vary from a + 4 to a negative or a doubtful positive, for it is common experience that a positive Wassermann reaction due to syphilis remains positive unless influenced by treatment.
3. The most plausible line of reasoning which Williams suggests to explain these positive Wassermann findings rests on the fact that he observed that the positive and partial reactions occurred when these patients for a long time had been on diets far below the minimal basal metabolism, and were suffering severely from imperfect nutrition.

It is well known that, in states of low nutrition and starvation, the body frequently mobilizes large amounts of fats and lipoids. According to Williams, it is probable that the body lipoids enter into the mechanism of the Wassermann reaction and that patients suffering from the malnutrition of severe diabetes frequently exhibit marked increase in blood lipoids, cholesterin, particularly, being higher than normal. Williams also reports the history of a patient who during life gave a + 3 Wassermann reaction. This patient came to necropsy, and in spite of a most searching histologic study of blood vessels, testes and other organs, no evidence of syphilis could be discovered.

Kilduffe,[6] in a study of the Wassermann reaction of supposedly nonsyphilitic patients, encountered three subjects suffering with diabetes, and two of these patients gave positive Wassermann reactions. In one case, several Wassermann tests were made with identical results, this patient having a high sugar content of urine and blood, with a marked acetonuria. No history of syphilis could be obtained from these patients. Williams, Henes, Doland, Kilduffe and others had at times found a positive Wassermann reaction in persons suffering from nephritis in whom no history of syphilis could be obtained. The incidence of a positive Wassermann reaction in this condition is not so high as that found in diabetes.

Numerous observers have noted the incidence of a positive Wassermann reaction during the febrile period of pneumonia and of typhus fever. Kilduffe noted that the serums of three patients suffering from pneumonia gave a positive complement fixation for syphilis, of his series of seven patients. This statement is merely the confirmation of many other similar observations. Bauer[7] studied the Wassermann reaction of fifty serums from patients suffering with typhus in whom there was no clinical evidence of syphilitic infection. During the fever, forty-six serums (92 per cent.) gave a positive Wassermann reaction. Bauer reaches the conclusions, as the result of his study, that the Wassermann test applied to the inactivated serums of typhus patients is nearly always positive, if the blood sample is taken before the crisis.

Also in malaria, there have been reported positive Wassermann findings when the sample of the blood is taken during the period of the chill. Bitroff[8] calls attention to the appearance of positive Wassermann findings in nonsyphilitics after injury or destruction of organs particularly rich in lipoids, as in cancer of the liver and tumors of the brain and spinal cord. Verdozzi and Urbani[9] have noted the incidence of positive Wassermann findings in five of twenty-six cases of chronic diseases of the liver in which there was nothing to suggest syphilis.

The incidence of a positive Wassermann reaction in pregnant women, so far as it is or it is not diagnostic of syphilitic infection, presents a problem which not only vitally concerns the child-bearing mother but also is of vital importance to her consort and materially concerns the offspring. A clear statement as to the significance of a positive Wassermann test in pregnant women is therefore most important and vital. Falls and Moore, Cornell and Stillians were among the earliest investigators to suggest that with the cholesterinized antigen there was a possibility of the occurrence of a positive Wassermann reaction in a nonsyphilitic pregnant woman, and that this positive reaction would disappear after pregnancy had terminated and from that time on remain negative.

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[5] Williams, J. R.: A Study of the Wassermann Reaction in a Large Group of Supposedly Nonsyphilitic Individuals, Including a Large Group of Diabetics and Nephritics, Am. J. Syph. **5**: 284 (April) 1921.

[6] Kilduffe, R. A.: Incidence of Positive Wassermann Reactions in Four Hundred and Eighty-Four Supposedly Nonsyphilitic Patients, Arch. Dermat. & Syph. **5**: 207 (Feb.) 1922.

[7] Bauer: Deutsch. med. Wchnschr., Oct. 13, 1921.

[8] Bitroff: München. med. Wchnschr., Nov. 14, 1916.

[9] Verdozzi and Urbani: The Wassermann Reaction Positive in Chronic Diseases of the Liver, Policlinico **22**, No. 12.

Fordyce and Rosen[10] report that they found that from 25 to 35 per cent. of the patients referred to them by maternity hospitals, because of a strongly positive reaction with cholesterinized antigen alone, gave a negative Wassermann reaction with all methods when they reported several weeks after delivery, and remained negative on repeated examination. Stühmer and Dreyer[11] applied Wassermann tests twice a week in their maternity cases. They had a series of 1,000 tests of parturients' serums, with 2,500 control tests of known syphilitic and nonsyphilitic serums. Their experience shows that the serum of a healthy woman may respond positively to the Wassermann test during pregnancy and childbirth. Unreliable findings were obtained in fully 10 per cent.

Certainly these various observations call for a continued study of this most important problem, and for care and caution in the interpretation of a positive Wassermann reaction in the pregnant mother. The crying need of the Wassermann technic has been the urgent necessity of standardization. This is the program of the Wassermann investigators and workers. Many experiments and much research have been conducted so as to control every factor that goes to make up the Wassermann technic. There is one factor, however, about which little or nothing has been said or done, and that one is the patient's serum. From the observations recorded in the preceding pages, it seems at least reasonably certain that, at times, conditions other than syphilis can modify the blood serum in the same way as syphilis, and thus give a positive Wassermann reaction.

Included in this category are febrile diseases due to specific organisms, certain metabolic diseases, and also pregnancy which, while not a disease, is nevertheless, for the time being, an altered metabolic state of the human economy. In this connection we may also quote the observation of Fischer[12] that a Wassermann reaction negative with 0.1 c.c. of serum frequently becomes positive with larger amounts of serum.

COMMENT

No one can deny the enormous value of the Wassermann reaction as a diagnostic procedure; but the absolute reliability placed on it has undoubtedly resulted in a considerable amount of harm. The great desire of the medical profession for certain, definite, quick diagnostic procedures has caused many to rely on the Wassermann test as a means of diagnosing syphilis, almost if not altogether to the exclusion of clinical evidence. As Hazen aptly puts it, "Entirely too much stress has been placed upon the Wassermann by the average practitioner; the old kodak advertisement has been replaced in medicine by 'the Wasserman will make the diagnosis; 606 will do the rest.' "

It is most important that the medical profession should be acquainted with some of the limitations of the Wassermann test. It should be impressed on all that the Wassermann test should be considered as a symptom and should be impartially weighed along with the other clinical evidence in making the diagnosis. Since the Wassermann is not a specific test; since we do not know what may be the substance in the serum which causes the production of a positive reaction; since it is becoming more and more suggestive that a certain drug, that some of the acute infectious processes, and also that certain metabolic disturbances can at times produce a change in the serum which will cause a positive Wassermann reaction, I feel that it is time that the profession should not attempt to diagnose syphilis on the strength of a single, weak positive reaction.

In my opinion the following should constitute the status of the clinical value of the Wassermann reaction as a diagnostic measure. (1) A negative Wassermann test in the presence of definite syphilitic lesions is a possibility in certain stages of the disease. This may occur at times in tertiary syphilis, inherited syphilis and also in certain types of neurosyphilis. (2) A positive Wassermann test in the presence of nonsyphilitic disease should not always mean syphilis. It should, however, arouse our suspicion to study our patient from every possible angle in our endeavor to explain this positive reaction. It should be borne in mind that a syphilitic patient is subject to any and all ailments that a nonsyphilitic is heir to. (3) While a strongly positive Wassermann reaction in a subject who is not suffering from any illness should cause us to investigate, nevertheless, too great stress is not to be put on it, unless this finding is confirmed by a number of reliable laboratories.

We realize the existence of asymptomatic syphilis; we feel that the too often laboratory-made diagnosis of syphilis, made on the strength of a single, weak, cholesterinized positive Wassermann test, is not to be relied on and should not brand a patient with the stigma of syphilis. While we feel the enormous value of the Wassermann reaction we should also realize that it has limitations, some of which are still hidden secrets, and we should not condemn our patients without a just trial or hearing, solely on the strength of a weak positive Wassermann reaction.

327 South Sixteenth Street.

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[10] Fordyce, J. A., and Rosen, Isadore: The Treatment of Antenatal and Congenital Syphilis, Arch. Dermat. & Syph. 5:1 (Jan.) 1922.

[11] Stühmer and Dreyer: Ztschr. f. Geburtsh. und Gynäk., November, 1921.

[12] Fischer: The Wassermann Test Applied with Larger Amounts of Serum, Deutsch. med. Wchnschr., Feb. 3, 1916.

Removal of Glass from the Rectum.—Dr. Arthur A. Landsman, New York, writes: Occasionally persons introduce into the rectum objects made of glass, which become broken and present sharp and cutting edges. To remove these when they are well beyond the reach of one's finger presents considerable difficulty, not only because of the danger to the soft parts, but because of the inability to maintain a good grip on the smooth surface. To overcome these, the following procedure may be tried: The patient is put in the knee-chest position to secure inflation of the rectum, and a two-bladed speculum is inserted and held in place by an assistant. By means of alligator forceps we carry up small squares of adhesive plaster cut to size, which are applied to the sharp edges, and readily molded over the sides of the glass. The object may then be easily grasped with any long handled forceps (ordinary placental forceps will do) and delivered without any danger of slipping or wounding the walls of the rectum.

Clinical Notes, Suggestions, and New Instruments

INSPIRATORY DYSPNEA DUE TO PARALYSIS OF THE DILATORS OF THE NARES FOLLOWING ACUTE INFECTIOUS MENINGO-ENCEPHALITIS

C. F. Hoover, M.D., Cleveland

The case of bilateral paralysis of the anterior and posterior "dilator naris," with consequent dyspnea on exertion, here reported, occurred in a man, aged 30, who came to Lakeside Hospital in December, 1920, suffering from an acute and severe meningo-encephalitis. A bacteriologic diagnosis was not made. Although lumbar puncture was performed eleven times, no bacteria were found in the stained sediment, and all attempts failed to recover any growth of bacteria from the spinal fluid. No bacteria grew from the patient's blood that was obtained by venipuncture, although during the early part of the illness there was a blood leukocytosis of 14,000, which consisted of an increase in the polymorphonuclear cells and led to the expectation of finding bacteria in the spinal fluid.

During the first eleven days in the hospital, lumbar puncture was performed eight times, and from 20 to 45 c.c. of clear fluid under pressure was removed each time. The largest number of cells per cubic millimeter in any of the specimens was 220, and the proportion between mononuclear and polymorphonuclear cells varied from 30 : 1 to 10 : 1. There was always a great predominance of mononuclear cells.

Although there was a liberal subarachnoid use of antimeningitis serum, the course of the disease left the impression that, if any improvement could be traced to treatment, it was due to the relief of pressure by paracentesis rather than to the injection of a specific serum. In fact, the benefit derived from evacuation of spinal fluid was not at any time decided. The fever, headache, blood leukocytosis, lymphocytosis of the spinal fluid, rigidity of the neck, increase of subarachnoid fluid, and Kernig signs indicated an active participation of the meninges; and the general cerebral signs of coma and great weakness, from which the patient slowly recovered, betokened a severe encephalitis. There were no focal symptoms discovered during the acute period of the illness that revealed any involvement of any cranial nerves, and with the exception of lively tendon reflexes and general weakness there were no focal signs to implicate the motor paths in any upper or lower neurons. No sensory symptoms appeared at any time during the acute or convalescent period.

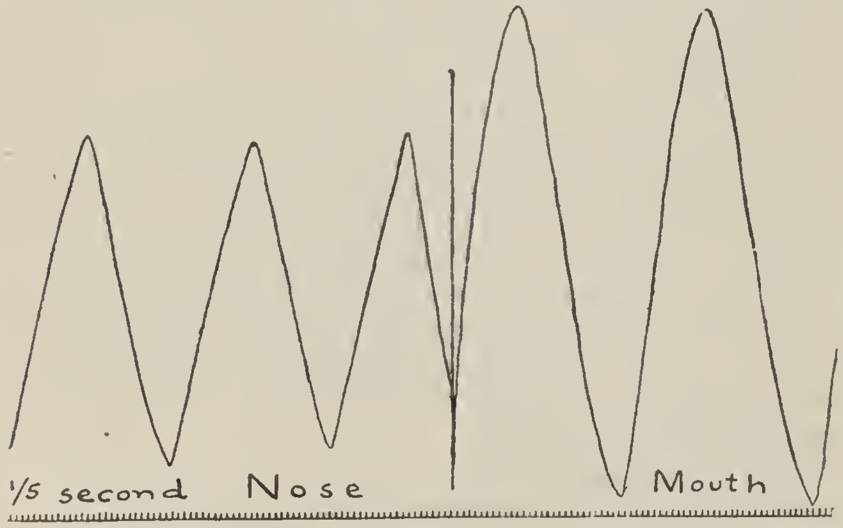

Fig. 1.—The first three are tracings of respirations made through the nose with the mouth closed. The two on the right are tracings of mouth respirations. The patient was instructed to take a moderately sharp and deep inspiration. He did not endeavor to give an exhibition of his vital capacity.

When the patient recovered sufficiently in six weeks after the onset of his disease so that he could rest in a wheel chair, it was noticed that his facial mimicry was defective. There was a want of expression and a stolidity in his facial mien that suggested the masklike face which is seen in Parkinson's disease and which so commonly persists in patients after recovery from epidemic (lethargic) encephalitis. At no time, however, had we been able to demonstrate any evidences for bulbar or pontile nuclear disease, nor was there any delay in the initiation of movements, or any loss of reciprocal inhibition to slow the voluntary movements of the arms and legs. The clinical diagnosis was infectious meningo-encephalitis of unknown bacterial origin.

In February, 1922, one year after leaving the hospital, the patient came to the outpatient department seeking relief from a difficulty in breathing that invariably developed on walking rapidly or with other physical exertion. Physical examination revealed a normal vital capacity of the lungs and no signs to indicate any modifications of the volume, density or extensibility of any part of the lungs. All cardiovascular signs were normal, and the roentgen ray revealed no abnormality in the mediastinum. After treatment of some minor symptoms of the nasal mucosa, the report from the nose and throat department was that the nasopharynx and larynx were quite normal.

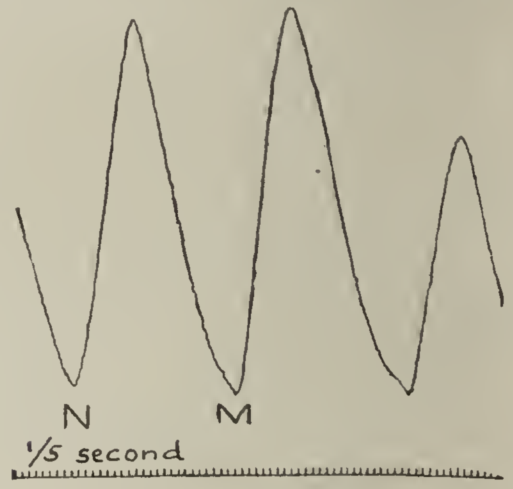

Fig. 2.—*N* traces a nasal respiration, and *M* traces a mouth respiration.

When the patient was presented to me for diagnosis, it was noted that the nares were slightly retracted during inspiration when the patient was seated at rest; and, when he was told to take a deep breath, the alae nasi were strongly retracted. The nostrils acted like clapper valves; with a vigorous inspiration they retracted so that there was great obstruction to the entrance of air, but forced expiration through the nostrils was unobstructed. Forced breathing through the mouth was unobstructed. On solicitation the patient could voluntarily exhibit good activity in all facial muscles excepting the dilators and compressor of the nostrils. This is not uncommon in perfectly normal persons who have a nasal conformation of the Celtic or short, retroussé type; but in the Roman type, with longer and larger alae, there must be muscular control of the nostrils if the alae are not to act as clapper valves and close with vigorous nasal inspiration. The patient said he never had had any such difficulty until he recovered sufficiently from his acute illness so that he could walk rapidly and work vigorously, and then he was greatly mystified by his shortness of breath, which caused him much discomfort and anxiety. His anxiety was relieved when he was shown that he could breathe through his nose with perfect freedom if the point of the nose was pushed upward and the alae thus held in a rigidly spread position.

To portray graphically this source of dyspnea, a gas mask used during the war was fitted over the face with one of the openings connected with the tube leading to a Benedict spirometer. The excursions of the reservoir were traced on a drum revolving at a speed of 5 mm. a second. With nose and mouth free, the patient was instructed to take short, deep breaths alternately through the nose and the mouth. Figure 1 is a tracing of such respirations. The time marker is in one-fifth second. The three inspirations on the left were through the nose with the mouth closed, and the two on the right were through the open mouth. Inspiration through the nose had a duration of eighteen-fifths seconds, and expiration fifteen-fifths seconds. Through the mouth, inspiration lasted sixteen-fifths seconds, and expiration twenty-five-fifths seconds. Moreover, the amount of air inspired through the nose was 2,518 c.c., whereas the amount inhaled through the mouth was 2,876 c.c.

Before the tracing shown in Figure 2 was made, short segments of rubber tubing were inserted in each nostril, so that the lumen was ample and the nostrils could not collapse during inspiration. The patient was then instructed to breathe in the same manner as before, but alternately through the nose and the mouth. The tracing of the respiratory cycle marked *N* was made while he was breathing through the nose, and the tracing marked *M* while he was breathing through the mouth. The volume and duration of the inspirations and expirations are the same in both nose and mouth breathing.

The whole difficulty was simple enough to explain when the inspiratory collapse of the nostrils was noted, but until then it was equally mystifying to physicians and patient. The very strange and unusual features about this patient are the facts that recovery from severe and acute meningo-encephalitis was complete with exception of the compressor and dilators of the nares, and paralysis of these small muscles of comparative insignificance was complete one year after convalescence. There may have been a bilateral paresis of the facial muscles during the acute illness, but it was not detected. There certainly was no paralysis of both facial nerves during the acute stage of the disease, and one year later all muscles supplied by the seventh pair of nerves functioned perfectly well with the exception of the dilators and compressor of the nares, but the paralysis of these muscles was complete. This is a rare clinical occurrence, and one that I have never before seen or encountered in medical literature.

REPORT OF A CASE OF NASAL HERPES DUE TO INGESTION OF PHENOLPHTHALEIN

Jacob Rosenbloom, M.D., Ph.D., Pittsburgh

It is now definitely known that in susceptible persons the use of phenolphthalein may produce peculiar eruptions of the skin. Abramowitz[1] was the first to call attention to this peculiar effect of phenolphthalein. Wise and Abramowitz[2] find that in susceptible persons the ingestion of phenolphthalein provokes a peculiar polychromatic eruption of the skin, with bullous, vesicular and eroded lesions of the mucosae and genitals. These lesions leave pigmented areas, persisting for months and even years. They found that the lesions "flare up" after the ingestion of the drug, usually affecting the same sites as in the preceding eruption, and they conclude that the eruption exhibits many points of similarity to those resulting from antipyrin and arsphenamin.

The case that I observed presents many interesting details: Mr. S., aged 36, complained of recurrent attacks of herpes of the nose. They occurred two or three times a month, and presented all the premonitory symptoms of this condition. They usually required from ten to fourteen days to heal, and left a deeply pigmented area after healing. A complete physical and laboratory study of the case revealed that he was in perfect physical condition except for constipation.

I thought that the condition might be due to the ingestion of some drug. The only drug he had taken for several years had been an occasional Alophen pill for constipation. The composition of this pill, as given by the makers, is: aloin, ¼ grain; pulv. strychnine, 1/80 grain; ext. belladonna leaves, 1/12 grain; pulv. ipecac, 1/15 grain; phenolphthalein, ½ grain. On two different occasions the use of one Alophen pill was followed the next day by an attack of nasal herpes. On two different occasions this pill was given but it was made up without any phenolphthalein. No herpes resulted. For more than nine months this patient has been free from any attack of nasal herpes and, of course, has not used this pill.

It is interesting that as small an amount as ½ grain (0.03 gm.) of phenolphthalein was able to produce this vesicular skin condition in a susceptible person.

5070 Jenkins Arcade.

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[1] Abramowitz, E. W.: Erythema Multiforme Associated with Cutaneous Pigmentation (Melanin). Clinical and Pathological Report of Five Cases, J. Cutan. Dis. **36**: 11, 1918.

[2] Wise, F., and Abramowitz, E. W.: Phenolphthalein Eruptions, Arch. Dermat. & Syph. **5**: 297, 1922.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. Puckner, Secretary.

AMMONIUM ICHTHYOLATE-MEADOWS.—An aqueous solution, the important constituents of which are ammonium salts of indefinite, complex, organic acids, partaking of the nature of oxygenated bodies and sulphonates held in colloidal dispersion. It is derived from an oily distillate of a fossiliferous bitumen found in Texas.

Actions and Uses.—It is claimed that ammonium ichthyolate-Meadows has the therapeutic properties of ichthyol and that in a gelatin medium it has a penetrating power at least twice as great as that of ichthyol.

Dosage.—See Ichthyol, New and Nonofficial Remedies, 1921, p. 344.

Manufactured by Meadows Oil and Chemical Corporation, Durant, N. Y. No U. S. patent or trademark.

Ammonium ichthyolate-Meadows is a reddish-brown, viscous fluid having a peculiar, mildly bitter taste and a faint odor. It is completely soluble in water; almost completely soluble in alcohol or in alcohol-ether mixture (1: 1) with the separation of ammonium sulphate; it is miscible with glycerine and fatty vehicles.

Dissolve about 0.5 Gm. of ammonium ichthyolate-Meadows in 100 Cc. of warm water; transfer to a clean, stoppered cylinder and allow to stand for a few hours. No free oil should appear on the surface of the solution, no precipitate should form, and the solution should be perfectly clear.

Dry about 1 Gm. of ammonium ichthyolate-Meadows, accurately weighed, in a watch glass to constant weight at 105 C. The loss in weight should not exceed 50 per cent. Reduce the dried drug to a fine powder and transfer about 0.5 Gm., accurately weighed, to a dry Pennock and Martin's nickel crucible. Add about 9 Gm. of sodium peroxide (sulphur free) and mix thoroughly. Dip the crucible with stand and cover about half-way in a beaker of cold distilled water. Ignite the mixture by thrusting a red-hot iron wire through the opening in the cover of the crucible. A few minutes after combustion has taken place, tip the crucible over and allow the fusion to dissolve. Add hydrochloric acid to excess, heat to boiling, determine the sulphate with barium chloride solution in the usual way and calculate the results to total sulphur. The total sulphur should amount to between 6.5 per cent. and 7.5 per cent. Weigh, accurately, about 1 Gm. of ammonium ichthyolate-Meadows, transfer to a one hundred cubic centimeter beaker, add 50 Cc. of alcohol-ether mixture (1: 1), stir thoroughly, filter, wash the precipitate and filter with more of the alcohol-ether solvent until the washings become clear. Dry the funnel with the filter at 100 C., cool and wash the filter with 200 Cc. of warm water, slightly acidulated with hydrochloric acid. Determine the sulphate in the filtrate and washings with barium chloride solution in the usual way and calculate the results to ammonium sulphate. The ammonium sulphate should not amount to more than 10 per cent. Place about 5 Gm. of ammonium ichthyolate-Meadows, accurately weighed, in a beaker; dissolve in 100 Cc. of water; transfer to a distillation flask; add an excess of potassium hydroxide solution; distil slowly; collect the distillate in 15 Cc. of normal sulphuric acid to which alizarin red indicator has been added and titrate the excess of sulphuric acid with tenth-normal potassium hydroxide. The total ammonia should amount to from 2.8 per cent. to 3.8 per cent. Place about 0.5 Gm. of ammonium ichthyolate-Meadows, accurately weighed, in a crucible and incinerate at a red heat to constant weight. The ash does not exceed 0.15 per cent.

Dissolve 5 Gm. of gelatin in 100 Cc. of water by the aid of heat. Fill three test tubes about half-way with the warm gelatin solution. Set test tubes in a cool place (from 10 to 15 C.) for five hours. Pour into each tube 5 Cc. of a 5 per cent. aqueous solution of ammonium ichthyolate-Meadows. Set the tubes aside for forty-eight hours at a temperature between 15 and 20 C. At the end of this time pour off the solution on top of the gelatine and wash the tube carefully with a few cubic centimeters of (cold) water. The penetration, as measured from the upper meniscus to the point where the coloration vanishes in the gelatin matrix, should not be less than one quarter of an inch (*Index of penetration*). When tested by the Kinyoun method for antiseptic properties against *Staphylococcus pyogenes-aureus*, a 1: 100 solution of ammonium ichthyolate-Meadows should not show any growth after forty-eight hours; and broth transfers at this time should not show any growth after twenty-four hours' incubation. When tested by the same method against *Bacillus coli*, a 1: 10 solution of ammonium ichthyolate-Meadows should show no growth after forty-eight hours; and a broth transfer at this time should show no growth after twenty-four hours' incubation.

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SATURDAY, APRIL 1, 1922

INCREASE IN DISEASE ASSOCIATED WITH INTESTINAL WORMS

For most physicians the contemplation of the occurrence of invasion of the alimentary tract by some of the more familiar intestinal parasites, such as the tapeworms, roundworms and pinworms, awakens no realization of seriousness. The prognosis in human patients is almost universally regarded as good when once the existence of the invaders has been detected beyond question. The routine anthelmintic measures are generally assumed to be effective and adequate. Whatever harm arises from the worms is usually ascribed almost entirely to the mechanical difficulties which their presence may entail, although of late the possible liberation of objectionable toxins from the parasites has been taken into consideration as an untoward factor.

The World War, which has brought about revolutionary and sometimes almost kaleidoscopic changes in many fields of medicine, seems to have forced the problem of the animal parasites of the human intestine into a new prominence. There are many reports, particularly from the localities where the greatest upheavals have occurred, to the effect that infestation with both the pinworm *Oxyuris* and the roundworm *Ascaris* has become decidedly more common. This increment is attributed by one investigator[1] in the case of oxyuriasis to the shortage of soap and the consequent decline in the standards of personal hygiene among the populace at large of central Europe. For the spread of ascariasis the more extensive use of human excrement as fertilizer and the consequent increased contamination of vegetables, etc., with embryos of the roundworm are held responsible. When these green foods are eaten without being cooked, as so often happens, the embryos soon develop in the alimentary tract into a new generation of adult worms.

The extensive observations of Schloessmann[1] serve to draw attention to the ways in which the worms may become exceptionally menacing. Ordinarily their alimentary habitat is in the upper portion of the intestinal canal. Through local changes in the bowel they are caused now and then to migrate elsewhere. Fever is a peculiarly potent stimulus for worm unrest and transport; indeed, it happens that persons unsuspecting the presence of ascarids may become aware of their presence through discomfort attending the movements of the worms provoked by a rise in body temperature. It is during such migrations that worms of various species find their way into byways of the bowel, notably the biliary tracts, the pancreatic duct and the appendix. Sooner or later, obscure symptoms are likely to call for surgical intervention under conditions in which diagnosis is rendered most difficult. The literature of surgery has recorded numerous instances, but the records since the close of the war have served to emphasize these real menaces of ascariasis.

Another occasional untoward consequence is to be found in migrations of worms so as to lead to their clumping into masses of considerable size. In rare instances, fatal ileus—ileus verminosus—may attend a complete obstruction of the bowel in this way. The surgical clinic of the University of Tübingen has alone reported no less than twelve cases treated during the four years of the European war; and there are reports of many cases elsewhere.[2] If, in addition to all of the foregoing features, the possibility of intoxication from poisons generated by the parasites is taken into account, the problem can no longer be dismissed with indifference. It is unnecessary to magnify unduly the pathogenic importance of the parasitic worms of man; nevertheless, medicine can only profit by being awakened to dangers that may be overlooked all too often because, though near at hand, they are never suspected.

THE CAPILLARY CIRCULATION

In the consideration of the varied circulatory functions of the blood vessels, attention has been riveted in the past almost solely on the arteries and veins and the changes that occur in them incident to diverse physiologic and pathologic conditions. Consequently, there has been a tendency to overlook the link between the afferent and efferent vessels connected with the different organs and tissues, and to forget that in ultimate analysis the capillaries are the parts of the vascular system immediately concerned with the nutritive and respiratory exchanges in the body. As a recent writer has expressed it, the rest of the cardiovascular system exists only to regulate the blood flow through the capillaries, for here takes place the exchange of gases necessary for internal respiration and the exchange of materials necessary for metabolism. Any attempt to measure cardiovascular function is an indirect attempt to measure the efficiency of the capillary circulation.

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[1] Schloessmann: Neue Beobachtungen und Erfahrungen über schwere Spulwurmerkrankungen der Bauchorgane, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **34**: 1, 1921.

[2] Rost: Ueber Askarideníleus, Deutsch. Ztschr. f. Chir., 1919, p. 251.

The failure to devote more direct consideration to capillary function in the past has for the most part been due to the technical difficulties which observations on these, the smallest vessels of the circulation, involve. Recently, however, a revival of interest in the behavior of the capillaries has followed the development of fairly satisfactory methods of direct observation rather than indirect deduction, such as has heretofore been depended on, for the most part, for our current knowledge of circulatory functions in the capillaries. Direct inspection of the capillaries began, it is true, soon after the discovery of the physiologic applications of the microscope in the seventeenth century. Ophthalmologists have long been accustomed to inspect the smaller vessels in the retina for the purposes of diagnosis. But the demonstrated possibility of ocular examination of the skin capillaries in man, made possible by the device of rendering the tissue translucent with oil, may be said to inaugurate a new era in the study of the vessels with which tissue function is most immediately concerned. In summarizing our knowledge of the subject, Hooker [1] has remarked that the capillary bed is responsive to both chemical and nervous influences. Broadly speaking, he adds, we may say that chemical factors, so far as they have been studied, mediate dilatation of the capillaries and venules, while nerve stimulation mediates constriction of these vessels. Both these factors have long been recognized as participating in vascular reactions, but only in recent times have they come to be specifically located in their effects on the capillary and venule, that is, on that section of the vascular bed which is composed of bare endothelium.

By applying the method of direct observation of the capillary circulation to clinical conditions, Freedlander and Lenhart [2] of Cleveland have obtained a picture of the changes that take place in traumatic shock, the condition recognized by the group of symptoms consisting of low blood pressure, grayish pallor, mental stupor, rapid, small pulse, rapid, shallow respiration and usually subnormal temperature. They are attended by almost complete stasis in the skin capillaries, a situation thus corroborating the clinical impression. A similar picture was secured in severe cases of septicemia in which there had been a sudden collapse. It is well known that patients with hypertension with the same blood pressure may show great variations in the symptoms that they present, despite the high blood pressure to which all are subject. The findings of Freedlander and Lenhart suggest the possibility that such differences may be due to the unlike conditions with respect to the blood in the capillaries. In some cases they have noted an intermittent flow in poorly filled capillaries; in others, a steady transmission of the circulation. Evidently, some of the symptoms are related not so much to the hypertension per se as to the blood supply in the capillary vessels. Perhaps, when the facts have been better fathomed, it will be possible to introduce a more rational therapy and to learn precisely when it is either advantageous or disastrous to attempt to alter the blood pressure: in other words, to distinguish a poor capillary circulation which is the direct outcome of a hypertonic rise in blood pressure. However, even now, in view of the newer studies which corroborate the clinical picture, the Cleveland investigators express their greater faith in observations of a capillary stasis in shock, the capillary picture in cardiac decompensation, the poor capillary flow in some cases of hypertension, and the different pictures of a capillary pulse.

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[1] An excellent review of the experimental work in this field has recently been published by Hooker, D. R.: Evidence of Functional Activity on the Part of Capillaries and Venules, Physiol. Rev. **1**: 112, 1921.

[2] Freedlander, S. O., and Lenhart, C. H.: Clinical Observations on the Capillary Circulation, Arch. Int. Med. **29**: 12 (Jan.) 1922.

BACTERIOSTATIC ACTION OF THE TRIPHENYLMETHANE DYES

There are few chapters in the history of chemistry more fascinating than those dealing with the expansion of theory and practice which has resulted from a study of the anilin dye derivatives. The first use of these substances in biology was for the selective staining of tissues and cells of various types, though it was early observed that some of them were antagonistic toward bacteria. Ten years ago, gentian violet was merely one of the anilin colors which, under the microscope, gave a clear picture of certain forms of bacterial life; but in 1912 and in succeeding years, Churchman [1] called attention to its bactericidal powers. As he more properly calls it, anilin gentian violet appears to be a bacteriostat—inhibitive but not necessarily lethal. Churchman has shown that its action is selective, gram-positive organisms being killed or inhibited, while gram-negative organisms are in general unaffected.

The applications of the discovery of the selective power of gentian violet have been manifold in both bacteriology and medicine. The bacteriologist has found culture mediums containing gentian violet of definite value in the isolation of *Bacillus tuberculosis, B. influenzae, Epidermophyton inguinale* and of the anaerobes,[2] as well as in the improvement of methods of testing potable water for the colon bacillus.[3]

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[1] Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, J. Exper. Med. **16**: 221 (Aug.) 1912; The Selective Bactericidal Action of Stains Closely Allied to Gentian Violet, ibid. **17**: 373 (April) 1913.

[2] Petroff, S. A.: A New and Rapid Method for the Isolation and Cultivation of Tubercle Bacilli Directly from the Sputum and Faeces, J. Exper. Med. **21**: 38, 1915. Bernstein, E. P., and Loewe, L.: A Simple Method for Isolation of Influenza Bacillus, J. Infect. Dis. **24**: 78 (Jan.) 1919. Farley, D. L.: Isolation of Pathogenic Molds (Epidermophyton Inguinale) by the Use of Gentian Violet, Arch. Dermat. & Syph. **2**: 466 (Oct.) 1920. Hall, I. C.: Selective Elimination of Hay Bacillus from Cultures of Obligative Anaerobes, J. A. M. A. **72**: 274 (Jan. 25) 1919.

[3] Hall, I. C., and Ellefson, L. J.: The Elimination of Spurious Presumptive Tests for B. Coli in Water by the Use of Gentian Violet. J. Bacteriol. **3**: 329 (July) 1918; A Brief Note on the Use of Gentian Violet in Presumptive Tests for B. Coli in Milk with Reference to Sporulating Anaerobes, ibid. **3**: 355 (July) 1918.

Furthermore, the demonstration[4] that within a "pure" culture of *B. coli* there might exist two distinct strains, one resistant to gentian violet and one inhibited by it, was one of the pioneer discoveries in the field of bacterial variability—or, as it has since been called, microbic dissociation—which has proved of considerable theoretical importance during the last few years. This phenomenon was foreshadowed in 1912 by the observation[5] of a strain of *B. enteritidis* which did not grow in the presence of gentian violet, though the other four strains examined and identical with it by all the usual tests were unaffected by the dye.

The studies with gentian violet have also thrown light on another question of fundamental interest from both a theoretical and a practical point of view. Whether or not the living nucleus of tissue cells can be stained has for years been a debated question. In spite of some early observations to the contrary, the older literature took the position rather firmly that the deposit of stain within the nucleus is incompatible with life, and much of the newer literature reaffirms the traditional opinion, which has, indeed, been rather generally held. In 1913, however, Churchman and Russell[6] were able, by the tissue culture method, to observe division of nuclei stained with gentian violet which had been added to the mediums in which the tissue was grown. Confirmatory evidence of the correctness of the conclusion necessarily to be drawn from this experiment—that the living nucleus can be stained—has been subsequently obtained from other sources. It has been shown by injections into the human knee joint during life that the nuclei of the synovial membrane may be stained without apparent injury;[7] and also that living bacteria may be deeply stained without interfering with their growth. Since the appearance of the first of these two publications, other investigators, using a similar technic, have observed division of tissue cells whose nucleoli contained the dye pyrrol blue. Whether the dye, in the gentian violet experiments, rests actually in the nuclear material or, as suggested by certain experiments of Evans and Schulemann, in the nuclear lymph, the essential fact seems to be that foreign coloring matter has been lodged within the nucleus without impairing it. Gentian violet, therefore, proves to be selective not only as between gram-positive and gram-negative organisms, but also as between bacteria and tissue cells. Complete experimental evidence has thus, for the first time, been provided for the principle that agents which kill bacteria may be without harmful effect on the vital part of tissue cells—the nucleus—even though they have permeated it.

From a medical standpoint, the possibility that gentian violet and allied dyes might be used for in vivo disinfection has seemed a most attractive one. The treatment of acute infections of the joint by lavage and direct medication with gentian violet, first suggested by Churchman,[7] has given encouraging results. The same method has been applied to the treatment of chest infections during the last year,[8] while the dye has proved of some value in the sterilization of granulating wounds of various types.

There are many tempting possibilities of future investigation in regard to such selective bacteriostatic action. From the theoretical side, the isolation of the particular chemical group responsible for the activity of the triphenylmethanes would be of great interest, as would a better understanding of the underlying reasons for the parallelism between the Gram reaction and bacteriostasis. From the practical standpoint many new applications are possible, particularly if the difficulties in the way of the intravascular use of the dye—which, though great, may not prove insurmountable—can eventually be overcome. The striking results obtained with gentian violet indicate the desirability of pursuing further the study of its action.

Current Comment

"PREMEDICATED" ALCOHOL

A petition to permit the use of so-called "premedicated" alcohol in remedies for internal use has recently been placed before the Secretary of the Treasury and prohibition officials. According to drug journals the petition was presented by Mr. Harry B. Thompson, general counsel for the Proprietary Association—the organization of "patent medicine" interests—and also by the Chattanooga Medicine Company—makers of "Wine of Cardui." It is proposed that alcohol may be denatured, that is, "premedicated," by using just enough of one or more of the ingredients of the particular mixture to be made to render the alcohol unfit for beverage purposes—nominally, at least! When thus medicated, the alcohol is to be tax free. The proposal, which on the face of it may seem attractive because of the great difference in the price of pure alcohol and denatured alcohol, contains dangers to medicine and to pharmacy. It means that alcohol, in such instances, would be denatured or "premedicated" at distilleries, and would then be shipped to the pharmaceutical houses where the manufacture of the medicine would be completed. In case of preparation of high-grade pharmaceuticals, therefore, scientific control would be difficult. Furthermore, it would be necessary for the manufacturer to have as many, or nearly as many "denatured" alcohols as the number of alcohol-containing preparations he makes—a relatively large number; again increasing the possibilities of error. From the scientific point of view, the serious objection is that the proposed plan would disturb pharmacopeial standards and methods of procedure, introducing rigidity where elasticity is often required. Extemporaneous pharmacy would be seriously hampered, and this, in turn, would affect the physician and, more important, the patient. It may be argued that the druggist and the manufacturer of high-grade pharmaceuticals would be under no obligation to use the "premedicated" (and tax free) alcohol; it would merely be permissible. It is obvious, however, that the operation of natural economic forces—competition—would assert itself here as inevitably as in all other fields of commercial enterprise. The use of tax free alcohol, which would cost about 85 per cent. less than the taxed product, would supersede the use of the higher priced, pure (unmedicated) alcohol. Of course, the makers of alcoholic "patent medicine" would profit primarily and the distillers secondarily. It seems doubtful to those familiar with the methods of nostrum exploiters that the saving would be passed on to the public.

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[4] Churchman, J. W.: Further Studies on the Behavior of Bacteria toward Gentian Violet, J. Exper. Med. **33**: 569 (May) 1921.

[5] Churchman, J. W., and Michael, W. H.: The Selective Action of Gentian Violet on Closely Related Bacterial Strains, J. Exper. Med. **16**: 822 (Dec.) 1912.

[6] Churchman, J. W., and Russell, D. G.: Proc. Soc. Exper. Biol. & Med. **9**: 120, 1913-1914. Russell, D. G.: The Effect of Gentian Violet on Protozoa and on Tissues Growing in Vitro, with Especial Reference to the Nucleus, J. Exper. Med. **20**: 545, 1914.

[7] Churchman, J. W.: The Treatment of Joint Infections by Lavage and Direct Medication, Ann. Surg. **62**: 409, 1915; Treatment of Acute Infections of the Joint by Lavage and Direct Medication, J. A. M. A. **70**: 1047 (April 13) 1918; Septic Arthritis of the Knee Accompanying Fracture of the Patella, ibid. **72**: 1280 (May 3) 1919; Sterilization of Closed Cavities by Lavage and Staining with Gentian Violet, ibid. **77**: 24 (July 2) 1921.

[8] Waters, B. H.: Pleural Infections Complicating Artificial Pneumothorax Treated with Gentian Violet, Am. Rev. Tuberc. **4**: 875 (Feb.) 1921. Major, R. H.: The Treatment of Empyema with Gentian Violet, Am. J. M. Sc. **162**: 397 (Sept.) 1921.

THE ADVERTISER IN BELLES LETTRES

Progress in the art of advertising has been marked by certain high points which include, for example, the scientific study of display, the application of the fundamental laws of the psychology of vision; the employment of noted artists and litterateurs for the preparation of copy, and, finally, the utilization of unusual methods for attracting the reader's attention. Sometimes, however, the results of the application of the esthetic arts to commercial purposes is highly incongruous. A recent issue of the house organ of a pharmaceutical specialty house contains several advertisements of glandular products. Presumably in order to attract the attention of readers, the names of famous writers are used. Thus: Montaigne, the noted French essayist, who died of nephritis, is utilized to suggest that if his physicians had known of "Nephritin" they would have been able to furnish him with "substantial constructive help," a statement which may be more readily accepted by litterateurs than by pathologists. Joaquin Miller, the poet, just before his death, issued an announcement to the effect that the simple life would prevent indigestion; ergo, since all of us cannot live the simple life, we must depend on Peptenzyme. Thomas Hood, the great humorous British poet, fell ill and his wife made broths, soups and other nourishing dishes for him, but poor Hood did not improve and slowly passed away. "Therefore," says the advertiser, "use Trophonine," which, it is claimed, is a palatable liquid food. Finally, Victor Hugo during the siege of Paris wrote: "Yesterday I ate some horse. Today it is dog, maybe it is rat. God help us; we are eating the unknown. Is it any wonder that we are all constipated?" "Like Victor Hugo," proclaims the advertiser, "millions today are eating the unknown, and are paying the toll in constipation." "From whatever cause it originates . . . Pancrobilin is always indicated." One may picture the shades of Montaigne, Miller, Hood and Hugo, on the slopes of Parnassus, pointing with pride to this twentieth century echoing of their literary achievements. Alas, where they now are Nephritin, Peptenzyme, Trophonine and Pancrobilin cannot avail.

"FAIR PLAY TO THE PUBLIC"

An editorial in a recent issue of the New York *Evening World* commented on an investigation that had been made in New York in an attempt to test the quality of "chiropractic" knowledge. Normal individuals went to certain chiropractors, gave fake symptoms, and the chiropractors "discovered" subluxations whose presence defied the roentgen ray. The *Evening World* very properly pointed out that, possibly, if normal individuals went to reputable medical practitioners and reported fake symptoms, physicians themselves might "fall down" on both diagnosis and treatment. As a result of this comment, the *Evening World* received a number of letters of approbation from the chiropractors, in one of which the writer commended what he termed the paper's "policy of fair play to the chiropractors." The *Evening World* came back with an editorial whose title we reproduce in the caption. This editorial contains so much sound sense that we make no apology for reprinting it practically in full:

> The *Evening World* is vastly more interested in a policy of fair play to the public.
>
> Fair play to the public would, we believe, eliminate 90 per cent. or more of the present practitioners of chiropractic.
>
> Fair play to the public would require adequate education of chiropractors—for example, a regular medical course plus the specialized postgraduate work expected of a specialist in other fields of medicine.
>
> In such a course many would-be chiropractors would come to the conclusion that manipulation of vertebrae is not a cure-all, whatever its possibilities.
>
> Fair play to the public demands that chiropractic processes should be used only by men who know thoroughly what they are doing and why. Both common sense and science deny that all ills are traceable to the spine.
>
> Fair play to the public demands a strict curb on a great mass of quackery masquerading under the name of chiropractic. Fair play to the public would send a substantial percentage of chiropractors either to school or to jail.
>
> Adequate education might develop some competent healers of a limited group of diseases from the crowd of incompetent meddlers. But, given education, it is probable most of them would cease to be chiropractors.

BENIGN GIANT CELL TUMOR OF BONE

The fact that limbs undoubtedly are being sacrificed needlessly on account of a distinctly benign growth in bone prompts this brief reference to the so-called benign giant cell tumor of bone. These growths are known also as medullary giant cell sarcoma, and giant sarcoma of the epulis type, and occur usually in the ends of the long bones, especially the upper end of the tibia. According to Martland,[1] in a recent presentation of the chief features of primary bone tumors, these growths commonly follow a definite trauma, grow slowly, and recur after incomplete removal, but do not form metastases in distant parts. In fact, there seems to be no record of a typical growth of this kind ever giving rise to secondary nodules in the lungs or elsewhere. The growth usually is confined within the periosteum, does not infiltrate, and is removed easily from its bony shell. The tissue is vascular and friable, resembling red currant jelly or fresh liver tissue, and consists microscopically of granulation-like tissue, with cellular and hemorrhagic areas as well as fibroblastic whorls looking in some degree like spindle cell sarcoma, and numerous giant cells with glassy cytoplasm and many vesicular nuclei. Often the giant cells seem to predominate, as indicated by the names cited. The examination with the roentgen ray reveals an expansive, abrupt, well defined growth with a definite bony shell. Instances have been observed in which benign giant cell growths in time have changed into local cystic formations, and rare cases of multiple giant cell growths becoming cystic (osteitis fibrosa cystica) are recorded, notably the case followed for many years by Martland, who finds that there are four such cases in American literature. In the discussion of Martland's paper, Ewing states that, at a meeting of about thirty surgeons in New York, no less than twelve announced that they would amputate in a case presenting the features just given as characteristic of the benign giant cell tumor. This episode suggests that deplorable ignorance exists in regard to the nature of these growths. It is important that in the diagnosis of such growths all the characteristics be considered carefully. Ewing emphasizes their susceptibility to infection on incision and incomplete removal, and also that they "respond very well to treatment by physical agents, roentgen ray and radium." It is of interest to note, too, that Ewing is also in favor of a more extended and thorough trial of the roentgen ray and radium in malignant osteogenic sarcoma, because promising results have been obtained and because no other treatment now available—and that means amputation—is satisfactory or successful. In the case of the benign giant cell tumor of bone, however, the demand for a rational conservatism in surgical treatment is not for the purpose of determining its value, because that has been established beyond question, but in the interest of the welfare of the individual patient.

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[1] Martland, H. S.: Primary Bone Tumors, Their Classification with Special Reference to Benign Giant Cell Tumor, Proc. New York Path. Soc. **21**: 102, 1921.

PHYSICIANS IN GERMANY AND IN THE UNITED STATES

Statistics showing the supply of physicians in other countries are interesting since they permit a comparison with the number in the United States. In the Berlin letter published last week, the number of physicians in Germany in 1921 is given as 36,186 for a total population of 60,412,084, or one physician to every 1,670 people. There is, therefore, proportionally a larger number of physicians in Germany than before the war. Since the close of the World War, anxiety has been expressed there because students in increasing numbers have been entering the medical schools, which indicates a further overcrowding of the profession. If there are good reasons for anxiety on this score in Germany, what about the United States? The figures for 1920 [1] show that this country had one physician for every 726 people—more than twice as many as Germany, in proportion to the population. Another interesting fact is brought out in the letter, viz., that the forty-four largest cities of Germany, with only 25 per cent. of the population, have 44.2 per cent. of all physicians. Similarly in the United States the seventy-seven largest cities, which have 25 per cent. of the population, have only 36.5 per cent. of all physicians. In Germany, therefore, the tendency of physicians to locate in the larger cities is even more pronounced than it is in the United States.

Association News

THE ST. LOUIS SESSION

Hotel Reservations

The Local Committee on Hotels for the St. Louis Session reports that in some instances Fellows have made duplicate hotel reservations. This preempts accommodations which should be available for those who have not yet secured reservations. The committee is concerned that every Fellow who attends the annual session shall have comfortable quarters, and it urges that the making of duplicate hotel reservations be avoided and that any which may now be held shall be adjusted by releasing all rooms in excess of those which are to be occupied. If Fellows, after writing to the hotel of their choice, are unable to secure accommodations, on request the hotel committee will render its assistance. The Local Committee on Hotels should be addressed, Dr. Louis H. Behrens, Chairman, 3525 Pine Street, St. Louis, Mo.

Preliminary Announcement of Social Events

The Committee on Entertainment reports that Mrs. Willard Bartlett has accepted the chairmanship of the Ladies' Entertainment Committee. As a result of the activities of this ladies' committee, the visiting women will be provided with a full program of social events. The tentative program now rapidly taking definite form includes a tea on Tuesday afternoon; participation in the Opening General Meeting, Tuesday evening; a musicale, Wednesday morning, to be followed by a luncheon which will be available to those ladies who desire it; an automobile ride during the afternoon; a river trip, Thursday morning, and a reception in the afternoon; automobile trips, Friday morning, and an entertainment at the Missouri Botanical Gardens during the afternoon. The Local Committee on Ladies' Entertainment is hoping that the attendance of visiting ladies will be large.

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

(Concluded from page 902)

FRIDAY, MARCH 7—MORNING

HOSPITAL DISPENSARY SERVICE

The American Conference of Hospital Service

DR. FRANK BILLINGS, Chicago: The American Conference of Hospital Service was organized in Cincinnati in the fall of 1920 by the representatives of national organizations which were engaged in an effort to improve hospitals. Among the organizations that took part in the establishment of the conference were the American Hospital Association, the American College of Surgeons, the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States, industrial physicians and surgeons, and one or two nurses' organizations. They deemed it necessary to have in the hospital a clearing house for the purpose of establishing a central repository or library in which would be deposited, and be available for use, data relating to hospitals, not only in regard to professional work but also with reference to the administration of hospitals, plans of construction and equipment.

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[1] Proportion of Physicians to Population, J. A. M. A. **76**: 1248 (April 30) 1921.

Fundamental Principles of the Standardization of Hospitals

Mr. John G. Bowman, Chancellor, University of Pittsburgh, Pittsburgh: The idea prevails today in medicine that no society wants to duplicate efforts of other organizations. If the purpose of a hospital is to make for better care of the sick or injured, you cannot bring into your program anything that does not make directly for the better care of the sick or injured. If the initiative of work in the hospital is to be kept alive, a free play of the intelligence of each individual must be kept alive, and this means, first, an objective mark for future attainment must be clear. Everybody in the hospital must feel not only intellectually but emotionally what the thing is for and must seek to accomplish that purpose. In this process of attainment of the mark, a constant series of alternatives will necessarily arise which call for judgment, a free play of the intelligence being forced into action. If results strike closely to the mark, nothing more is required. The purpose of a hospital is training.

Hospitals were created by society for the care of the sick and injured, and in recent years society has come to realize that medicine outdoes all other professions. Hospitals are accountable as institutions to the public for the right care of every man, woman and child admitted as a patient. The hospital assumes some real responsibility to the public for the character of its service. The medical profession is in a stronger position today before the public than it has ever been, and I believe it is in process of rapidly strengthening that position. Taking hold of the hospital and making it an avenue through which the profession can carry out the responsibility it owes to society is one of the great problems of today.

Hospital standardization is a detective process, and it is also one with a moral process. Whenever a service in a hospital detects human illness and relieves it, the service is essentially moral. It is the transmission of good. Morality is something you cannot put in cold storage and take out on Sundays. The sum total of a sound program of hospital standardization carries forward and tends to compel proper service to the individual practically, scientifically and morally.

DISCUSSION

Dr. M. L. Harris, Chicago: Since every physician is in favor of anything that will contribute to the better care and treatment of the sick, no argument is necessary to convince the medical profession of the desirability of improving the efficiency of hospital service. The term "standardization of hospitals" is an unfortunate one, since it does not convey in any sense the ends to be accomplished, namely, better care and treatment of the sick. The best criterion of hospital efficiency is the amount of human suffering relieved by the work done in that institution. The word "efficiency" embodies the idea that the work should be done as expeditiously and as economically as possible. The benefit of a hospital to a community is a relative question, and depends on the particular community and the honesty and ability of the men doing the work. In the elaboration of hospital management, there are many things in the way of clerical, statistical and technical work which can be advantageously done in large, richly endowed hospitals, or by state institutions, which often have more regard for that kind of work than they have for the character of the output. Frequently it seems to be forgotten by those who are attempting to standardize hospitals that there comes a point in the management of the smaller hospitals at which better work may be done than is done in some of the larger ones, when the installation of such elaborate systems costs a great deal more than the benefit returned to the patient. In such cases, they should not be installed from an economic standpoint, for next to the welfare of the patient's physical condition comes economy of management.

Most hospitals are controlled and managed by a board of trustees, and this body is responsible for the policies of the institution. Hospitals are the workshop of physicians; the material worked on is the sick; the output is health. It is very properly assumed that physicians know more about the care of the sick than any other class of individuals; therefore, medical men should be on every board of trustees managing hospitals. I believe that the majority of the members of such boards should be composed of medical men. When medical men dominate the policies of boards of trustees of hospitals, we shall see fewer humiliating instances of medical men selling their soul and body and independence to an institution for the privilege of having their names appear as a member of the staff of the institution.

The closed hospital has come to the front as a result of the propaganda of so-called standardization of hospitals. This sounds much like, and is on a par with, the closed shop of the labor unions. Unless a man is a member of the union, he may not work in a union shop or place. The same tendency is seen cropping out in some hospitals. As a result of the propaganda for standardization of hospitals, many boards of trustees, not dominated by medical men, and superintendents of hospitals misguided by false ideas of the real purpose of a hospital, are asking the question of a physician who wishes to take a patient to the particular hospital whether or not he is a member of some organization. If not, permission to have the patient enter the hospital under his care is denied him. Such a short sighted policy must end disastrously, and the remedy lies in the hands of medical men.

The most audacious and pernicious stand is promulgated that the patient belongs to the hospital and not to the physician, and that the hospital alone is it. It seems scarcely possible that a person would have the audacity to give utterance to ideas so destructive of the responsibilities of the profession. It is even more remarkable that the medical profession has not resented the insulting proposition. If such a preposterous idea prevails, the medical profession will soon be reduced to a purely secondary and subordinate position in the care of the sick, where favored ones might, by the grace of the management, be permitted to sit quietly on the steps of the hospital hoping that the superintendent might condescend to call in one of them and give him permission to prescribe for a patient under his watchful eye. That such a scheme would be to the best interest of the patient, it would seem no intelligent person could even dream. But with such ideas in the air, is it not about time that the medical profession assumed a little more control of medical matters?

Rev. Charles B. Moulinier, Milwaukee: There are more than 8,000,000 people who pass through the general hospitals of the United States and Canada every year. Those who are closely connected with the whole movement for better hospitals have concluded that within the last three years the care of those 8,000,000 people has been very much improved. The number of operations that have taken place in each of these hospitals is perhaps 5,000 or 6,000. It has been estimated that 30,000 or 40,000 operations that would have been considered necessary before were found out not to be necessary because of increased care and caution. As a matter of end-results, this movement has been of benefit to the patients. The whole movement was started from the one fundamental point of view of the right of the patient to the best possible care within reason, from the medical man, from the nurse, and from the hospital management. The most fundamental right that each one of us has is the right of life and the well-being of life as a necessary consequence. This movement for better hospitals has grown out of an appreciation of that fundamental right of the human being.

Qualifications and Training of Hospital Superintendents

Dr. A. C. Bachmeyer, Cincinnati: Considerable thought has been given to a contemplated course of training for hospital superintendents, but as yet opinions and plans have not been crystallized so far as extent of studies and methods of instruction are concerned. A number of individuals throughout the country have been giving attention to the subject.

The Rockefeller Foundation is supporting a committee which is now engaged on a study of the subject, but no definite program has as yet been prepared. The only way in which physicians, nurses or laymen can enter the field with any training or experience is by means of an apprentice system, in which they serve as assistant in one of the larger hospitals for a number of years or enter the hospital employ in some minor capacity, and then, by promotion, win their way to the superintendency. The number who in this way become available for executive positions each year is small. If our colleges can prepare men for other professional and technical vocations, they certainly should be able to prepare men and women for administrative positions in our hospitals.

A hospital superintendent should be a mature individual, of clear mind, broad vision and good perspective, having executive ability and initiative. He should possess sufficient experience in business and administration and in those more or less mechanical and clerical duties of the executive.

The course of training should first be considered as a whole, and then subdivided into such units or divisions as may be easily administered from the point of view of instruction. Because of existing conditions, the limited remuneration now being paid the majority of superintendents, and the varied type and size of institutions, the course should be restricted to a rather short period. It has been suggested that, for these reasons, the instruction should not extend over a period of more than twelve, or at most eighteen consecutive months.

The training should primarily give the student inspiration and point of view. He should be led to think of the hospital in terms of its relation to the community, to the medical and nursing professions and to society in general. It is the hope that beginning in the fall of this year, a course will be established, which will include history, sanitation and hygiene, biometry, sociology, jurisprudence, business science, domestic science, building and power plant operation and maintenance, and administration.

DISCUSSION

Mr. Edwin R. Embree, secretary, Rockefeller Foundation, New York: It seems to me that not only must we teach students known facts about the management of hospitals, but we must continue to increase knowledge of the science, knowledge of the procedure of hospital management and in a general way explain the training in the known sciences. We must instruct students regarding the management of hospitals and clinics and institutional medicine in all of its phases. We must conceive of schools as schools of medicine. If we had started 100 years ago by establishing medical schools and had contented ourselves with passing on the knowledge of medicine, we should have made little progress. The greatest contribution of medical schools in the past generation was not the training of medical students but the additions to medical science that have been contributed by the professors and the students working with them in these medical schools. The chief difficulty we have to contend with in setting up a training school for hospital executives is that we know so little of what the curriculum should be and what the hospital and its related departments are to be. We have made no strong effort to correlate medical service, nursing service, and business administration in such a way as to make it possible for a person who wants to go into the administrative side of institutional medicine to get what he needs.

Dr. Willard C. Rappleye, chairman, Committee on Survey of Opportunity of Training of Hospital Executives, San Francisco: The training of hospital executives must in its last analysis be contingent on the interpretation of the function of a hospital. Obviously, the unit of operation of a hospital is the patient, and a patient going into a hospital represents nothing more nor less than the cross section of a human life. The prime object is to set up machinery and other facilities by which we can bring into play the best scientific medicine, and particularly in the form of adequate diagnosis. Housing and care and feeding of patients is a subdivision of the great object of service of the hospital. Another equally important feature of hospital function is the organization of machinery to carry on work that has been done in the hospital. The discharge of the patient does not complete the obligation of a hospital. We must provide the machinery to carry on the work which the hospital has undertaken following the diagnosis, the operation in a case of tuberculosis or of heart disease. We must provide the machinery for the consideration of dietary problems in cases of diabetes, readjustment in cases of mental diseases and other pathologic conditions. We must be prepared to carry on the good work started in hospital organization in the problems of rehabilitation, reeducation and readjustment.

A large amount of public health work, of preventive medicine, is a problem in education, and one of the great functions of a hospital is to carry on educational work in interpreting medicine to the community, in interpreting the value of scientific medicine and of the facilities of the hospital and of everything that medical organization can bring.

Dr. A. R. Warner, Executive Secretary, American Hospital Association, Chicago: It is not pleasant for a hospital administrator to stand by the side of the necropsy table when it is plain that death was due to failure of the institution, and in no way accountable to any act of the surgeon. It makes hospital administrators think. It has been said today that physicians are particularly qualified to direct the destinies of a hospital. I began hospital administration after a four years' course in medicine, eighteen months of internship, and three and a half years of private practice, and had acquired a maturity of thirty-five years, and as I think back over the past years on the mistakes in my administration which affected the rights of the patients that were in that institution, I am a supporter of any movement which can in any way add to the better administration of our hospitals and the better training of the hospital administrator who is above all responsible for the details of the institution. I believe, from personal experience, that many of the mistakes and much of the ignorance responsible for the failure of institutions can be avoided by the proper instruction of properly qualified men before they become responsible for the work of any institution.

Dr. George W. Swift, Seattle: With reference to hospital standardization, I hold in the state of Washington relatively the same position that Dr. Harris holds in Illinois, and either I am absolutely wrong in regard to what we are trying to do in hospital standardization for our state, or else Dr. Harris is wrong in his conclusions. Washington has been confronted, medically speaking, by the accusation from the Federation of Labor of incompetence, and they proved their point when we sat in conference with the leaders of labor. Just as Mr. Bowman has stated in regard to fractures of the femur, the Federation of Labor showed that the rank and file of medical practitioners were incompetent in regard to industrial surgery. We had to recognize that fact and we set about to find the reason, and we found that our hospitals were not properly equipped to give modern scientific treatment in industrial surgery. We also found that the physicians in Washington were not properly equipped and trained to administer proper treatment. What is true in Washington I know to be just as true with the rank and file of medical men in other states.

Dr. C. C. Burlingame, New York: The hospital superintendent should be linked up with what hospital organization ought to be. If you are going to train any person to do his job, you have to tell him in advance where he fits into the scheme of things. There seems to be quite a diversity of opinion as to what a hospital superintendent should be in the hospital organization. If we try to define what his position should be, I believe that we shall make fully as great a contribution toward the successful operation of a hospital by asking the question, Is the superintendent to be a sort of secretary to the board of directors, a man who is to conduct committees through the hospital? Is he to be chairman of the medical board of the institution, or is he to be the head of the institution in every sense of the word? I am not attempting to answer those questions, but I do feel that they ought to be worked out. If the superintendent is to be trained to do his job, he has to know what the other jobs of that institution are and what their responsibilities are. The superintendent's job should be to understand the whole organization, the relationship between departments, and he should be the correlating agent between the medical interests and financial interests of the community and of every other thing that touches the hospital. It seems to me that if we can eliminate every unnecessary step and pin the responsibility on some one person, and not on two or three, we shall not only save money, but have better service within the hospitals.

Dr. Paul W. Goldsbury, Deerfield, Mass.: I should like to speak of the difficulty of getting standards into rural hospitals as I have observed them, not as I have worked particularly with them. I can appreciate the difference of the situation in the state of Washington and in Illinois, where there is such a great educational center as Chicago. It would seem to be easy to educate hospital executives from among the medical profession; but the problem in a state like Washington, where the population is largely a rural one, is quite different. From my observation, the larger the hospital the easier it is to have standards, while the smaller the hospital the harder it is to have standards, and the more necessary it is thought to have ideal standards. I think we should attempt to do something to develop a sentiment that will carry ideal standards to the rural hospitals.

Rev. P. J. Mahan, Chicago: One of the fundamental principles mentioned and reiterated, and which we all accept as being absolutely fundamental, is the responsibility of the hospital as an institution, and a moral responsibility to the patient is an accepted principle by the medical profession. If that is true, and it is not accepted by the individual members of the medical profession in a great many instances, this whole movement is meeting with opposition because of that fact. Why is that? One reason is this: That its working out is interpreted by different men in different ways. This movement of improvement of hospitals has been accused openly by many as working out into results that are very undesirable to the medical profession, to the patient, and to the community at large. I do not think sufficient attention has been given to these objections. If they are true, then we should recognize that fact and change the movement. If they are not true, then attention should be given to the objections; at least, a wider publicity should be given to the unsoundness of the objections so that obstacles should be eliminated. One of these objections has been voiced by Dr. Harris, and the ultimate working out of this program will be the closed hospital or hospital assigning patients to physicians. If these two results are inevitable, the program is wrong. I do not believe that it is the result, but it indicates something that should be stressed by those in carrying out this program. One point particularly is this: it is brought forward now that proper hospitalization is necessary in order for physicians to take proper care of their patients. If that is true, every physician who enters the hospitals of a community must have hospital facilities. In what way is this to be carried out? It is necessary to safeguard the interests of the hospitals and of the patients. Every physician should have the opportunity of hospital facilities. If this is kept in mind, the objection raised to the closed hospital will be dissipated.

Mr. Frank E. Chapman, Superintendent, Mount Sinai Hospital, Cleveland: Dr. Harris spoke of having medical men on the board of trustees of hospitals. I am wondering whether we do not forget what the primary function of the board of trustees is. The board of trustees is supposed to be the policy forming body, to have nothing whatever to do with the details of any good purpose. I do not believe that any one but a fanatic is advocating a closed hospital. I do not mean by that there are not a lot of closed hospitals in the country. That the closed hospital has been produced by evolution of thought in administration in the main is incorrect. Let us not think in terms of the closed hospital, but in terms of the control of the hospital, that is, accepting responsibility to the community for the services of each component part of its entire activity. Dr. Harris has been thinking in terms of the patient belonging to the hospital. Some one has said that the patient belongs to the hospital and the nurse. I believe he belongs to himself, and that the physician, the hospital, the nurse, the engineer and the porter are all component parts in rendering the best service to the cross-section of life —the patient; and as long as we think in terms of any patient belonging to us, just so long are we going to have inefficiency in our hospital operations.

Dr. H. R. Smith, Michael Reese Hospital, Chicago: So far as making closed hospitals is concerned, one of the large hospitals has been recently reorganized. It was an open hospital before reorganization and it is still an open hospital, and in all probability will continue to be an open institution. The increasing number of patients is largely due to the fact that this hospital is trying to increase its equipment. I do not feel that any hospital can exist unless it gives to patients the best possible type of equipment and service. If patients cannot be better taken care of in hospitals than they are in their homes, the hospital has no right to exist; and if a hospital cannot prove to the public that it is taking better care of patients than they can receive in their homes, that hospital should close its doors.

Rev. Charles B. Moulinier, Milwaukee: If we do not admit that there is an institutional responsibility, how can we get any authority into the hands of the superintendent? He must have the authority of the whole institution, beginning with the board of trustees, who are the primary sources of responsibility, and then reaching into all those acting in the institution.

Dr. Frank Billings, Chicago: As to the hospital facilities in relation to the medical profession, from 75 to 80 per cent. of the medical profession of this country have no hospital facilities for their patients. That is one thing they should have in any future program. There are some people who are interested in the welfare of others, and who believe that all sick and injured people require hospital care. We have a minimum annual morbidity in the United States of approximately 24,000,000 people who need medical care. At present we do not hospitalize more than 25 per cent. of those people. My opinion is that not more than 25 per cent. of the people need it. In other words, I believe that 75 per cent. of the people who require medical and surgical care can obtain efficient care outside of hospitals. The proportion of people going to hospitals is about right, and I am of the opinion that we should not attempt fully to hospitalize all patients. I believe that the welfare and integrity of the United States of America depend on the maintenance of the family home, and the maintenance of the family home is dependent on the domiciliary visitation of a physician. I believe that is susceptible of proof.

Friday, March 10—Afternoon

The Dispensary as a Factor in Medical Education and as a Diagnostic Clinic

Dr. W. S. Thayer, Baltimore: In its relation to the hospital, the dispensary should be that department in which these many applicants for medical advice or attention who are not ill enough to enter the wards may be cared for. It should be the center from which the patient who has been under observation in the wards may be followed and directed and observed throughout such periods of time as may be desirable. It should be the center of an efficient social service department which should keep in touch with and assist the indigent sick who are under treatment in the dispensary, and their families and attendants. The dispensary is invaluable to the medical school as an arm through which may be gathered patients suffering from those special diseases concerning which studies are in progress. It affords, if properly organized, a mine of material in the shape of patients more or less disabled from chronic disease who may be utilized for purposes of instruction. Again, wholly or partially disabled persons may from time to time earn small sums of money by allowing themselves to be presented as objects of demonstration or study. The dispensary affords an opportunity for junior students acting as assistants to obtain valuable training in the technic of history taking. It offers an opportunity for the senior student of medicine to observe the attitude of his fellow man toward those lesser ailments with which he will be concerned in his daily practice. It offers the one opportunity to study the reactions of the ambulant patient. The success of a physician depends largely on his ability to impress the ambulant patient or the healthy man of the necessity for hygienic and preventive measures on which his health and efficiency may depend. The dispensary should be the center of a department of industrial medicine. There are many questions which not only relate directly to the health of employees but have wide medical, social and economic importance which may best be approached through our schools of medicine.

In its relation to the medical profession the dispensary offers relief to the overburdened practitioner in affording attention to those patients for whom, with all the charity and good will in the world, he cannot care and at the same time do his duty to his other patients and to his own family; and it should offer to the practicing physician an opportunity from time to time to obtain for patients otherwise unable to afford it, the benefit of special refined methods of diagnosis and expert opinion.

In its relation to the public, the dispensary should offer an opportunity for those unable to pay for medical attention, to obtain that advice and care which the busy physician is unable to give. These patients pay for the care and advice which they obtain in two ways: First, by the time which they are obliged to give. The conscientious handling of large bodies of individuals demands time, and a dispensary consultation is timetaking to the patient. The patient pays for the services that the dispensary gives him by the agreement that the consultation may be so carried out as to serve for the instructions of students in medicine, undergraduates or graduates. The demand is steadily increasing that the properly organized dispensary should offer to physicians and through them to the public a clinic in which a thorough diagnostic investigation by competent physicians should be placed within the means of self-respecting and valuable citizens whose private resources forbid them from availing themselves of advice enjoyed by the rich and offered gratuitously to the poor.

The objects of clinical instruction in general are a study of diagnosis, beginning with the teaching and application of methods of physical diagnosis; the study of the natural history of disease, and the study of methods of therapy.

The well organized dispensary should be a little more than a mere outpatient department. It should have a certain number of beds for purposes of diagnostic study and for the temporary accommodation of patients following minor operations or diagnostic procedures. This would clearly increase the efficiency of the outpatient department from every standpoint.

The Dispensary in Its Relationship to the Public and to the Medical Profession of the Community

Mr. Michael M. Davis, Jr., Chief of the Service Bureau on Dispensaries and the Community Relations of Hospitals of the American Hospital Association, New York: In following the program of the Council on Health and Public Instruction and Dr. Vaughan's paper, the thought came to me that a program for the development of the hospital which this section of the American Medical Association has put forward is in principle the same as the program for the dispensary in which I am interested.

The dispensary and hospital differ in detail as will be apparent, but from the standpoint of the essential relation to the subject in hand, namely, to the public and the medical profession, I can see no reason why it is not correct to say that a community hospital program, as outlined in its essence, is not a dispensary program at the same time. The hospital relates itself to the community as a form of medical practice, and the chief proposition which I desire to lay down in outlining certain parts of the subject is that the dispensary must be regarded not as a charity but as a form of medical practice. It implies the same thing that a hospital implies, namely, that the position of the community as a whole must be closely related to the institution. Modern medicine in developing specialism requires laboratory equipment, and the main organization must of necessity be within the institution that practices medicine, the hospital and outpatient department of the dispensary. These must be coordinated.

A second point is that the hospital and dispensary are a unit. Dr. Thayer touched on that in relation to the teaching dispensary. I will go further in the application of the dispensary and say that the outpatient and inpatient departments must be demonstrable units. The organization in the medical staff should be such that the medical staff of the inpatient and outpatient departments are one. The administration of the organization should be one. The patient is an inseparable unit, and no matter whether he passes through the hospital and dispensary back and forth under different names, he yet remains the same patient, with the same essential problems of guidance of the individual through a more or less serious crisis. Any government of the institution which has joint organization with both the inpatient and outpatient service is of importance. There are two points to be considered here: First, the medical profession represented on the staff of the institution must have complete control of the professional work. Second, the group of citizens representing primarily the interests of the community, and no highly specialized group, must have complete control of the public policy, and the professional work must have charge of the medical procedures as outlined in any organization. In education we have in the university a faculty, a dignified group of professional men and women. The board of trustees should not meddle with the subject matter and methods of instruction. This should be left to the faculty. The board of trustees taking advice from the faculty and from other sources has complete control of the general policy of the institution and of cases coming to the hospital and dispensary. That is important in view of the development of group practice. The group practice scheme, organized and directed by some body of men who are interested financially and medically in its work, is almost certain to run upon the rocks because it is inherently ill founded. An institution established as a hospital or dispensary is, must be devoted fundamentally toward rendering the best of service to the patient and public. Its policy must be directed toward looking after the interests of the community in which the medical and lay points of view are intertwined. The dignity and policy of the medical work must be preserved; the breadth and disinterestedness of the public policy must be preserved likewise.

In principle, the dispensary and outpatient department of the hospital must deal in treatment as well as diagnosis.

The development of a dispensary and hospital unit in its relation to the medical profession and the public requires close coordination among the different special departments with one another and particularly with general medicine. It is obvious that such a dispensary organization is a radical change in some respects from the dispensary organization which generally and formerly obtained. It needs a very much wider range of financial interest taken in the dispensary, a greater scale of fees such as we have in the hospital. I see no reason why a dispensary should not, as a form of medical practice, accept patients and render them the best service possible on exactly the same terms as they would patients in a hospital. There is no escape from the conclusion that this is the goal to which we are aiming, although I quite recognize that there are many steps toward attaining it. To serve as a member of the staff on the same terms as the Council on Health and Public Instruction is requiring that the community hospital shall be open to all physicians of the community, so that the dispensary must be open to all physicians in the community for the practice of medicine. You cannot open hospitals to the profession without giving remuneration for services rendered on a certain basis, nor can you open a dispensary without doing the same thing. The method of so doing is a long story. It has not been solved in any of the hospitals of the larger type satisfactorily.

Relation of the Dispensary to the Hospital

Dr. John E. Ransom, Chicago: The more important aspects of the relation of the dispensary to the hospital may be captioned: (*a*) organization relationships; (*b*) staff relationships; (*c*) service relationships, including quarters and equipment; (*d*) financial relationships, and (*e*) community relationships.

Quite naturally the several relationships of the dispensary to the hospital depend largely on whether a given dispensary is a separate, independent, isolated institution or is the outpatient department of a hospital. In the former case the dispensary will, as a rule, have its own administrative control, staff, equipment, budget, community relationships and problems. Its relationships to hospitals will consist largely in some arrangement affecting the hospitalization of patients found by the dispensary to need hospital care and in the interchange of information concerning the transfer of patients from dispensary to hospital and vice versa.

Decided advantages are possible of attainment in the affairs of the outpatient department if there is a competent, intelligent, industrious and insistent committee of the hospital board to whom the fortunes of the outpatient department are entrusted.

With proper staff organization and with a degree of magnanimity rightly to be expected in associates and attending men, outpatient staff men need not lose all contact with or knowledge of the patients they refer from their clinics to the wards. Lack of this facility, however, has discouraged many a promising dispensary physician. Occasional joint meetings of hospital and dispensary staffs, both general and departmental, can be of great value to each group, each service and to the hospital as a whole. The importance of a staff member's responsibility for his outpatient and ward duties should not be differentiated by the hospital authorities.

The quarters, equipment, technical service, etc., available for a hospital outpatient department are in many instances wofully inadequate in relation to the volume of work demanded of the department and to the need for work of good quality. It is indicative of an increasing appreciation of the value of the outpatient service that the more recent hospital construction has made far more ample provision for outpatient clinical work. For the adequate and economical care of patients who need diagnostic or treatment service in both outpatient clinic and hospital ward, there is need for a far better articulation of these two parts of the hospital.

Outpatient medical service would be better if more money were expended on it. The dispensary lacking hospital connection usually has a great difficulty in adequately financing itself. The value and significance of dispensary service is almost unknown to the giving public, and as yet few dispensaries have found a way to secure the needed publicity and public interest.

In brief, one may say that the essential relationship of the outpatient department to the hospital is identification with it. They are one institution. Efficiency is largely measurable in relation to the approximation of this essential unity of the whole hospital.

DISCUSSION

Dr. George Dock, St. Louis: Dr. Thayer spoke of outpatients as not being ill enough for hospital service. That is an idea a great many people have, and it affects the application almost every day for positions in the outpatient department. I am trying to get men interested in the outpatient department. In a great many hospitals, perfectly well people go to them in order to find out what their physiologic condition is, and that is an important function of a hospital. The average patient who goes to the outpatient department has only some trifling illness. On the other hand, he may have angina pectoris and die in ten minutes, or he may have a beginning tuberculosis, and the difference between getting well and becoming a chronic invalid depends on the acuteness and interest of the physician. A patient may have a beginning acute exanthematous disease like smallpox, and be sent to the isolation hospital. Anybody who works in an outpatient department must be prepared to find anything from a mild to the most serious condition. Anybody with any degree of experience, whether a second, third or fourth year graduate, can learn something in the outpatient department. They learn more as the opportunities for learning are present, as the teachers are skilful, and the work is well done. Some people at present would like to take all third or second year men out of the outpatient department and put them in the wards to get their first training here. I look on that as a mistake, for the reason that in the ward, and then in the outpatient department, we ought to be teaching by doing. We do not cram theoretical facts into their heads, but give them opportunities for working. The opportunities in hospitals permit of slower work and the work that is done in a hospital very often results in leaving a man always a slow worker. In the case of men who come from schools where they have only inpatient service, they may be competent to give us adequate ideas regarding certain work; they are useless in the rush of practice either in hospital or private practice. In the outpatient department, the undergraduate should not be taught in a hurried or slipshod way, but I believe undergraduates can be taught certain things thoroughly. For instance, we do not teach the whole technic of case taking in the outpatient department. We leave that to the hospital. Undergraduates take the same sort of history that the average good physician takes in his office, a history sufficient for the purpose and checked up by an expert. I agree with Dr. Thayer and others that one of the problems at present is so to arrange the curriculum that the fourth year man up to the end may have adequate facilities for working in the outpatient department. There they can work with greater advantage than in certain special departments. They are not asked to do elementary work, to take routine histories, to examine laboratory specimens, to work in special clinics, like neurologic and psychiatric clinics, but to work more from the therapeutic side. In the third year we do not spend much time giving therapeutic instruction. We believe it is more important to learn something about the natural history of disease and its detection before they take up the problem of therapeutics.

The development of the diagnostic clinic is becoming more important with the increased cost of living, the increased cost of medical service, and the fact that a large number of people must get their medical diagnostic work in the outpatient department. It is of advantage to the community and the medical profession to see that they get it. The value of that work is not nearly as great as it should be, and that comes particularly from a lack of coordination between the diagnostic clinic and the doctors themselves.

Dr. Arthur Dean Bevan, Chicago: This whole scheme of medicine begins with the fundamental purpose of educating and training properly the practitioner of medicine. Its ultimate aim is to bring the benefits of modern medicine to all people in all communities. Between that primary purpose and the ultimate object there are a number of agencies which play a very important part in this work, and many of these are more important than the hospital and dispensary. The hospital and dispensary are essentially one, and they play a very important part both in medical education and in providing the right sort of medical practice for the community.

I should like to emphasize what Dr. Billings brought out this morning, that the overshadowing figure in medicine should be the general practitioner or family physician. We must recognize that fact, and we shall be making a serious mistake if we get away from that conception. I believe a well trained general practitioner can take care of 80 or 90 per cent. of the people of the community much better than they can be taken care of by any group of specialists, by any dispensary or by any hospital. I do feel that the hospital and dispensary have an important function to fulfil, and the organization that they bring together of medical men and equipment is absolutely essential. I have no doubt that, taking a thousand people in a given community, a well trained family physician can be of greater service to them than ten specialists handling them, and back of any scheme of organization that can be devised that idea should be emphasized, and the importance of the general practitioner should be emphasized to the people in the community. In medical education and in large centers, a teaching hospital and dispensary become a very essential part of the work. In handling the dispensary as a teaching problem, it should be regarded simply as part of the hospital; it should be officered by the same group of men. I do not know of any other way to solve the problem except to have the same group of men work in the outpatient department that work in the hospital itself. There should be close cooperation between the two institutions. I agree with Dr. Dock that students should be put in the dispensary in their third year and in the hospital in the fourth year. The point made by Dr. Thayer that the senior student should go back into the dispensary is very sound.

In regard to the diagnostic clinic, I believe it is going to be developed. The medical profession should take the initiative in this matter, and not leave it to some other agency or the laity to take the initiative. In some places the government has taken the initiative in doing essentially the same class of work.

Miss Ida M. Cannon, Chief of the Bureau of the Social Service Department, Massachusetts General Hospital, Boston: In the education of medical students, I feel that there is something real and vital to hospital social workers in such a relationship. My conception of hospital social work is that it has come as one of the practical, logical developments of organized medicine. We are seeing more and more a desire on the part of physicians to get evidence in regard to industrial injuries. Orthopedic patients are occasionally sent to us for braces, and we find growing girls with definite scoliosis whose condition in many instances bears a definite relation to unhygienic work. We also have cases of lead poisoning to contend with. You say, What has that to do with medical education? We have been trying to make treatment effective, trying to see that the medical work done in our dispensary is yielding results and bringing about happiness in the lives of the patients who come there. As time has gone on and we have been associated with medical institutions in which there was the teaching of medical students, we have been called on to bring some of this information to the clinics.

In the University of Indiana Medical Department, Dr. Emerson, conscious of the social side of medicine, has coined the term environmental medicine, and has insisted that students shall devote a certain amount of time to the social service department. Junior students have each week one lecture hour on social work and are required to make one or two visits to the homes of patients; and when clinics are held for medical students the evidence gathered by social workers from the homes and workshops is brought in as a logical part of the story. I like to think of the home as the workshop and the community in general as the social laboratory, to which medical teachers must look for evidence of certain conditions that are important in your understanding of patients, symptoms that are contributory to diagnosis, but more often definitely related to treatment.

At the Children's Hospital in Boston, under Dr. Lovett and others, they insist with regard to every case that is taken up with students, that a history from the social service department shall not only be presented verbally but entered on the medical record, and that a brief summary of the essential elements shall be put into the history chronologically, and definite recommendations as to treatment made from the social service point of view.

Dr. George E. Shambaugh, Chicago: I desire to emphasize two points: (1) The important function of the outpatient department is to provide proper care for a large number of our population who cannot afford to pay for expert medical service. (2) The outpatient department provides for medical education, one being more dependent on the other than we have appreciated. In order to fulfil either one of these functions there are several things necessary. The outpatient department must have proper equipment. When I undertook to rehabilitate the outpatient department of Rush Medical College I was impressed with the lack of proper equipment, and that was true of the other departments of the dispensary. It was true all over the country. They did not have the organization and equipment that exists in our hospitals. That is one reason the outpatient department is looked down on so much. Secondly, in order to get the work done properly in the outpatient department, it is necessary to institute in that department the same sort of system as that which exists in our hospitals. In order to take care of patients in a dispensary there is a great amount of routine work necessary in examining patients, in making proper records of the findings, etc. If this work devolves on a regular staff of men who are regular appointees of the department, they become tired and the work seemingly is unprofitable for them. They are interested in studying the more interesting cases. Routine work becomes much of a burden to them. In our hospitals this work is taken care of by a system of graduate instruction, the interns serving as graduate students are taking care of the routine work and are making our records in the outpatient department. If we organize the outpatient department properly and give them the proper equipment we have the same as for graduate students, we can accomplish what we are after. At Rush Medical College I undertook to institute a system of graduate students as assistants in the outpatient department. I applied this principle: If we want so many undergraduate students to take care of the outpatient department properly, exactly as in a hospital, we have so many graduate students, so many interns, who are necessary for taking proper care of the work in the hospital. In the outpatient department, graduate students should be limited to that number which can properly take care of the work that should be entrusted to these men. In our outpatient department we have eight men, two coming on each quarter. The outcome of this is that for the first time our patients are getting adequate care and attention. The attending men were tired of taking care of these patients, and they were sending them around to various hospitals, not willing to take care of themselves; hence a large part of the work was neglected, and now graduate students take care of all these cases. We have made it possible so that patients coming to the dispensary are now getting proper care. The work is being done by each one of the assistants under supervision. The regular attending men on the staff are finding their work immensely interesting. Why? Because a large part of the ordinary routine work is being done under the supervision of other men. We take care of eight men each year. If a dozen institutions would take care of the same number of men in otolaryngology, we should soon solve the problem of providing adequate training for such a number of men in this specialty to take care of all the legitimate otolaryngologic work in the country.

Dr. Frank Billings, Chicago: Dr. Shambaugh requires fundamental training before he takes these ex-interns. If they need special knowledge in physics and in physiology of the ear and throat, and knowledge of special anatomy and pathology of these parts he makes them go and get that knowledge first. This is fundamental in order to make a real specialist. They must have a foundation on which to build their clinical experience.

Mr. Alfred C. Meyer, President, Michael Reese Hospital, Chicago: I agree thoroughly with Mr. Davis in regard to unification of the outpatient department of hospital and dispensary as being desirable. Senior men of the hospital staff are not willing to go to the dispensary and do routine work. Dr. Shambaugh has pointed out how in one particular institution very valuable teaching connections are feasible; but, bearing in mind that senior men from the list of hospital staffs are not desirous of going into the dispensary, and that the average dispensary connected with a hospital has a much larger number of people to see than the hospital itself, it becomes apparent that the dispensary will be undermanned, and therefore it becomes necessary to add to the dispensary staff some men who are not a part of the hospital. In addition, there is a collateral reason why men outside should be added to the dispensary, particularly the younger men, and I think that Mr. Ransom brought that point out clearly.

Mr. Davis spoke of the ideal dispensary of the future. Two very vital facts were not mentioned, but I have no doubt that Mr. Davis agrees in the belief that these two points are necessary. First, I believe the ideal dispensary of the future should be an aggressive one. It should not handle conditions simply as they arise within the dispensary. Second, the social service department should be more aggressive. Miss Cannon used the phrase "environmental medicine," which I think is very pertinent, but I believe the pursuit of environmental medicine has to deal more particularly with the individual and not so much with the family, and the ideal dispensary of the future should be operated under conditions in which maladjustments should be corrected or reported by the social workers for correction.

There is one hospital at present where the members of the medical staff are discussing the advisability of establishing a diagnostic clinic either in the hospital or adjacent to it in which service shall be entirely voluntary and in which the net revenue shall be prorated in proportion to the amount of service the various physicians have rendered.

I think that Mr. Davis' clean-cut distinction between the lay control of the policy of the dispensary and the medical control in the actual management of the dispensary is excellent, and I am sure that every institution and every dispensary that has got away from this principle has done so to its regret.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Hospital News.—The Central Alabama Hospital, Clanton, was recently completed at a cost of $30,000. The building is three stories high, equipped with all modern improvements, with accommodations for sixty patients.——An addition is being built at St. Vincent's Hospital, Birmingham, at a cost of $100,000, and will comprise a roentgen-ray department, dining rooms and kitchens. The building will be four stories high.

ARKANSAS

New Hospital Association.—The counties of Ashley, Desha, Chicto, Drew and Bradley have recently organized the Southeastern Arkansas Cooperative Association for the purpose of establishing a $75,000 hospital near the Louisiana-Arkansas line.

New County Society.—At a meeting of the physicians of the county held at Heber Springs in February the Cleburne County Medical Society was organized, and the following officers elected: president, Dr. William J. Hornbarger, Heber Springs; secretary, Dr. Jasper T. Matthews, Heber Springs, and treasurer, Dr. Sheby A. Turner, Little Rock.

CALIFORNIA

Convicted of Violating Practice Law.—It is reported that Albert W. Richardson of San Francisco, head of a chiropractic college, was fined $300 recently for violating the medical practice act.——R. D. Young, chiropractor of Hollywood, was recently convicted of practicing medicine without a license.

Personal.—Dr. Ralph E. Maxwell has been appointed county physician of Stanislaus County to succeed Dr. John L. Hennemuth.——Dr. M. Lee O'Banion has resigned as health officer of San Benito County.——Dr. Joseph O. Chiapella was recently elected president of the Chico Health Council to succeed Dr. Newton T. Enloe.

Forest Officers Deputized Health Officials.—For the purpose of securing better sanitary protection on lands within the national forests, the California State Board of Health and the U. S. Forest Service have agreed to a cooperative plan, whereby the state board of health will deputize forest officers as sanitary inspectors with full power to enforce the state laws and to see that sanitary regulations are observed in the national forests by campers and others.

DISTRICT OF COLUMBIA

Prevention of Venereal Disease.—A measure for the detection, prevention, quarantine and treatment of venereal disease in the District of Columbia has been introduced in Congress by Representative Gilbert of Massachusetts. Examination of all suspected cases of infection by the health officer is provided with legal action in case persons so infected refuse examination. Physicians must report all cases within ten days for statistical purposes, it not being necessary for them to reveal the identity of their patients. Advertising of any remedy for treatment, cure or prevention of syphilis, gonorrhea or chancroid is made illegal in the District of Columbia.

GEORGIA

Physicians' Protective Association.—The physicians of Bartow County have planned to organize the Bartow County Physicians' Credit Association for their mutual protection.

Personal.—Dr. Andrew L. West, has resigned as city physician of Athens.—Dr. J. Whitridge Williams, professor of obstetrics, Johns Hopkins Medical School, Baltimore, delivered an address at a joint meeting of the Clarke County Medical Society and the Scientific Society of the University of Georgia, Athens, recently.

IDAHO

Personal.—Dr. Roscoe C. Ward has resigned as city physician of Boise. His successor is to be appointed later.

South Side Medical Society.—At the annual meeting of this organization, formerly known as the Pocatello County Medical Society, held recently at Twin Falls, the following officers were elected: president, Dr. Albert F. McClusky, and secretary-treasurer, Dr. Joseph N. Davis, Kimberly.

Reorganization of Medical Society.—At a meeting held at Boise, March 2, for the purpose of reorganizing the South Idaho District Medical Association, plans were made for the organization of the League for Conservation of Public Health in Idaho. Dr. Edward E. Maxey was elected temporary chairman, and Dr. Willis Frank Almond, temporary secretary of the association.

ILLINOIS

Licensure Investigation in Illinois.—The state's attorney of Illinois is making an investigation of charges that a ring of "fixers" is trafficking in physicians' licenses, pharmacists' certificates and other permits to practice the various professions. The report states that a vicious ring has been established which offers and succeeds in procuring licenses for those who are willing to pay the required fees. Governor Len Small has appointed a committee to investigate the charges. Following the launching of this investigation, it is reported that of 216 osteopaths and chiropractors who had filed their names for the examination which began March 28 only nineteen osteopaths and not one chiropractor appeared to take it.

State Health Department Notes.—In Mason City the school population is immune to smallpox. Dr. C. W. Cargill, district health superintendent, recently examined all schoolchildren in that community and secured the vaccination of all but two of those who were not already protected by successful vaccination. Altogether there were more than 500 children examined and more than 300 were vaccinated.——Dr. Isaac D. Rawlings, state director of public health, recently addressed two of Chicago's leading women's clubs on plans of the department of public health in reference to an infant welfare program, especially as it pertains to possible national funds that will probably be available under the provisions of the Sheppard-Towner maternity and child welfare act. Among other things, the director pointed out that the most pressing needs along these lines at the present time relate to more complete registration of births, a general campaign in favor of milk pasteurization and the establishment of better baby conferences and infant welfare stations. For the most part, these things are needed down state rather than in Chicago. As a result of the presentation of these facts, the two clubs concerned passed resolutions endorsing the plans and instructed the respective secretaries to so inform the Children's Bureau at Washington, D. C.

Chicago

Michigan Alumni Association to Hear Dr. Cabot.—The annual banquet of the Chicago Alumni Association of the University of Michigan will be held, April 7, at the Hotel La Salle. Dr. Hugh Cabot, dean of the medical faculty, University of Michigan, Ann Arbor, and President Marion Le Roy Burton, University of Michigan, will be two of the principal speakers of the evening.

Personal.—Dr. Charles A. Elliott, Chicago, delivered an address on "Disease of the Thyroid," at the meeting of the Galesburg Medical Society.——Damages of $15,000 were assessed against Dr. Franklin O. Carter, Chicago, March 9, in favor of Irvin Nilson for the loss of the sight of his eye through infection alleged to have been cause by an operation.——Drs. John Nuzum, Alton Ochsner and Louis Rudolph were kidnapped and robbed by motor bandits, March 17, and about $4,000 in jewelry and $100 in cash taken from them.——At a meeting of the Institute of Medicine of Chicago, March 24, Dr. Jacob Casson Geiger, U. S. Public Health Service, department of hygiene and bacteriology, University of Chicago, gave an illustrated lecture on "The Epidemiology of Botulism."——At the forty-eighth meeting of the Society of Internal Medicine, held March 27, under the presidency of Dr. Charles A. Elliot, Prof. George Neil Stewart, Western Reserve University, Cleveland, spoke on "The Adrenals, Fact and Theory."

INDIANA

Physician Acquitted.—A verdict of not guilty was returned March 15, by the jury in the case against Dr. Johnson P. Strouse, charged with performing an illegal operation, upon a patient, which, it is alleged, caused her death.

Typhoid Fever Compensable.—The appellate court of Indiana has decided that typhoid fever, contracted by an employee through drinking impure water furnished by the employer, is an "injury" by "accident arising out of and in the course of the employment" under the Workmen's Compensation Act, and as such is compensable.

Hospital News.—The contracts have been let for the erection of a new two-story addition to the Methodist Memorial Home, Lebanon.——Work will be started in May on the new Adams County Memorial Hospital to be erected at Decatur, at a cost of $100,000. The buildings will be ready for occupancy, January, 1923.——A new institution, which will be known as the Hansen Hubbard Old People's Home, will be erected at South Bend by the Evangelical Church. The plans call for an eighty-bed institution to cost approximately $150,000.——A new children's hospital will be erected at Rockville at a cost of $100,000.——A new hospital will be established in Indiana for the housing of all Indiana disabled veterans of the World War.

IOWA

Personal.—Dr. Ray Wycoff, Wapello, sailed January 7, for Porto Rico, where he will have charge of the Ryder Memorial Hospital in Humacao, under the direction of the American Missionary Association.

Psychopathic Hospital.—The new building at the State University of Iowa College of Medicine, Iowa City, has recently been opened to patients, with Dr. Samuel T. Orton as director. The institution was erected at a cost of $275,000, and will treat patients who are financially unable to pay for treatment at private institutions.

Annual Medical Clinic.—The State University of Iowa College of Medicine, Iowa City, will hold its annual clinic, April 11-12, under the direction of the faculty of the college of medicine. This clinic is not confined to alumni of the university. Prof. Anton J. Carlson, professor of physiology, University of Chicago, will give an address on endocrinology.

LOUSIANA

Leper Society.—The Louisiana Committee of the International Leper Society was formed in New Orleans, March 14, in response to a plea of W. M. Danner, secretary of the U. S. Leper Commission and of the American Missions to Lepers, an interdenominational church organization for social and religious work among leper colonies, which has branches all over the world.

New Health Boards.—The Jefferson Parish Board of Health was reorganized, March 8, with Drs. Marvin M. Odom, McDonoghville, and Dr. Joseph S. Kopfler, Kenner, as members of the board.——Drs. Joseph A. Estophina, L. A. Meraux and Dr. Louis A. Ducros have been elected members of the board of health of St. Bernard Parish.——Drs. Robert McG. Carruth and Maril O. Becnel, New Roads, and Dr. August B. Lacour, Batchelor, have been appointed members of the Pointe Coupee Board of Health.——Dr. Hubert S. Smith, Dr. Albert J. Meyer and Dr. Frank T. Gouaux have been elected to the board of health of Lafourche.

MARYLAND

Hospital News.—A new municipal hospital will be erected in the near future at Baltimore in the Hillen Road section, at a cost of $750,000.——A nurses' home will be erected at the University of Maryland, Baltimore, at a cost of $300,000, as the first unit of buildings to be constructed at an outlay of $1,250,000.——Bids have been received for the new building at the Union Memorial Hospital, Baltimore, which will cost approximately $1,000,000.——The contract has been awarded for a one-story addition to the Harriet Lane Home for Invalid Children, Baltimore, at a cost of $12,000.

MASSACHUSETTS

Maternity Bill Rejected.—The Senate refused to reconsider rejection of the bill to accept the Sheppard-Towner maternity bill by a vote of four to twenty-one it was recently announced.

Illegal Practitioner Sentenced.—It is reported that Wallace Baromas, Boston, charged with conspiracy to aid in unlawful practice of medicine in partnership with Don Carlos de Hinedesona, was sentenced to one month in the house of correction by Judge Logan recently. Hinedesona has disappeared. It was alleged that the men charged one patient $12.50 for a 10 cent bottle of vaseline and another $25 for a 75 cent belt.

New Veterans' Bureau.—A new subdistrict office of the U. S. Veterans' Bureau was opened at Lawrence, March 13, under the direction of Lieut. Edward Sirois. This local office will attend to most of the work of both Middlesex and Essex counties, and is part of the Boston district headquarters. Dr. Warren G. Pettingill, Haverhill, is in charge of the medical department, with Dr. Harold M. Allen as examiner. Consulting specialists will be: Dr. Charles G. Burgess, roentgen ray; Dr. Harry H. Nevers, surgery; Dr. Archibald McMillan, mental diseases; Dr. Benjamin E. Wood, Boston, orthopedics; Dr. Rolf C. Norris, heart and lung diseases, and Dr. William H. Merrill, eye, nose and throat.

Personal.—Dr. William G. Brousseau has been appointed city physician of Cambridge.——Dr. George E. McPherson, assistant state commissioner of mental diseases, has been appointed superintendent of the new Belchertown State School for Feeble-Minded Children.——Dr. Luigi P. Verde, Boston, has been made medical inspector in the city health department.——Dr. George Herbert Janes, Westfield, has been appointed a member of the board of registration in medicine.——Dr. James H. Means, Boston, delivered an address on "Clinical Types of Acidosis, with Reference to Their Symptoms and Treatment," before the medical section of the New York Academy of Medicine, March 21.

MICHIGAN

Hospital News.—It has been announced that the Children's Free Hospital, Detroit, and the Michigan Hospital School for Crippled Children, Farmington, will be merged. The combined assets of the two organizations, aggregating about $1,600,000, will be augmented by a gift of $1,000,000 from Mayor Couzens, recently announced. A new hospital will be built in the near future which will be thrown open to crippled children from every part of the state, and the old building of the Michigan Hospital for Crippled Children at Farmingham will be maintained as a convalescent home.——Construction work on the new Pennock Hospital at Hastings will be started in a few weeks. The institution will cost approximately $125,000.——A new hospital will be erected shortly at Ypsilanti.——Plans have been completed for the erection of a new tuberculosis hospital at Battle Creek.——The capacity of the Roosevelt Hospital, Camp Custer, will be enlarged at a cost of $40,000, from 120 patients to 420.

MISSOURI

Physician's Murderer Sentenced.—E. S. Jimmerson, who shot and killed Dr. Lloyd H. Brannon of Hayti, in September, has been found guilty of murder in the first degree and sentenced to life imprisonment.

Speakers' Bureau.—The St. Louis Medical Society has established a speakers' bureau, through which it is expected that lay organizations desiring physicians to lecture on public health questions may have a member of the society assigned to them, thus placing the responsibility for the publicity on the St. Louis Medical Society.

St. Louis Safety Council.—The health committee of the council has appointed the following physicians members of the advisory committee to assist in the work of educating the public in health protection: Drs. Walter H. Fuchs, Martin C. Woodruff, Hanau W. Loeb, Nathaniel Allison, Albert H. Hamel, Edward J. Goodwin, John Kennerly, J. P. Harper, E. Willette, and Major Louis P. H. Bahrenburg.

Jackson County Medical Society.—A prize of $10 has been offered to the member of the Jackson County Medical Society who supplies the best answer to the questions: Why should every ethical physician in Jackson County be a member of the Jackson County Medical Society? Why am I, an ethical physician, a member of the Jackson County Medical Society? It is intended that the answers shall be utilized for propaganda to attract new members to the society.

Personal.—Dr. Aden C. Vickrey, St. Louis, has been appointed superintendent of State Hospital No. 2, St. Joseph, to succeed Dr. Porter E. Williams, who has been transferred to the Missouri State Hospital No. 3, Nevada, to succeed Dr. Thomas B. M. Craig.——Dr. Louis Burlingham, St. Louis, has been elected president of the Missouri Hospital Association.——Dr. Herman E. Pearse, Kansas City, has been appointed a member of the city plan commission for a four-year term.——Dr. Mazyck P. Ravenel, Columbia, professor of medicine, University of Missouri School of Medicine, has been appointed chief associate examiner in public health for the National Board of Medical Examiners and member of the council for the district of St. Louis and also one of a committee representing the American Public Health Association, to cooperate with the organizers and directors of the proposed Gorgas Memorial Institute to be located in Panama.——Dr. Wenzel C. Gayler, St. Louis, who has been confined to his home and incapacitated for nearly a year by a severe attack of neuritis has recovered and has resumed his practice.

NEW JERSEY

Midwifery License Revoked.—On January 26, the board of medical examiners revoked the license to practice midwifery of Frances Wachauf, having found her guilty, it is reported, of the practice of criminal abortion.

Hospital News.—A country home for the care and treatment of tuberculous patients will be erected at a cost of $25,000 by the Trades Union Anti-Tuberculosis Association of Newark.——Plans have been prepared for enlarging and improving St. Barnard's Hospital, Newark, at a cost of $115,000.

Illegal Practitioners Fined. — Vincent Napoliello and Giuseppe Chiarmida recently pleaded guilty to charges of practicing medicine without a license and were fined $200 each.——On Feb. 28, 1922, William Marsden, a chiropractor of Atlantic City, paid a penalty of $200 for violation of the medical practice act.

NEW YORK

Plattsburg to Have Laboratory.—David Merkel of Plattsburg has presented the city with $1,500 to be used for the establishment of a public health laboratory. The gift is to be a memorial to the donor's parents, Isaac and Jeanette Merkel. The laboratory will be situated at the Champlain Valley Hospital.

Investigation of Hospitals Commission.—At a meeting of the Erie County Medical Society, held recently at Buffalo, a resolution was adopted commending the investigation of the board of managers of the city hospitals and dispensaries. It was stated that after the investigation the society will be ready to aid in the reorganization of the present methods of caring for the sick poor.

Radio to Carry Health Lectures.—Dr. Hermann M. Biggs, state commissioner of health, announces that he will talk by wireless twice a week, beginning March 24, from a station at the General Electric plant in Schenectady. The health department officials believe that the wireless will be a useful medium in disseminating the best possible medical advice and counsel on health subjects to rural communities.

New York City

Harvey Society Lecture.—Prof. Raymond Pearl, professor of biometry and vital statistics, Johns Hopkins School of Hygiene and Public Health, Baltimore, will deliver the ninth Harvey Society Lecture at the New York Academy of Medicine, April 8, on the subject of "The Interrelations of the Biometric and Experimental Methods of Acquiring Knowledge; with Special Reference to the Problem of the Duration of Life."

NORTH CAROLINA

Personal.—Dr. John W. White has been appointed health officer for Wilkes County.

North Carolina Hospital Association.—At the annual meeting of the organization held in High Point, January 31, under the presidency of Dr. John T. Burrus, the following officers were elected: Dr. John A. Williams, Greensboro, president, and secretary-treasurer, Dr. James R. Alexander, Charlotte.

Social Service Conference.—The annual meeting of the state welfare workers was held at Greensboro, March 28-30, under the direction of Dr. Watson S. Rankin, who discussed "Revelations of the Draft Act and Their Meaning." Miss Jane Addams, Chicago, gave an address on "America's Relations to World Problems."

OHIO

Public Health Meetings.—A series of meetings on the subject of public health are being conducted in Urbana under the auspices of the Civic League. Dr. Wright, Columbus, delivered an address at the first meeting and showed the film "One Scar Too Many," and lectures and demonstrations on home nursing were conducted by members of the Red Cross.

Hospital News.—A site has been purchased by the state hygiene department at Warren, where a new hospital will be erected at a cost of $100,000.——Plans are being executed for the erection of a new hospital at New Lexington. Work will be started in a few weeks.——A new site will be purchased by the Westmoreland Hospital Association, Greensburg, for the erection of a modern home for nurses at a cost of $10,000.——A new hospital, for the treatment of cancer, will be erected in Columbus by Dr. Charles F. Bowner.

OREGON

Personal.—Dr. Walter E. Hempstead has been appointed a member of the pension examining board.——Dr. Esther Pohl Lovejoy, former city health officer of Portland, has recently returned from Europe, where she has been doing medical work at hospitals in Turkey, Armenia and Russia.——Dr. James K. Locke, Portland, has been reappointed by the governor as a member of the state board of medical examiners.——Dr. Ray W. Matson, Portland, has returned to that city after more than a year in France and Austria.

PENNSYLVANIA

Personal.—Dr. John W. Eckfeldt, Philadelphia, was tendered a reception on the fiftieth anniversary of his practice of medicine in the city and was the recipient of a grandfather's clock and $100 in gold.——Dr. Carolina S. R. Engelhardt will resign as superintendent of the Lansdale Sanatorium.

New Health Organization.—Health directors and members of eleven counties held a meeting, March 16, at Pittsburgh, under the presidency of Dr. Edward Martin, state health commissioner, to form a new organization of associated health boards which will be known as District Board of Health Association No. 4. Drs. Israel B. Reed, Pittsburgh, and Albert J. Bearer, New Kensington, were elected vice presidents of the association. Dr. Carey J. Vaux, director of the department of public health, Pittsburgh, delivered an address and Dr. J. Bruce McCreery spoke on "Diphtheria."

Philadelphia

Society News.—The following elections are announced: Philadelphia Neurological Society: Dr. Charles H. Frazier, president, and Dr. Sherman F. Gilpin, treasurer; Academy of Surgery: Dr. John H. Jopson, president, and John S. Rodman, secretary; Philadelphia Laryngological Society: Dr. Robert F. Ridpath, president, and Dr. Henry A. Laessle, secretary; Section on Ophthalmology, College of Physicians: Dr. McCluney Radcliffe, chairman, and Dr. Charles R. Heed, clerk; Urological Society: Dr. William H. Mackinney, president, and Dr. Sterling W. Moorhead, secretary; Academy of Medicine and Allied Sciences: Dr. William Harry Barnes, president, and Dr. John P. Turner, secretary; Association for the Prevention and Relief of Heart Disease: Dr. Joseph Sailer, president, and Dr. Samuel Calvin Smith, secretary.

SOUTH CAROLINA

Physician Acquitted.—It is reported that Dr. J. M. Manning, mayor of Durham, was found not guilty by a jury in the federal court recently on a charge of violating the Harrison Narcotic Law.

VERMONT

Vermont Hospital Association. — This association was organized in December at a meeting in Burlington. Dr. T. S. Brown, superintendent of the Mary Fletcher Hospital, Burlington, was elected vice president of the organization, and Dr. T. A. McCormick, superintendent of St. Albans Hospital, St. Albans, was elected to the executive committee. The next meeting will be held in September.

VIRGINIA

Appropriation for Medical School.—An appropriation of $30,000 a year additional has been adopted by the Senate, for the Medical College of Virginia, Richmond, to meet the financial crisis facing the institution, since the failure of the medical merger scheme.

WISCONSIN

Honor for Physician.—At a special audience granted by the King of Italy, Dr. Guiseppe A. Germano, Kenosha, was named a Knight of the Crown of Italy for services rendered during the World War.

Society Changes Name.—At a meeting of the Milwaukee Medical Society, held March 14, it was decided to change the name of the society to Milwaukee Academy of Medicine, owing to confusion of the Milwaukee society with the Milwaukee County Medical Society.

Personal.—Dr. Thomas J. Heldt, chemical director of Resthaven, U. S. Public Health Service Hospital No. 37, Waukesha, has resigned to accept a position with the National Committee on Mental Diseases.——Dr. Clarence J. Kenney, epidemiologist of the Milwaukee health department, has resigned, effective April 1.

CANADA

New Red Cross Journal.—The first issue of the *Canadian Red Cross* has recently been published by the Canadian Red Cross Society. The journal will be published monthly.

Hospital News.—A new wing will be added to the Grace Hospital, Toronto, which will give a capacity of two seven-room wards.——Construction work will soon be started on the war memorial hospital to be erected at Wallaceburg, Ont., at a cost of $50,000.

GENERAL

American Association of Industrial Physicians and Surgeons.—The annual meeting of the association will be held at St. Louis, May 22-23, the same week as that of the American Medical Association, under the presidency of Dr. Clyde E. Ford.

Proposed Legislation for Free Medical Treatment to Veterans.—Medical treatment by the Army, Navy or Public Health Service free of cost is given any person honorably discharged from the Army, Navy, National Guard, Marine Corps, Coast Guard, Public Health Service and Coast and Geodetic Survey as a result of injuries, sickness or wounds incident to their service for the country during any war by a bill introduced in Congress by Representative Crago.

Medical and Surgical Section of the American Prison Association.—The program for the Fifty-Second Congress of the American Prison Association, which is to be held in Detroit, October 19-24 next, will include meetings of a medical and surgical section. This section has been established to discuss the importance of the medical service in corrective institutions. The arranging of the program is in the hands of an executive committee, of which Dr. F. L. Dunham, 1111 North Eutaw Street, Baltimore, is the chairman.

Casselberry Prize Fund.—The Council of the American Laryngological Association reports that from this fund the sum of over $500 has accumulated. This amount is available for encouraging advancement in the art and science of laryngology and rhinology and the sum stated is now available in part or as a whole for a prize award or decoration, or for the expense of original investigation or research in the fields indicated. Those interested in securing further particulars should apply to Dr. Norval H. Pierce, 31 East Washington Street, Chicago.

British Medical Association to Discuss Social Aspects of Alcohol.—The section on medical sociology of the British Medical Association is arranging to present, at the meeting in Glasgow, a discussion on the use of alcohol in relation to lunacy, crime, industrial efficiency and youth. The officers of the section are anxious to have an American physician who is capable of discussing these problems present at the session. The president of the section states that arrangements may be made for the entertainment of such person while in Glasgow. Those interested may communicate with The Journal.

Survey of Supply of Medicinal Whisky.—State prohibition directors hereafter will have strict supervision of druggists' sales of whisky on physicians' prescriptions. Complaints have been pouring into the Internal Revenue Office from all parts of the country alleging that druggists in certain localities are demanding high prices for "doctored" whisky sold for medicinal purposes. State prohibition directors have been instructed to inspect the liquor business of permit holders and to make an analysis of their sales. Some of the complaints charge that it is a common practice for a certain type of druggist to sell for medicinal purposes liquors made out of grain alcohol and caramel coloring.

Medical Fellowships.—It has been announced by the National Research Council that fellowships in medicine have been established for the purpose of increasing the supply of qualified teachers in medicine in both clinical and laboratory subjects and in both curative and preventive aspects. These fellowships are supported by appropriations of the Rockefeller Foundation and the General Education Board amounting in total to $100,000 a year for five years. Those receiving awards will be known as Fellows in Medicine of the National Research Council. To qualify for appointment as a fellow, a candidate must have the degree of doctor of medicine or doctor of philosophy from an approved university, or preparation equivalent to that represented by one of these degrees. The fellowship is open to both sexes, but is limited to citizens of the United States and Canada. Fellows will be at liberty to choose the institution or universities in which they will work as well as the men under whose direction they will carry on their researches, subject to the approval of the board, which will be known as the Medical Fellowship Board of the National Research Council. Appointments are to be made for a period of twelve months, beginning at any time in the year, with an allowance of six weeks for vacation. The time may be extended, however, if in the judgment of the board the work which the fellow has done justifies it. Stipends are intended to enable the individual to live comfortably while carrying on his work.

Bequests and Donations.—The following bequests and donations have recently been announced:

Silver Cross Hospital, Joliet, Ill., the income from a $100,000 trust fund, and the Mary E. Lambert Home for Nurses, Joliet, the income from a $100,000 trust fund, by the will of Colonel J. Lambert, Joliet.

Grace Hospital, Detroit, a rest home for nurses on Elba Island, refitted at a cost of $40,000, to accommodate forty visitors, by Mrs. Henry P. Joy.

The Woman's Hospital, New York, $15,000, by the will of Mrs. Rosina E. Hoyt.

The Nassau Hospital Association, Nassau, L. I.; New York Infirmary for Women and Children; the New York Eye and Ear Infirmary; the Knickerbocker Hospital, and the New York University Dispensary, each $10,000, by the will of James H. Ottley.

General Memorial Hospital, New York City, $10,000; Manhattan Eye, Ear and Throat Hospital, $5,000; Woman's Hospital of the State of New York, $10,000, by the will of Jonas M. Libbey. The residue of his estate goes to Columbia University, as the "Jonas M. Libbey Fund" for research in biologic and pathologic chemistry, electrochemistry and electrophysics.

Georgia Infirmary, Savannah, $10,000; Telfair Hospital, Savannah, $2,000; by the will of Mrs. Louisa Porter Minis, of Savannah.

Good Samaritan Hospital, for negroes, Charlotte, a gift of $5,000, by Mr. J. B. Duke, Charlotte.

Wayne County Medical Society, Michigan, $3,000, by the will of Dr. Henry Cleland, which will be known as the "Henry A. Cleland Endowment Fund."

Mount Sinai Hospital, $2,500, and the Montefiore Hospital, New York City, $1,000, by the will of Leon J. Bamberger.

Women's Southern Homeopathic Hospital, Philadelphia, $500, by the will of James R. Maxwell.

University of Pennsylvania, Philadelphia, $275, by anonymous donor, will be added to the General Fund.

The Sturgis Convalescent Research Fund, an unspecified sum for investigation in heart disease, and nervous and mental disorders, by Mr. Frank Sturgis, the founder.

LATIN AMERICA

Personal.—Dr. José Arce, dean of the University of Buenos Aires, has returned from a trip abroad.——The *Revista Médica Veracruzana* mentions the return to Vera Cruz from New York of Dr. Gabriel Garzón Cossa. He has been taking a graduate course on parasitology at the Rockefeller Institute, and is to have charge of the course on parasitology in the Hygiene Institute at Vera Cruz under the auspices of the national public health service.

FOREIGN

Honor for Physician.—Dr. F. J. Paley, Hove, England, has been created a knight of the Papal Order of St. Gregory, in recognition of his work as a Catholic medical practitioner.

Robert Campbell Memorial.—The first memorial oration was delivered by Dr. Thomas Sinclair on "Surgery of the Blood," in February, at Belfast, with Sir John Alton Browne in the chair. Approximately $4,000 has already been subscribed to the fund.

Tribute to a Medical Journalist.—A banquet was offered in Madrid, by a number of medical admirers and friends, to Dr. Pedro Zuloaga of Valladolid, editor of *La Clínica Castellana* and the *Revista Española de Obstetricia y Ginecología.* Speeches were made by Drs. Ramos, Soler, Elices, Calatayud, Recaséns, and finally, Dr. Zuloaga.

Cancer Research.—Sir William Veno of England, who originally offered £10,000 for the discovery of a cure for cancer, has altered the conditions regarding the offer and will give £1,000 a year for ten years for cancer research.——Lord Atholstan of Canada, who recently offered $100,000 for the discovery of a cure, will also donate a like sum for research.

Irish Medical Schools and Graduates' Association.—The forty-fourth annual meeting of the association was held, March 16, in London, under the presidency of Major-General W. Kenny. The Arnott gold medal of the association was presented to Lieut.-Col. Robert McCarrison, M.D. Dr. J. A. Macdonald was elected president for the ensuing year.

American Woman Physician Aids Chinese.—It is reported from Shanghai, China, that Dr. Vivia B. Appleton, instructor in pediatrics, University of California Medical School, San Francisco, has recently returned to that city after having established a children's clinic in Changsha, Province of Hunan.

New Medical Society.—It has been announced by the New York office of the Near East Relief that Dr. M. E. Elliott, medical director of the Near East Relief Women's Hospital in Erivan, Armenia, has organized a medical society in that city, consisting of the twelve local physicians. Dr. Elliott has started a medical library in connection with the organization, containing Russian, French and English books.

Calcutta School of Tropical Medicine.—The governor of Bengal laid the foundation stone of the new School of Tropical Medicine at Calcutta, February 14. The Indian government donated $195,000 for the site and will contribute toward the upkeep of the institution. Owing to the prevalence of tropical diseases in India, the work of the laboratory will be chiefly the investigation of causes of tropical diseases in an effort to discover more accurate methods of diagnosis and more advantageous process of treatment.

South African Medical Societies.—At the annual meeting of the Durban Medical Society the following officers were elected: president, Dr. D. Mackenzie, and secretary, Dr. D. Murray.——At the annual meeting of the Natal Coastal Branch of the British Medical Association Dr. Copley was elected president and Dr. Radford was elected secretary.——The Witwatersrand Branch of the British Medical Association recently held its annual meeting and elected Dr. Charles Porter, president, and Dr. F. K. te Water, secretary.

University News.—An annual award of a gold medal, to be known as the William Hey Medal in Medicine and Surgery, has been donated to the University of Leeds by Sir Berkeley Moynihan. This award is in commemoration of Dr. Hey's work and will be given to the best student of the year in medicine and surgery.——Professor H. R. Dean has been appointed to the university chair of bacteriology at University College Hospital Medical School, London. Dr. Dean was formerly professor of pathology and pathologic anatomy, University of Manchester, and Horace Dobell lecturer at the Royal College of Physicians, London.

Spanish Congress on Public Health Reorganization.—Dr. Pedro Zuloaga, editor of the *Revista Española de Obstetricia y Ginecología,* recently called attention to the need of holding a national congress on sanitary reorganization to consider obvious deficiencies in public health administration. The idea has met with approval and an organizing committee has already published the call to hold this congress as soon as possible. The officers are: Dr. Verdes Montenegro, president; Dr. B. Fortacín, vice president; Dr. A. Piga, second vice president; Dr. N. Calvín, accountant; Dr. Vital Aza, treasurer; Dr. Ramos Acosta, secretary, and Dr. R. Ramos, legal adviser.

Public Health in China.—A meeting was held in Shanghai in December for the purpose of organizing the National Health Association of China, under the direction of Dr. S. M. Woo. A program has been arranged which will include: (1) local health demonstrations; (2) a "health museum"; (3) a "health brigade," which will be established to answer epidemic emergency calls; (4) education of the young in the principles of health, and (5) research and information activities. The public health movement has for some time been promoted by the Rockefeller Foundation, the China Medical Board and the Council on Health Education, of which Dr. W. W. Peter is the American secretary.

Spanish Societies.—The Spanish Surgical Academy has appointed the following officers: president, Dr. J. S. Covisa; first vice president, Dr. M. Arredondo; second vice president, Dr. P. Cifuentes; secretary general, Dr. S. Carro; first secretary, Dr. S. Alvasán; second secretary, Dr. F. G. Triviño; treasurer, Dr. B. Castresana; accountant, Dr. A. Piga, and librarian, Dr. J. Sanchíz Banús.——The Spanish Gynecological Society has appointed the following officers: president, Dr. J. Bourkaïb; vice president, Dr. J. Botella; second vice president, Dr. L. Recasens; secretary general, Dr. I. Moreno; recording secretary, Dr. J. Torre Blanco; vice secretary, Dr. F. Luque; librarian, Dr. J. de la Muela, and treasurer, Dr. A. García López.

The Campaign Against Cancer at Lyons.—The *Lyon Médical* gives an account of the large public conference organized at Lyons by the Ligue Franco-Anglo-Américaine contre le cancer. It seems that the cancer death rate at Lyons is higher than elsewhere in the country, being 150 per hundred thousand inhabitants, while the general average for the country is 92. A branch of the Ligue was founded at Lyons, and an active campaign outlined. A donation of 10,000 francs from the central headquarters of the Ligue was followed by other donations from individuals, to a total of 52,000 francs. Among the speakers were M. Justin Godart, Prof. H. Hartmann of Paris and Bérard of Lyons, besides M. Lebret, secretary of the Ligue.

The Bretonneau Centennial.—The medical school of Tours, France, is planning to celebrate, June 24 to 26, the centennial of Pierre Bretonneau's teaching of specificity. He clearly stated the doctrine of specificity (germ theory), having noticed that the liquid secreted by the cantharis and other insects induced different kinds of lesions on the skin, and always specific for each. He also first described diphtheria and gave it its name, and differentiated typhoid, but his name for typhoid, dothienenteritis, was soon dropped. He was not connected with any university, but ten young men studied with him at the public hospital at Tours, and his correspondence later with two of them, Velpeau and Trousseau, is most interesting. The celebration is in charge of Dr. Dubreuil-Chambardel, Ecole de Médecine, Tours.

The German Council on Pharmacy and Chemistry.—The Journal mentioned last year the efforts of the profession in Germany to inaugurate work along the lines of the Council on Pharmacy and Chemistry of the American Medical Association and the somewhat similar body in the Netherlands. The Arzneimittel-Kommission, as it is called, has not been able to make much headway on account of lack of funds. At a recent meeting of the commission, the history of the efforts in this line was reviewed and physicians in general were appealed to for funds, Holste stating that if each physician would give 2 marks, each year, the work could be placed on a stable basis. He emphasized the advantages for the profession of such an institution, and stated that a number of communications reporting the results of investigations are now ready for publication in the medical journals. The commission is an offshoot of the German Gesellschaft für Innere Medizin. The seven members present at the meeting were Gottlieb, Heffter, Penzoldt, Romberg, Spatz and Stintzing, besides Holste.

Deaths in Other Countries

Dr. **Alfred Hill**, medical officer of health of Birmingham, England, died February 22, aged 95.——Dr. **Karl Schleich**, Berlin, surgeon, a pioneer in local anesthesia in 1894, aged 63.——Dr. **Bertram H. Kingsford**, England, died in January.——Lieut.-Col. **G. H. Le Mottée**, R. A. M. C., formerly director of the Military Hospital, Quetta, India, died in Guernsey, Channel Islands, January 18.——Dr. **Charles Drage**, physician to the Duke of Wellington, died recently, aged 97.——Dr. **George Wild**, justice of the peace, died recently in Bootle, England.——Dr. **Ossian Schauman**, professor of internal medicine at the University of Helsingfors, and a frequent contributor to medical literature, especially on diseases of the blood. A Festskrift had been compiled to present to him on his sixtieth birthday, but he died less than a month before.——Dr. **Barboza Romeu, Jr.**, of Rio de Janeiro.——Dr. **J. F. J. Bloemen** of Tilburg, a prominent physician in his region of the Netherlands.——Dr. **E. Duval**, professor of surgery at the medical school at Rouen.——Dr. **H. Lindner** of Leipzig, aged 70.——Dr. **J. Heitzmann** of Vienna, co-author of the Atlas of Anatomy, aged 74.——Dr. **J. Saphier** of Munich, a pioneer in dermatoscopy, aged 37.——Dr. **W. Rüdin**, professor of gynecology at the University of Rostock, aged 61.——Dr. **P. Starke**, long in charge of part of the work of the Leipzig League.——Dr. **G. Pardo** of Parma, a member of the Nansen medical mission to Russia, succumbed recently to typhus.

CORRECTIONS

Aid for Pharmaceutical Research.—In The Journal, March 18, a notice was inserted to the effect that the American Pharmaceutical Association had established a research fund of $360,000. The amount was in error and should have been $360.

Medical Education.—In The Journal of March 18, page 821, Dr. N. R. Perkins is reported as stating that there is a Class A school in Massachusetts that fights every attempt made to enact legislation requiring hospital internship as a preliminary requirement for registration. Dr. Perkins states that this is incorrect and that what he did say was: "We have a Class C school which fights everything of that nature in the legislature."

Government Services

The Army Medical Bulletin

The publication formerly known as the *Medical-Military Review* is now to be issued in printed form under the title *The Army Medical Bulletin.* It is to be issued through the Medical Field Service School at Carlisle Barracks, Pa., and will not be issued regularly as was the former publication, but occasionally, as it becomes necessary to convey the material to medical officers.

Proposed Investigation of Veterans' Bureau

Representative Larsen of Georgia has presented a bill to Congress providing for an investigation by seven members of the House of Representatives of the operation of the U. S. Veterans' Bureau. There is a provision in the bill providing for an investigation into the increase of the personnel of the U. S. Public Health Service due to care and treatment of disabled veterans of the World War.

Bill for Marine Hospital at San Francisco

Senator Shortridge of California has presented a bill to the Senate providing for the erection of a marine hospital at San Francisco. The capacity of the proposed institution will be 300 beds. To cover the cost of obtaining the site and completing the buildings, $1,500,000 is appropriated.

Request Transfer of Hospitals to Veterans' Bureau

President Harding has been requested by the U. S. Veterans' Bureau to issue an executive order transferring about sixty hospitals caring for approximately 23,000 disabled soldiers from the U. S. Public Health Service to the jurisdiction of the U. S. Veterans' Bureau. The request was made in the interest of efficiency and economy, according to Director Forbes, that the Veterans' Bureau might have more close supervision and control of the patients for whom it is responsible. The matter was recently the subject of a conference with the national executive at the White House. No further legislation, it is maintained, will be necessary for a complete transfer of the hospitals.

Medical Training for Veterans

The Rehabilitation Division of the Veterans' Bureau announces that courses in medicine for trainees of the bureau, will, after March 18, be restricted to schools classified by the American Medical Association as Class "A" institutions; and courses in dentistry and pharmacy will be given only in reputable schools of approved standards. Before courses are prescribed in medicine, dentistry or pharmacy, the case will be submitted to a medical officer of the bureau for an opinion as to the proper classification of the school selected, and the medical officer will also signify the feasibility of the course outlined. Only those veterans who possess the necessary physical and educational qualifications will be authorized to take such courses.

Appropriations for Army Medical Department

The regular appropriations bill for the War Department was presented to the House of Representatives this week. It contains provisions for the operation of the Medical Department of the Army for the next fiscal year. The sum of $529,360 is appropriated for the repair of army hospitals, $213,520 for the Surgeon-General's Office, $7,500 for the Army Medical museum, $10,000 for the Surgeon-General's Library, $4,800 for the Medical and Surgical History of the War, $35,000 for furnishing artificial limbs for disabled soldiers, and $500,000 for sanitation, quarantine and medical service in the Panama Canal Zone; $250,000 is appropriated for pay of officers of the Reserve Corps of the Army, but a provision is included limiting the medical department to a single officer. This officer is Brig.-Gen. Charles E. Sawyer, the president's private physician. Additional officers and nurses of the Medical Reserve Corps may be called into active service to care for disabled war veterans, but their pay and allowances must come from the funds of the U. S. Veterans' Bureau.

Foreign Letters

PARIS

(From Our Regular Correspondent)

March 3, 1922.

The Physician's Responsibility

The civil tribunal of Havre was recently obliged to render a decision on a court action taken against a physician for two causes: (1) An error in diagnosis that caused unnecessary expenses in traveling and treatment, and (2) the thoughtless issuance of a certificate affirming the illness of a married woman which entailed a divorce action when the certificate became known to the husband. The tribunal rejected the first claim on the ground that an error in diagnosis cannot, in principle, entail the physician's professional responsibility if it cannot be proved that the error is due to his complete ignorance of medicine or to lack of knowledge of the elementary principles of prudence. The tribunal, however, took into consideration the issuance of the certificate and stated the motive of its judgment thus:

> The physician committed a fault in delivering a certificate that was demanded from him on account of his competence, even though he can attest the truth of the facts which came under his personal supervision, without inquiring as to the purpose for which the certificate has been asked and the qualification of the person asking for it. He must make inquiries to discover whether the document that he is about to deliver will not be used for blackmail, illegal internment, etc., if, finally, it will not be the cause of discords and troubles in a family or household, considering, also, that the party was married and that her husband was at the front. Under such conditions, the physician, who should have been aware of these facts, should necessarily have been the more cautious as the circumstances made the origin of the disease more suspicious; he should have tried to seek the motives that the woman had in mind in asking a certificate and realize the consequences that might result on the issuance of the document. By delivering a certificate to a married woman without the knowledge of her husband, the contents of which could cause discord between husband and wife, as is the case in this particular instance, the physician committed a fault for which he owes compensation.

Consequently, the tribunal condemned the physician to pay damages for the injury done. This case emphasizes the need for prudence in issuing a medical certificate and for securing information regarding the motives and ascertaining what the party intends to do with the certificate.

Award of a Prize to Dr. Charles Vaillant

The Academy of Moral and Political Sciences has awarded the Audiffred prize of 15,000 francs, for acts of self-sacrifice, to Dr. Charles Vaillant, director of the radiographic service at the Lariboisière hospital.

The Sale of Autovaccine by Druggists

The manufacture of vaccines and serums is regulated in France by the law of April 25, 1895, restricting their manufacture to laboratories especially authorized by the government and on advice from the Academy of Medicine. Taking this law as a basis, numerous druggists have expressed doubt as to their right to prepare autovaccine in their own laboratories. The question has been solved by the direction of public welfare and hygiene of the ministry of the interior. The law of 1895 aims at stock preparations that can be found in drug stores, hospitals, etc. The law applies as well to serums and vaccines obtained by sterilization or attenuation of cultures, or so-called stock vaccines. But this cannot possibly apply to autovaccine which, in each particular case, has to be prepared on the order of a physician, who furnishes the pathologic products from which the micro-organism shall be isolated. Consequently, autovaccines must be considered as preparations made by a bacteriologist, under the physician's supervision, in whom the physician has full confidence and whose services he makes use of under his own responsibility. Autovaccines are not sold in the ordinary sense of the word;

they are specially prepared for a certain patient and should not fall under the law of April 25, 1895.

The Centennial of General Paresis

As mentioned in a previous letter (The Journal, Sept. 3, 1921, p. 801), the three societies of mental medicine of Paris have decided to organize in Paris a meeting of psychiatry to commemorate the centennial of the thesis in which Bayle, in 1822, described for the first time the clinical picture of general paresis. The committee on organization has decided to avail itself of the presence in Paris of numerous colleagues who will be present at the session of the Société médico-psychologique and at the general assembly of the Association des aliénistes de France, May 29, 1922, and to devote May 30 and 31 to the celebration of the centennial. Under the presidency of Dr. Toulouse, president for 1922 of the Société médico-psychologique, the two days will be devoted to a review of the history and present conception of Bayle's disease. The meeting will be international, and neuropsychiatrists from allied and friendly nations, as well as French alienists and neurologists, will be invited to participate. The following communications will be presented to serve as the basis of discussions: (1) Bayle's predecessors, Dr. Laignel-Lavastine and Vinchon; (2) Bayle and the works of the school of Charenton, Dr. Semelaigne; (3) general paresis after Bayle; dual personality in general paresis; insanity in paresis; dementia in paresis; the works of the Salpêtrière school, Dr. Arnaud; (4) present conceptions of general paresis (etiology, Dr. Pactet; pathologic anatomy, Dr. Lhermitte; clinical and medicolegal study, Dr. Réné Charpentier); (5) treatment and assistance, Dr. Truelle. The membership fees of 40 francs may be sent to Dr. Raymond Mallet, treasurer, 284, Boulevard Saint-Germain, Paris.

Visit of French Physicians to Spain

To acknowledge the visits made in France by Spanish physicians during the war and since 1919, French physicians will journey to Spain in April, under the auspices of the Franco-Spanish committee and the schools of medicine of Bordeaux, Lyons, Montpellier, Paris and Strasbourg. The itinerary will include the cities of Barcelona, Valencia, Madrid, Toledo, Valladolid, Burgos and San Sebastian.

LONDON

(From Our Regular Correspondent)

March 13, 1922.

The Report of the Radium Institute

In the annual report of the Radium Institute, the medical superintendent, Mr. A. E. Hayward Pinch, reviews the work done since its foundation, which covers a period of rather more than ten years. He is thus able to furnish an estimate of the therapeutic value of radium based on wide experience. During the period, 7,750 patients have been dealt with and nearly 100,000 treatments administered. He divides the cases into four classes: (1) Those in which cure, either complete in the case of the nonmalignant, or apparent in the case of malignant disease, may be confidently expected. This class includes chronic eczema, seborrheic eczema, lichenification, cavernous nevi, keloids, papillomas, keratomas, corns, rodent ulcer, lymphosarcoma, and sarcoma of the nasopharynx. (2) Those in which great benefit may be expected: psoriasis, xanthelasma, xeroderma pigmentosum, Fordyce's disease, leukoplakia, capillary nevi, spring catarrh, lupus erythematosus and vulgaris, tuberculous adenitis, vicious cicatrices, Dupuytren's contraction (early), exophthalmic goiter, parenchymatous goiter, splenic and lymphatic leukocythemia, lymphadenoma, mediastinal tumors, epithelioma of the skin, cornea, vagina and urethra (female), carcinoma of the breast, uterus, bladder, prostate and thyroid, sarcoma (excluding endosteal), endothelioma, angioneurotic edema, and arthritis deformans (early infective cases). (3) Those in which the result is doubtful, some cases responding very well while similar ones fail to show any improvement: pruritus, neuralgia, neuritis, epithelioma of tongue, mouth, fauces, larynx and esophagus, carcinoma of the stomach, intestine and rectum, myeloma, melanoma and glycosuria. (4) Those in which radium is practically useless: Dupuytren's contraction (late), kraurosis vulvae, adenomatous goiter, osteitis deformans, acromegaly, cysts, lipomas, enchondromas, osteomas, endosteal sarcomas, syphilis, locomotor ataxia, disseminated sclerosis, pyomyelitis and paralysis agitans.

By far the greater number of patients applying to the Radium Institute suffer from malignant disease, which usually is advanced and inoperable or has recurred after operation with no possibility of further surgical interference. To use the term "cure" when discussing the radium treatment of such cases would be unwarrantable; but results have been obtained in the arrest of the progress of the disease which improve the general health and comfort to a degree that cannot be excelled, and is rarely equaled, by any known medical or surgical measures. At present the institute has records of many patients suffering from recurrent inoperable malignant disease, who first presented themselves for treatment seven or ten years ago, and who now lead useful, comparatively healthy lives, the disease having been rendered quiescent by the treatment.

With increasing experience it has been possible to augment the dosage greatly. In the early days of the institute, a dose of 3,000 mg. hours was considered large; now it is common to give from 20,000 to 30,000 mg. hours, and, if judiciously administered, this entails little systemic disturbance. Considerable advances have been made in the treatment of such conditions as carcinoma of the prostate, bladder and uterus, mediastinal tumors, splenic and lymphatic leukocythemia, lymphadenoma and tuberculous adenitis. Results are now obtained far more striking than were at first anticipated. The chief problem to be solved is the treatment of deep-seated growths to which there is no adequate approach by the natural channels; but improvements in technic are being devised from time to time which are slowly but steadily lessening the difficulty. For widespread conditions, roentgen rays are considered preferable to radium, as in generalized psoriasis, the early stages of cancer *en cuirasse*, generalized infection of the peritoneum, and cystic disease of the ovaries. For these conditions an enormous amount of radium, mounted on numerous applicators, would be necessary to irradiate the whole area, while it can be easily done with a roentgen-ray tube. On the other hand, to give an intense dose over a small area, as in rodent ulcer, small superficial epitheliomas or recurrent nodules after excision of the breast for carcinoma, radium should be used, as by means of emanation applicators a powerful dose may be given to a very small area. In certain situations, such as the cavity of the uterus, bladder, larynx, esophagus, stomach and rectum, it is almost impossible to give an adequate dose of roentgen rays, but radium can be effectively used. Though physicists consider the gamma rays of radium analogous to the hardest cathodal rays of a roentgen-ray tube, clinical experience tends to show that there must be some difference, as frequently cases of lichenification, rodent ulcer and lupus vulgaris do not respond to roentgen rays but yield promptly to radium.

New Medical School in Africa

The Sudan government has decided to start on the building of premises for a school of medicine at Khartoum (attached to the department of education) to be organized under the

Kitchener memorial scheme. The aim of the school is to train students for the medical corps of the Egyptian army and the Sudan medical department, and as general practitioners. Hitherto the Sudan has relied largely on Egypt and Syria for physicians, and it is felt that the new school will supply a much felt want. It is hoped that the building will be completed next year.

Dr. Benjamin Moore

Benjamin Moore, D.Sc., F.R.S., professor of biochemistry in the University of Oxford, has died at 55 from heart failure following influenza. Educated at Belfast and University College, London, where he worked as a pupil of Sir William Ramsay in the chemistry department; he became a teacher of physiology in the medical school of Yale College, New Haven. Returning to London he was appointed lecturer on physiology in the medical school of Charing Cross Hospital. One of the pioneers of biochemistry, to which he devoted most of his energies, he was appointed to the first chair in that subject established in this country, the Johnston chair in the University of Liverpool. In 1920 he was appointed professor of biochemistry in the University of Oxford. He was one of the founders of the *Biochemical Journal.* His scientific work was of much importance. He investigated photochemical synthesis, showing how organic compounds were formed from inorganic in the presence of inorganic colloids. He proved that fresh water and marine algae, without the aid of bacteria, can in summer fix nitrogen from the atmosphere. He brought forward evidence that the active oxygen of fresh country air is not, as had been supposed, ozone but nitrogen peroxid, probably due to ultraviolet light causing the oxygen and nitrogen to unite. His last work was entitled "Biochemistry, a Study of the Origin, Reactions and Equilibria of Living Matter." He was also much interested in medico-sociological subjects, and wrote a book entitled "The Dawn of the Health Age," which attracted much attention.

BELGIUM

(*From Our Regular Correspondent*)

March 4, 1922.

The International Congress of Medicine and Pharmacy as Applied to Military Affairs

The standing committee of the First International Congress of Medicine and Pharmacy as Applied to Military Affairs met Feb. 20, 1922, in the Military Hospital of Brussels, under the presidency of Inspector General Wibin, all the members being present except Mr. de Fonseca, the delegate from Brazil. The six countries represented were: United States, Bainbridge; Italy, Mauri; France, Uzac; Switzerland, Thomann; Spain, van Baumberghen, and Belgium, Voncken (secretary). It was unanimously decided to hold the meeting of the second congress in Rome, in May, 1923, when the following questions will be discussed: 1. Sanitary evacuations: (*a*) the general principles of evacuations of armies in the field; (*b*) organization of evacuations, and a consideration of the irreducible minimum of therapeutic needs; (*c*) adaptation of medical and surgical therapeutics to the diverse conditions imposed by the necessity of proceeding with evacuations. 2. Collaboration of civil and military authorities in matters of social hygiene, physical education and prophylaxis (statistics on social diseases: tuberculosis, venereal diseases, alcoholism, mental defects; methods of securing secret information; concerted prophylactic action, vaccination). 3. A critical study of the processes of disinfection and disinfestation in times of peace and war. 4. Treatment of thoracopulmonary wounds and their sequels. In addition, a pharmaceutic question has been proposed: the chemical laboratories in the army; their rôle; their methods.

Reorganization of the Red Cross of Belgium

The physicians of Belgium have been intensely interested of late in the reorganization of the Red Cross. This society had marked out for itself a series of tasks in a gigantic campaign amounting to the assumption by the Red Cross of Belgium of a semi-official position and making it practically a ministry of hygiene. This vast enterprise could not take shape except after many heated debates, as a consequence of which Dr. Depage was obliged to give up the presidency of the Red Cross. Public opinion became aroused over the matter and Dr. Depage consented to resume charge. He published recently an outline of the program to which he has committed himself. It includes: 1. In time of war: (*a*) to lend its aid to the army medical corps, and (*b*) to contribute to the alleviation of the sufferings of the victims of war, both civilian and military. 2. In time of peace: (*a*) to organize, in conformity with the instructions of the department of national defense, such sanitary units as the Red Cross will be expected to furnish in time of war; (*b*) to contribute toward the improvement of public health; (*c*) to aid in the hospital treatment of patients; more especially, of those suffering from transmissible diseases and occupational lesions, such as victims of accidents; (*d*) to take an active part in all movements for the protection of childhood, and (*e*) to aid the victims of a catastrophe or public calamity.

In time of peace it will concern itself mainly with questions of social hygiene, such as the campaign against tuberculosis and all forms of epidemic diseases. It will occupy itself with child welfare, will relieve the distress occasioned by industrial accidents and will interest itself in the health of the people in general. The Red Cross of the future will not hold itself aloof from any form of social endeavor, any form of social responsibility, but it is its duty to organize and coordinate all expressions of the humanitarian instinct in man, in order that all such promptings of the human heart may be directed in proper channels and an efficient general program be secured. The Red Cross should support the societies already founded for the aid of the sick when they seem to be functioning in an efficient manner, but it may become its duty to found others, with the aid of the Comité Médical, when public health demands it.

The Propaganda of Hygiene

The Red Cross has recently published a pamphlet that sets forth in a graphic way the ensemble of hygienic problems that confront the present day and generation. The future of ten Belgian children is illustrated by a diagram based on actual vital and social statistics. Of ten prospective mothers, only eight will give birth to a living child. Of these eight children, two will die before they reach the age of 20, while two will be sick or in such poor general condition as to be excused from service in the army. Thus, after the lapse of twenty years, there will be only four defendants of their country—four efficient producers. When the age of forty is reached, death will have claimed one survivor and of those four who at 20 were still robust one will have become infirm. Of the ten children who should have been born in health and should have grown to healthy manhood and womanhood, only two now remain!

In order to counteract this state of affairs, the Belgian Red Cross promulgates these "ten commandments": (1) possess and spread a knowledge of hygiene; (2) save the children; (3) fight against tuberculosis; (4) fight against alcoholism; (5) fight against slum life; (6) fight against unhealthful occupations; (7) fight against poverty; (8) consider the health aspects of the situation before we marry; (9) establish in every community a hygienic service, and (10) create health centers where all forms of crusade for the promotion of the general welfare may be centralized.

BUDAPEST

(From Our Regular Correspondent)

Feb. 7, 1922.

Legal Decision that Insanity Is Disease

A case of considerable interest to physicians has been decided by the high court of justice. A lumber mill clerk became incapacitated for work from sickness, which in course of time culminated in insanity, and this required his removal to an asylum, where he was confined for two or three years. The sickness club of which he was a member refused assistance to the family on the ground that the man was suffering, not from bodily disease, but from insanity. After the examination of many witnesses, including a number of medical men, the court decided that the man's inability to work was not due to bodily sickness in the ordinary and natural sense of that term, but was due to insanity. The court reached this decision with considerable difficulty, as the rule of the society applying to bodily sickness was rather awkwardly expressed. The judge hoped, however, that the society would see its way to render the family more assistance from its charity fund. The decision of the court, on appeal to the high court of justice, was overruled, and judgment brought against the club.

Syphilis Among Physicians

At a meeting of the medical society, Nekam reported that recently he had treated several medical men for syphilis contracted in the course of their calling. Most of the primary effects were on the fingers, and they had been treated as whitlows until the torpid appearance and granular swellings and exanthem had pointed to the true character of the disease. Once the primary disease was on the ear, which had been scratched before coming in contact with the infecting material. In two cases there was no primary disease, the infectious material passing directly into the blood when the finger was pricked with an injection needle. In 1905, Blaschko of Berlin reported twelve similar instances. As a preventive, surgeons should perform every operation and make every gynecologic examination as if the patient were syphilitic. Vaginal injection should be made, and in suspicious cases the finger should be protected. The smallest wound should be looked after. Many of these wounds were the consequence of too vigorous rubbing with brushes and disinfectants. If the skin was delicate, disinfection might be limited to washing with soap and hot water. If the hands were thoroughly washed after touching suspicious material, they would not so readily bear infection, even if excessive disinfection was not resorted to before the contact. Rubber gloves also might be used.

Incontinence of Urine in Children

Incontinence of urine in children is observed almost always in children from 3 to 10 years of age; some have it diurnally as well as nocturnally, but others, and they are most numerous, urinate simply at night. According to Dr. Bokay, professor of pediatrics at the University of Budapest, these children belong to the degenerate and neuropathic type. It can be said that the commencement of this neurosis is the hyphen between first and second childhood; it is the persistence of the habits of infancy and the results from derangement of the nerve centers. The trouble manifests itself by atony of the sphincter added to the spasmodic contraction of the muscle of the bladder, a true spasm, independent of the will. If such is the affection, an antagonist should be opposed; an antispasmodic must be chosen, and atropin is indicated in preference to belladonna, which is much less active, or to rhus aromaticus, which does not always succeed. Dr. Bokay employs Guinon's method of prescribing a 1 per cent. solution of atropin sulphate to be taken (by a child, aged 6) in doses of 5 drops three times a day in a tablespoonful of sweetened water, and increased by 1 drop each time until 10 drops are reached.

Nongonorrheal Urethritis

Dr. Adolf Erdös of Nagyvarad has reported a series of cases of nongonorrheal urethritis. They were characterized (1) by the long stage of incubation (from five to sixteen days); (2) by the mildness of both objective and subjective symptoms (slight itching or burning in the fossa navicularis, a plug of secretion that was washed away by the pressure of passing urine, or a few with many pus threads in generally clear urine); (3) by the very chronic course; (4) by the entire absence of gonococci, and (5) by the failure of the usual modes of treatment. The prognosis was, therefore, bad. Some of the cases had been watched for a year, in two without any improvement taking place. These patients had never had gonorrhea or syphilis; they showed no sign of tuberculosis, and suffered from neither phosphaturia nor oxaluria. No micro-organisms that would be considered specific were ever found, nor could any be cultivated. Three of the patients married, one of them was the father of two children, and the wife had remained healthy. Dr. Erdös reports on three other cases in which gonococci were never found, but large quantities of micro-organisms of the group of pseudodiphtheritic bacilli were present. These were distinguished from the former cases by the short stage of incubation (from three to four days) and the circumstance that the symptoms were mild, and recovery took place quickly. Finally, nongonorrheal urethritis might be set up by chemical or mechanical irritation of the urethra, of which class he had seen four cases.

The Siberian Giant

A man named Kazanloff, recently exhibited in Hungary, is said to be one of the largest men alive, and is probably one of the tallest men of whom authentic record exists. He is 34 years of age, his height is 9 feet and 3 inches (282 cm.), and he is built in proportion to his height. Thus, his hand is 1 foot, 1 inch (33 cm.) from finger tip to wrist; his foot is 1 foot 9 inches (53 cm.) long; his chest measurement is 56 inches (142 cm.); the circumference of his head is 25 inches (63.5 cm.) and his weight is 208 kg. (458 pounds). To support this huge frame, he eats an amount that would satisfy four others of good appetite. In four meals in the course of the day he consumes 4 or 5 pints (from 2,000 to 2,500 c.c.) of milk, from fifteen to twenty eggs, 3 or 4 pounds (from 1.3 to 1.8 kg.) of meat, five or six loaves of bread, large quantities of potatoes, beans and other vegetables, 2 or 3 liters (from 4 to 6 pints) of wine, and 5 or 6 liters of beer. These quantities appear to be well attested, as do the measurements of his proportions; but the fact that arrests attention particularly in the accounts of the giant's habits is the enormous amount of sleep that he needs. Normally he passes a large portion of the day in slumber, and he has been known to sleep for twenty-four hours on end. Even when awake, his movements are slow and deliberate, and he is inclined to doze off when left alone, the only stimulus to exertion being the cravings of hunger, which are said to be acute.

It is impossible in the light of recent researches on gigantism to regard this prodigious specimen of humanity as a mere "freak." He must be the subject of pathologic change, probably in the pituitary body. The condition of general symmetrical gigantism gradually developing is not in all points like true acromegaly, but is closely allied to it. The prognosis with regard to longevity cannot be said to be bright. Kazanloff has now left for his fatherland, Siberia, where he intends to help his parents in farm work.

BERLIN

(From Our Regular Correspondent)

March 2, 1922.

The Prevention of Arsphenamin Injuries

The opposition which for some time has been manifest toward the unrestricted administration of arsphenamin has been strengthened by the increasing number of marked injuries that have been reported of late as due to arsphenamin treatment. In addition, we hear of repeated observations that the remedy does not bring about the prompt and permanent effect that its inventor and its supporters have maintained. For this reason, the Council of Health of the empire felt called upon to give to physicians, recently, "Suggestions for the Use of Arsphenamin Preparations," which were published in the *Deutsche medizinische Wochenschrift* **47**:1566 (Dec. 22) 1921, and elsewhere. Furthermore, the Prussian Council of Health, on the basis of detailed reports from the Breslau dermatologist Professor Jadassohn and from the Berlin dermatologist Professor Buschke, discussed the subject thoroughly at a special meeting. The meeting was not public, for which reason I cannot give a report of the proceedings. Then, again, at a meeting of the Berlin Medical Society, held recently, a thorough discussion of arsphenamin problems was entered upon, following communications on the subject presented by Professor Heffter, director of the Berlin Pharmacologic Institute, and by Professor Arndt, director of the Berlin Dermatologic Clinic.

Professor Heffter pointed out that arsphenamin preparations are substances of very peculiar constitution, which oxidize readily in the air and thus become more toxic. Therefore, great care is necessary, since an invisible cracking of the ampules in which the arsphenamin is enclosed may bring about such oxidation. Also the solutions, especially neo-arsphenamin solutions, oxidize easily if allowed to stand a short time. Therefore, the preparation and sale of solutions in drug-stores has been prohibited. The establishment of a maximal dose, which is demanded more particularly by the opponents of arsphenamin, Heffter regards as unnecessary, as a maximal dose would not prevent the physician from exceeding it, as he could do so by placing in his prescription an exclamation point after the excessive dose. Since, in the case of arsphenamin, the physician has the administration of the dose in his own hands, there seems to be no reason for establishing a maximal dose by official act.

Professor Arndt occupied himself mainly with the fatalities occurring after the use of arsphenamin, which in recent years have increased to an alarming degree. As long as, in connection with arsphenamin treatment, which he designates as marking an epoch in the progress of syphilology, the untoward secondary manifestations were only transitory and fatalities were of rare occurrence, they were accepted as a matter of course, since the action of the remedy, in the main, was so excellent. In the period from 1914 to 1918, Arndt observed four deaths following the use of arsphenamin in the Strasbourg Clinic.

After Arndt moved to Berlin, he did not observe any fatalities during the first two years (1919 and 1920), but in 1921 twelve fatal cases came to his attention, and in eight of these the patients had received their injections in his clinic or policlinic. Besides the twelve fatal cases, which presented, partly, cerebritis, acute atrophy of the liver and acute general dermatitis, he witnessed eleven further cases of severe dermatitis which healed but left the patients weak for a long time. In these cases, partly arsphenamin and partly mercury had been used. The so-called arsphenamin icterus he observed 280 times in 1920-1921, and at least 231 of the cases were traceable to arsphenamin. This arsphenamin icterus was relatively more frequent in connection with tertiary syphilis. Arndt recommends, therefore, that arsphenamin be reserved for primary and secondary cases with manifest symptoms.

Arndt states that the excellent service that arsphenamin renders will not be discredited by warning against overdoing the matter. Early latent syphilis Arndt no longer treats with arsphenamin, and tertiary syphilis only in severe cases in which energetic treatment is imperative. He regards it also as useless or impracticable to treat late latent syphilis for years with arsphenamin when the only symptom present is the positive Wassermann reaction. The size of the dosage of arsphenamin, not only of the single dose but also of the total dosage, is still a matter of much controversy. But all these considerations furnish only relative protection. These precautions will prove unavailing if mistakes occur in the process of manufacture or if the preparation undergoes changes after it has left the manufacturer's hands. It is significant that certain ampules numbered consecutively by the manufacturers have produced several cases of untoward secondary manifestations leading to severe illness and even death. Therefore, Arndt recommends that the sale of arsphenamin be put under state control.

Professor Dr. Kolle of Frankfort-on-the-Main, the successor of Paul Ehrlich, opened the general discussion of the problem. He mentioned the fact that the testing of arsphenamin had been put on a much stricter basis since the accidents from its use had become more frequent. Except so far as unauthorized speculators may have distributed stale products, the chemical and biologic investigations have unearthed no cause for the increase in arsphenamin accidents. Attempts to produce more stable preparations have so far proved unsuccessful. Kolle regards neo-arsphenamin as an especially stable product. Animal experiments on rabbits with respect to so-called abortive treatment have shown that with large doses of arsphenamin and with half the fatal dose of mercury the sterilization of these animals can be effected in 100 per cent. of the trials. If the treatment is not begun until thirty days after the onset of the infection, sterilization is accomplished in only half of the cases, from which fact it becomes evident that the early treatment of syphilis is of the greatest importance and that the administration of arsphenamin is the main thing, since thereby the causative organisms are killed. The discussion of this exceedingly important problem is to be continued through several sessions of the society.

Work of the Consultation Centers for Patients with Venereal Disease, 1919-1920

The number of consultation centers for venereal disease in Germany had grown by the end of 1920 to 164. In that year, 110,000 persons sought advice in these consultation centers, as compared with 33,000 in 1918. The largest number of applicants visited the consultation centers of the Landesversicherungsanstalt Sachsen, for it is in Saxony that we find the largest percentage of persons engaged in manufacturing industries. In 1920, 40,000 cases were reported by the patients themselves, 21,000 by physicians, 18,000 by health insurance societies, 15,000 by hospitals, 3,000 by the military authorities and 7,000 from other sources. Of the persons reported in 1920, 29,000 men and 19,000 women were found to be suffering from syphilis; 20,000 men and 8,500 women from gonorrhea; 15,000 men and 12,000 women from syphilis and gonorrhea; 1,067 children under 14 years of age from syphilis; 496 children from gonorrhea; 5 children from syphilis and gonorrhea, and 5,000 adults and 85 children under 14 from some other sexual disease. In towns of more than 5,000 inhabitants, sexual disease constituted 79 per cent. of the notifiable diseases, while in the smaller towns the percentage was only 21. However, the percentage of sexual diseases in the smaller towns was increased last year. Of the persons given treatment for venereal disease, 22,000 had not previously received treatment for such disease. The cost of maintaining the consultation centers amounted to about 3,000,000 marks per year.

Personal

Professor Orth, who for many years was head professor in the department of pathologic anatomy, having, for reasons of health, resigned the office of chairman of the Berlin medizinische Gesellschaft, Professor Kraus, director of the second Medizinische Klinik, has been chosen as his successor. For the first time since the medizinische Gesellschaft was founded, this selection was not effected without a struggle, owing to the fact that Kraus is not popular with all members of the society. This post has from time immemorial been regarded by Berlin physicians as of special importance, not only because the Berlin medizinische Gesellschaft is the largest scientific medical association in Germany, counting, as it does, about 1,800 members, but also because the office, since the founding of the association, has been held by such men as Albrecht von Graefe, B. von Langenbeck, Rudolf Virchow, E. von Bergmann, Senator and Orth.

Prof. Dr. Julius Morgenroth, department director in the Robert Koch Institute, has been awarded the annual prize of the Aronson Foundation.

February 22 was the hundredth anniversary of the birth of the Heidelberg clinician Adolf Kussmaul, now deceased. In memory of the event, numerous special articles appeared in the medical press, in which, as, for example, in the *Deutsche medizinische Wochenschrift,* various incidents in his life that were of general interest were brought out.

Professor Sauerbruch, director of the Munich Surgical Clinic, has been awarded the Kussmaul prize for his contributions to medicine, in connection with the celebration of Kussmaul's hundredth birthday anniversary. The Heidelberg medical faculty bestows this prize every three years on a German physician in recognition of some approved therapeutic method that he has introduced. Sauerbruch received the prize chiefly on account of the Sauerbruch arm, which was constructed by him.

The Disappearance of Influenza

According to a report issued by the local health insurance society (*Ortskrankenkasse*) of Berlin, the number of persons incapacitated from work on account of influenza has materially decreased. January 3, the number of influenza cases was put at 2,005; but on February 23 the number had dropped to 176. The present epidemic of influenza, which appears to be coming to an end, has not equaled in the number or the severity of the cases the epidemic of 1918.

Marriages

William Marco Sheppe, University, Va., to Miss Olive Bow Harris of Albermarle County, Va., February 22.

Dell W. Van Gilder, Denver, to Miss Erna Louise Knippenberg of Cleveland, Ohio, at Denver, February 16.

John M. Henderson to Mrs. Martha Spencer Warburton, both of Williamsburg, Va., February 28.

Remaldo Vinton Ellis, Ketchikan, Alaska, to Miss Mary Myhre, in Seattle, recently.

LeRoy Harrison Baily to Miss Theresa Cogswell, both of Los Angeles, December 31.

William A. Lucas, Pulaski, Va., to Miss Mary Trent, Knoxville, Tenn., March 1.

Zebulon Vance Sherril to Dr. Carolyn A. Clark, both of Marion, Va., February 9.

August E. Kroening to Mrs. Mary L. Baker, both of Sioux City, Iowa, March 11.

Deaths

Charles J. Jessop ⊕ Kittanning, Pa.; Jefferson Medical College, Philadelphia, 1874; president of the Armstrong County Medical Society; president of the Kittanning Board of Health, and director of the U. S. Pension Board; founder and chief surgeon of the Kittanning General Hospital; died, March 8, aged 70, at the Western Pennsylvania Hospital, Pittsburgh, as a result of a fall.

Jacob Eaton Bowers, Duluth, Minn.; University of Michigan Medical School, Ann Arbor, 1869; formerly superintendent of the Rochester State Hospital, Rochester, Minn., and connected with the state school for the mentally deranged, St. Peter; died, February 23, aged 80, at the St. Luke's Hospital, following an operation on a fractured patella.

Frank Herbert Jenckes, Woonsocket, R. I.; Medical Department of the University of the City of New York, 1887; member of the Rhode Island Medical Society, and the Rhode Island Ophthalmological and Otological Society; died, March 13, at Buenos Aires, Argentina, where he had gone for his health, aged 51, from heart disease.

Eugenius Augustus Hildreth ⊕ Wheeling, W. Va.; University of Pennsylvania, Philadelphia, 1905; served during the World War, captain, M. C., U. S. Army; specialized in ophthalmology, otology, laryngology and rhinology; died, March 11, aged 41, at the Ohio Valley General Hospital, Wheeling, from pneumonia.

Homer Brandel Smith ⊕ Lancaster, N. H.; Medical School of Harvard University, Boston, 1903; served during the World War, major, M. C., U. S. Army; formerly served in a government hospital, Boston, the Boston City Hospital and the Children's Hospital, Boston; died, March 12, aged 44.

Michael Henry Etcheverry, San Francisco; College of Physicians and Surgeons, San Francisco, 1902; formerly adjunct professor of clinical medicine at the College of Physicians and Surgeons, San Francisco; was found dead in his office, March 1, aged 42, from heart disease.

Frank Kennedy Holman, Sumter, S. C.; University of Pennsylvania School of Medicine, Philadelphia, 1901; member of the South Carolina Medical Association; was found dead, February 23, in his bathroom, from phenol poisoning, presumably self-inflicted, aged 46.

Belle J. Mcdonald ⊕ New York City; Willamette University Medical Department, Salem, Ore., 1886; formerly national chairman of the public health committee of the American Medical Association; died, February 11, aged 66, at Palermo, Sicily.

James Matthews Knowlton ⊕ Youngstown, Ohio; Boston University School of Medicine, Boston, 1893; member of the Medical Society of the State of Pennsylvania; specialized in surgery; died, February 28, aged 54, from a poison taken by mistake.

Charles Marvel ⊕ Richmond, Ind.; Jefferson Medical College, Philadelphia, 1891; member of the American College of Surgeons; member on the staff of the Reid Memorial Hospital, Richmond; died, March 5, aged 57, from angina pectoris.

Roy Boyd Harrison, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1921; member of the Tennessee State Medical Association; intern at St. Thomas Hospital, where he died, March 3, aged 25, from pneumonia.

Walter Kendrick Quackenbush, Argyle, Wis.; Albany Medical College, Albany, 1895; member of the State Medical Society of Wisconsin; died recently from a hemorrhage, following tonsillectomy, aged 52.

Ralph E. Conger, China Spring, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1897; member of the State Medical Association of Texas; died, March 1, aged 58, from heart disease.

Lowell Thomas Mahon, Toledo, Ohio; Rush Medical College, Chicago, 1886; was found dead in his room at a hotel in Sandusky, Ohio, March 12, aged 60, from acute alcoholism and opium poisoning.

Frederick Augustus Wicker ⊕ Livonia, N. Y.; University of Buffalo Department of Medicine, 1888; died, February 25, aged 55, following an operation for appendicitis, at a hospital in Rochester.

⊕ Indicates "Fellow" of the American Medical Association.

James Whillidin Ware, Cape May, N. J.; Jefferson Medical College, Philadelphia, 1895; formerly resident physician of the hospitals at Phoenixville and Greenville, Pa.; died, March 15, aged 53.

Nathaniel C. E. Guth, Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1873; member of the Medical Society of State of Pennsylvania; died, March 16, aged 71.

William Hall Thomas, Steeles Tavern, Va.; Baltimore Medical College, Baltimore, 1889; member of the Medical Society of Virginia; died, March 11, aged 63; from cerebral hemorrhage.

Frederick Lincoln Johnson, Stanton, N. J.; College of Physicians and Surgeons, Baltimore, 1889; member of the Medical Society of New Jersey; died, March 8, aged 57, from pneumonia.

William Lawrence Cuthbert, Long Beach, Calif.; Rush Medical College, Chicago, 1862; veteran of the Civil War; formerly health officer of Long Beach; died, March 10, aged 91.

Charles B. Willis, Huntington, N. Y.; Medical Department of the University of the City of New York, 1858; served during the Civil War with the rank of major; died, March 15, aged 89.

Joseph Evan Brunson, Ninety Six, S. C.; University of Georgia Medical Department, Augusta, 1892; member of the South Carolina Medical Association; died, February 20, aged 72.

Samuel Irving Myers, Bayonne, N. J.; Medical Department of Columbia College, New York City, 1878; member of the board of education; died, March 5, aged 69, following a long illness.

Ulysses Grant Strieby, Brownington, Mo.; University Medical College, Kansas City, 1892; member of the Missouri State Medical Association; died recently, aged 56, from pneumonia.

Alvin Elizur Barber, Bethel, Conn.; Berkshire Medical College, Pittsfield, 1854; member of Connecticut State Medical Society; health officer of Bethel; died, March 3, aged 91.

William T. Williams, Teague, Texas; College of Physicians and Surgeons, Keokuk, Iowa; formerly of Nebo, Ill.; veteran of the Civil War; died, February 17; aged 80.

Llewellyn G. Klepinger, Dayton, Ohio; Medical Department of the University of Cincinnati, 1901; member of the Ohio State Medical Association; died, March 11, aged 51.

Norman Fitch Chandler ⊕ Medford, Mass.; Medical School of Harvard University, Boston, 1888; member of the New England Pediatric Society, died, March 6, aged 62.

Frank B. Wilkes, Houston, Texas; Memphis Hospital Medical College, Memphis, 1888; member of the State Medical Association of Texas; died, March 12, aged 61.

Henry John Webber, Auburn, Maine; Dartmouth Medical School, Hanover, 1895; member of the Maine Medical Association; died, March 5, aged 53, from heart disease.

Reuben T. Ramsey, Gretana, Va.; College of Physicians and Surgeons, Baltimore, 1879; member of the Medical Society of Virginia; died, February 28, aged 64.

Norman C. Davis, Badger, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; was found dead in his drug store, March 5, from heart disease, aged 65.

Thaddeus Marshall Brooks Cross, New York; Bellevue Hospital Medical College, 1868; died, March 15, aged 82, at the Peter Bent Brigham Hospital, New York.

Francis Charles Floeckinger ⊕ Taylor, Texas; University of Graz, Austria, 1895; former city health officer; died, March 6, aged 48, from cerebral hemorrhage.

John Josiah Joseph Mazza ⊕ Bangor, Pa.; Medico-Chirurgical College, Philadelphia, 1910; died, March 12, aged 33, at the Easton Hospital, from chronic nephritis.

Leander Warren Combs, Becket, Mass.; Philadelphia University of Medicine and Surgery, Philadelphia, 1866; died, March 10, aged 80, from pneumonia.

Jesse Alfred Nash, Plantersville, Miss.; University of Louisville Medical Department, Louisville, 1907; died in March, aged 39, from appendicitis.

William A. Wildman, Butlerville, Ind.; Medical College of Ohio, Cincinnati, 1884; member of the Indiana State Medical Association; died recently, aged 68.

William Haynie, Buffalo, Texas (years of practice); member of the State Medical Association of Texas; Confederate veteran; died, March 8, aged 79.

George MacMurphey, Ortonville, Minn.; Bellevue Hospital Medical College, New York City, 1878; died recently, aged 69, from cerebral hemorrhage.

Eaton Kittredge McNeil, Santa Rosa, N. M.; Medical Department of Columbia University, Washington, D. C., 1894; died, March 9, aged 53.

John Everett Booth, Daisy, Okla.; University of Dallas Medical Department, Dallas, 1902; died, February 9, aged 43, from cerebral hemorrhage.

James Renick Kincaid, Frankford, W. Va.; Medical College of Virginia, Richmond, 1878; died, January 11, aged 67, from pernicious anemia.

William Virginius Brockinton, Kingstree, S. C.; University of Georgia Medical Department, Augusta, 1888; also a druggist; died, March 9.

William C. McDowell, Springfield, Mo.; Hahnemann Medical College, Philadelphia, 1878; formerly of Chicago; died, March 20, aged 66.

William Franklin Blair, Tacoma, Wash.; Medical Department of Western Reserve University, Cleveland, 1885; died in February, aged 64.

Harvey Bowers, Sugar Grove, W. Va.; University of Maryland School of Medicine, Baltimore, 1893; died, March 2, from pneumonia.

Ida Clarke ⊕ Youngstown, Ohio; Woman's Medical College of Pennsylvania, 1878; died, March 3, aged 68, in Atlantic City, N. J.

Oscar Roi Hardy, Los Angeles; Northwestern University Medical School, Chicago, 1912; died, March 5, aged 41, from heart disease.

Edward N. Crawford, Cecilton, Md.; College of Physicians and Surgeons, Baltimore, 1874; died, March 4, aged 70, from appendicitis.

Alexander W. Wheeler, Cleveland, Ohio; Bellevue Hospital Medical College, New York City, 1863; died, January 28, aged 80.

Charles W. Arthur ⊕ Plattsburg, N. Y.; University of Vermont College of Medicine, Burlington, 1865; died, March 2, aged 77.

William Kamp ⊕ Belleville, Kans.; Albany Medical College, Albany, 1882; formerly mayor of Belleville; died, March 7, aged 65.

John D. McKenzie, McKenzie, Tenn.; Vanderbilt University Medical Department, Nashville, 1886; died, March 1, aged 78.

Benjamin J. French, Waco, Tex.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898; died, March 4, aged 68.

Alton Sawyer ⊕ Augusta, Me.; Jefferson Medical College, Philadelphia, 1878; died, March 1, following a long illness, aged 73.

James Jeter Glenn, York, S. C.; Medical College of the State of South Carolina, 1910; died, March 1, aged 34, from pneumonia.

John Ogden Johnson, Hudson, Ill.; Eclectic Medical Institute, Cincinnati, Ohio, 1887; died, March 6, aged 64, from dropsy.

William Anthony Cooling ⊕ Wilton Junction, Iowa; Rush Medical College, Chicago, 1899; died, March 17, aged 49, from pneumonia.

Martin P. Brown, Davenport, Iowa; College of Physicians and Surgeons, Keokuk, 1887; died suddenly, March 9, aged 66.

George Wentworth Tait, Goldonna, La.; Memphis Hospital Medical College, Memphis, 1892; died, February 16, aged 65.

James N. Roland, Chester, Ga.; University of Georgia Medical Department, Augusta, 1904; died, February 9, aged 42.

Gustav P. W. G. Keitz, New Orleans; Medical College of Louisiana, New Orleans, 1880; died, January 19, aged 73.

Milton A. Henry, Saline, La. (licensed, Louisiana, years of practice); died, March 1, aged 79, from senility.

Burnett C. Vorhes, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1881; died, March 5, aged 67.

George Mantell Allen ⊕ Cincinnati; Miami Medical College, Cincinnati, 1881; died, March 3, aged 72.

William A. Shriver, Virden, Ill.; Eclectic Medical Institute, Cincinnati, 1871; died, March 12, aged 77.

Frank Paris Eldridge, Greenview, Ill.; Rush Medical College, Chicago, 1878; died, March 5, aged 68.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

LEAVEN'S ASTHMA PRESCRIPTION

This preparation is put on the market by the Leavengood Drug Company, Rosedale, Kan.; Clyde Leavengood, president. Advertisements in newspapers that are not too particular about their advertising pages, notify the public: "Asthma Cured By Simple Remedy"; that a "famous druggist discovered this simple remedy." The "famous druggist" is Mr. C. Leavengood; he made the "discovery" thirty years ago.

> "Mr. Leavengood feels so confident that his prescription will cure in all cases that he generously offers to send a big bottle on ten days' free trial."

In the advertising matter that is sent to those who answer the advertisement, one learns that the "discovery" of the "famous druggist" came about in this wise: Thirty years ago a man presented a prescription at the Leavengood Drug Store; the identity of the doctor who wrote the prescription "cannot be traced." The man was "CURED" and other asthma sufferers who heard of this and were unable to find the doctor "frantically sought the Leavengood Drug Store to get some of the medicine." The prescription had been lost but, fortunately for the sufferers—and Mr. Clyde Leavengood—the proprietor of the Leavengood Drug Store remembered the formula!

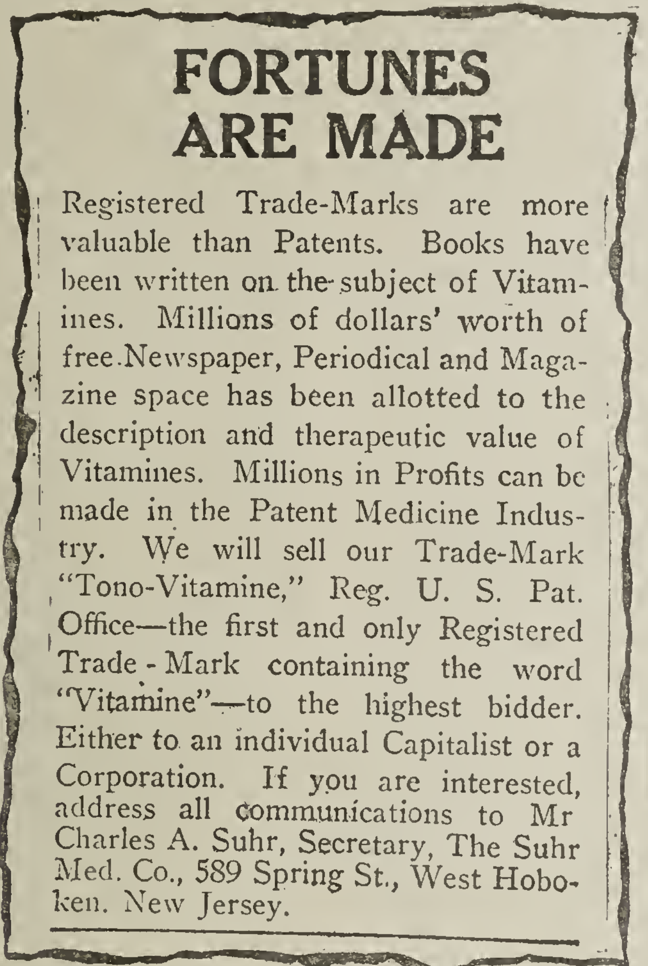
The usual batch of testimonials from laymen is forthcoming. There is also featured (in the approved "follow the arrow" style) an order for the nostrum sent in by Dr. A. L. Haight of Crystal Falls, Mich. Because of the number of inquiries about this product, an original specimen of "Leaven's Asthma Prescription" was submitted to the A. M. A. Chemical Laboratory for analytic purposes. The laboratory report follows:

"An original specimen of Leaven's Asthma Prescription was examined. The package contained about four fluidounces of a dark brownish-red, syrupy liquid, having a neutral reaction to litmus and an odor suggestive of a mixture of oils of sassafras and wintergreen. On evaporation of an ether extract of the preparation, a distinct odor like oil of spearmint was observed. The preparation had a harsh, disagreeable, but somewhat sweet, taste, resembling that of potassium iodid in syrup. Iodid, potassium, sucrose (cane sugar), a trace of iron and an unidentified yellow dye were detected by qualitative tests. Alcohol, alkaloids, ammonium salts, heavy metals, emodin-bearing drugs, phosphates, salicylates, sodium salts and sulphates were absent. The absence of alkaloids excludes the presence in the preparation of such drugs as hyoscyamus and the opium derivatives, substances sometimes employed in the treatment of asthma.

"Quantitative examination indicated that the composition of Leaven's Asthma Preparation put out by the Leavengood Drug Company, Rosedale, Kansas, is essentially as follows:

"Potassium iodid	10.9 gm.
"Sucrose (cane sugar)	55.0 gm.
"Iron	a trace
"Water, flavoring and coloring matter to make	100 c.c."

It is evident from the analysis that a solution of about 48 grains of potassium iodid in a fluidounce of simple syrup would have whatever anti-asthmatic properties are possessed by "the most remarkable asthma remedy ever known to mankind" discovered by the "famous druggist" of Rosedale, Kansas.



FORTUNES ARE MADE

Registered Trade-Marks are more valuable than Patents. Books have been written on the subject of Vitamines. Millions of dollars' worth of free Newspaper, Periodical and Magazine space has been allotted to the description and therapeutic value of Vitamines. Millions in Profits can be made in the Patent Medicine Industry. We will sell our Trade-Mark "Tono-Vitamine," Reg. U. S. Pat. Office—the first and only Registered Trade-Mark containing the word "Vitamine"—to the highest bidder. Either to an individual Capitalist or a Corporation. If you are interested, address all communications to Mr Charles A. Suhr, Secretary, The Suhr Med. Co., 589 Spring St., West Hoboken. New Jersey.

The present interest in and lack of knowledge of the vitamins make these substances a potential gold mine for the "patent medicine" exploiter. Here is reproduced photographically (somewhat reduced) an advertisement appearing in the *Druggists Circular*, March, 1922. The Suhr Medical Co. has a name for sale! As has been emphasized so often, when one buys a "patent medicine," he buys a *name*, and not a *thing*. "Tono-Vitamine," as a thing, is negligible; "Tono-Vitamine," as a name, is property to be bartered and sold. Incidentally, the Suhr Medical Company appears in the Propaganda files as the exploiters of "Anti-Gonic Tablets" and "Nova Nura Capsules." These are advertised in the *Police Gazette;* the former to "Rid your system of Gonotoxins." "If you haven't been good, now be careful"; the latter, for the "Restoration of Lost Manhood."

EKSIP

This is a mail-order "cure" for diabetes marketed by one Matthew Richartz. The advertising slogan of Richartz is: "No More Dieting! No More Starving! 'Eat and Get Well.'" According to the advertising patter, Eksip is the discovery of "the famous Dr. Stein-Callenfels." This famous individual, we are told, had wonderful success in treating diabetes with his discovery "Eksip." Unfortunately, "just as his fame was being spread throughout Europe" Stein-Callenfels died. On his deathbed he bequeathed Eksip to the brother of Matthew Richartz, who in turn, has made Matthew the "sole proprietor and distributor of this valuable preparation in America."

Eksip comes in tablet form and the price asked is $6 for 200 tablets. The directions are to take two or three tablets a day:

> "When you order and take 'Eksip' as directed, no diet list whatever is given. You are directed to eat what you need and to take the tablets as directed — that's all."

The advertising booklet states that the diabetic may even eat candy if he feels impelled to! There is the usual batch of testimonials from laymen; there is also one from Dr. Edmund Kolb of New York City. No information is given regarding the composition of Eksip, except that the booklet states, uninformatively, that it is "a palatable compound of time honored medicinal herbs." A preliminary examination of Eksip was made in the A. M. A. Chemical Laboratory which reported:

"The bulk of the tablets consist of magnesium carbonate and starch. A small quantity of an unidentified drug was found. It was not determined whether this was of vegetable or animal origin. Alkaloids, heavy metals and emodin-bearing drugs were absent.

"The preparation is not identical with the Eksip (also a diabetic remedy) examined by Mannich and Kather in 1915 (*Ap. Ztg.* **30**:240, 1915). This was a liquid containing an extractive from an unidentified drug and a considerable quantity of free hydrochloric acid."

Nutrition.—Health is a condition of soundness of a living organism. It is wholeness—a state of being in which all the natural functions are freely exercised without consciousness of any of them.—I. S. Wile, *Hospital Social Service.*

Correspondence

THE LOGICAL TEACHING OF MEDICINE

To the Editor:—Before placing a hospital on its list of institutions approved for internships, the Council on Medical Education and Hospitals is accustomed, I believe, to satisfy itself by careful inquiry that the hospital possesses the necessary facilities, staff and organization to do the required work. To this end, competent persons are sometimes called on to testify to the hospital's fitness. If similar inquiries were made in order to test the fitness of medical schools to carry on undergraduate teaching, what would be the result?

I ask this question in all seriousness, after reading The Journal's account of the discussion that took place at the recent Annual Congress on Medical Education, Licensure, Public Health and Hospitals. The participants in the discussion are men who are responsible for the administrative policies of medical schools, yet not one was prepared to maintain that medicine is being satisfactorily taught anywhere. With this testimony many will be inclined to agree.

What, in brief, is the nature of current medical teaching? The medical student is first introduced to the fundamental sciences—biology, chemistry and physics. Next he is taught physiology and anatomy. He learns about the normal human body, its structure and function. If, at this point, it were possible to ignore tradition, the medical educator would be tempted next to direct the attention of the student to health conservation or preventive medicine. If the promotion of physical well-being is the aim of medicine (the "prevention, cure and alleviation of disease," in dictionary parlance), would it not seem to be logical, after familiarizing the medical student with the healthy body, to show him how, during infancy, childhood, adolescence, maturity and old age, the vigor of the body can best be maintained? Time would be well spent in the study of the manifold dangers that threaten infancy, that lurk in the path of youth, that frustrate and embitter age, in all the walks of life. But how many medical schools today undertake broadly to teach health conservation?

The space allotted to hygiene and the various aspects of health conservation in the current medical curriculum is almost negligible. Passing lightly over these subjects, the student is conducted all too quickly to the clinic and the postmortem room. And when finally, in the hope of rounding out his practical training, he enters the hospital as an intern, his mind is firmly set toward the more dramatic phases of disease and injury. In the hospital, fully half the time and attention of the intern is claimed by major surgery—a useful, indispensable, and life-saving art, but one which, if carefully appraised, would probably be found to embrace from one thirtieth to one fiftieth of the potential usefulness of medical science, broadly conceived and strategically organized and applied.

On a number of occasions I have asked men engaged in the teaching of physical diagnosis whether in the presentation of this subject it was not a mistake to stress well-marked pathologic conditions. These men have usually agreed that much could be gained by increased attention to the study of the body from the standpoint of health rather than from that of disease, but they have maintained that the medical curriculum is already so full that it is impracticable to add anything to it. Nevertheless, it is noticeable that whenever a new, strange and remote tropical disease makes its appearance, some member of the faculty is sure to find the time to tell all about it, however slight the benefit that is likely to result from its presentation to a group of students who are preparing to practice medicine where the disease in question can never be more than a rare curiosity. Meanwhile, the teaching of personal hygiene is left to public health organizations, which lack the numbers, the intimate personal contacts and the forceful influence of the great body of educated physicians.

It is my belief that radical changes in medical education, organization and work are required for the most effective application of medical science, and that an essential prerequisite is a change in the aim, content and method of medical education. Progress in this direction will, however, be extremely slow, unless the public becomes aware of the situation, and demands a type of service which today the graduate of the standard medical school is hardly prepared to render. Medicine itself, not public health administration only, must accept in good faith and must practice in all earnestness the whole duty assigned to it by common sense, as well as by the dictionary, namely, the duty of "preventing, curing and alleviating" disease (not curing disease only). Medical social service, so called, is an entering wedge. Prenatal work is another step in the right direction, and in this field, happily, many physicians are fairly awake to their responsibilities and opportunities. In pediatrics, a hopeful beginning is found in the "health classes" for infants and children. The methods of some tuberculosis dispensaries, and of certain psychiatric clinics, are quite advanced. The systematic supervision of the health of groups of industrial workers is another promising sign. Life insurance companies are lending a hand by providing means for the periodic examination of policy holders. But the object sought will not be attained until the principles and practice of health conservation find a place in the medical curriculum as a major subject, to be pursued intensively before the student is permitted to concentrate on pathology and the practice of medicine and surgery, as now taught.

Let me make it perfectly clear that I am not asking only for increased emphasis on hygiene in the present curriculum, but for a fundamental reconstruction of the whole scheme of medical education, with a view to the presentation in logical order of (1) the sciences underlying medicine; (2) anatomy and physiology; (3) the science and art of health conservation, and (4) the diagnosis and treatment of disease. The multiplication and expansion of schools of public health, however useful and desirable, will not meet the requirement.

S. S. Goldwater, M.D., New York.

CARDIOLOGY AND THE GENERAL PRACTITIONER

To the Editor:—I enclose a copy of a letter from Sir James Mackenzie which will be of general interest. It may be of interest also to note, in this connection, that the first cardiologic society was established in America.

William J. Cruikshank, M.D., Brooklyn.
President, Brooklyn Cardiological Society.

Dear Dr. Cruikshank:—In your letter to me of the 9th February you ask me some questions in regard to the present position of cardiology and its relation to the general practitioner.

It is difficult to explain within the compass of a letter the reasons for the views I hold, but I will endeavour to explain my views in such a way as may excite some interest in the subject.

The present day conception of cardiology is somewhat elementary, in that the essentials are scarcely recognized. The highest conception seems to be to use some mechanical device for the detection of the symptoms of disease. An elaborate device like an electrocardiograph can only be used by relatively few doctors, specially trained. Moreover, it is an instrument whose use is restricted to certain places. It will be seen therefore that the vast majority of patients cannot benefit by its use. For this reason, a conception which looks to mechanical and laboratory devices for the practice of medicine holds a very dark outlook for the majority of patients.

It should be borne in mind that when a man falls ill he develops a great many symptoms. The great discoveries of the past in the diagnosis of disease were made by the recognition of a peculiarity of some of the symptoms, or by the peculiar grouping of a number of symptoms. It was by this method that typhoid and typhus, scarlet and other fevers were recognized, as well as other diseases.

Mechanical devices may reveal certain characteristic signs, and help towards a diagnosis. In place of stopping there, the discoverers should seek for the associated symptoms, and by their peculiar grouping be guided to a diagnosis which can be made by the trained senses of the doctor. It should be recognized that the different diseases produce each a peculiar group of symptoms and the recognition of this idea gives a line to pursue as I shall show presently.

When it comes to the use of an instrument like a polygraph or electrocardiograph, the information it yields can be acquired by other means. When any peculiar sign is discovered by these instruments, the doctor should carefully study the methods by which the sign can be revealed—guided by the evidence produced by the instrument. The character of the pulse revealed by the trained finger, the variations in the heart movements as revealed by auscultation and palpation, the state of the peripheral circulation, and above all the sensations and experiences of the patient, afford the means of recognizing the vast majority of abnormal rhythms. But it requires long and careful training and a wide experience. If teachers would but learn this method, they could instruct their students how to detect the different rhythms, without the use of an elaborate apparatus. This is no fantastic idea, but one I have put to the test. Naturally some rare rhythm will escape recognition, but this will happen even with the aid of instruments.

Another great drawback in the use of instruments is that their use tends to foster the idea that they reveal matters which are the most important for the intelligent practice of medicine. This is quite wrong. The essential matter in every heart case is whether heart failure is present or likely to occur. No instrument, indeed no examination of the heart can ever give this information. An examination of the heart may reveal conditions that may lead to or provoke heart failure, but these are not the signs of heart failure. It can be said with certainty that medical knowledge has not advanced so far as to recognize the kind of knowledge which the symptoms reveal. It is widely but erroneously assumed that modified sounds can reveal the functional efficiency of the heart. It is also wrongly held that this kind of information can be obtained from variations in the heart rate and rhythm, and indeed we find these signs used as standards for determining the functional efficiency of the heart.

The signs of heart failure belong to quite a different category. If we hold clearly in mind what heart failure is, we will see where to look for its signs. Heart failure may be defined as the inability of the heart to supply to the organs of the body sufficient blood for their efficient functioning.

It will thus be seen that the symptoms of heart failure will be produced by those organs which do not receive a sufficient supply of blood. As the output of the heart is dependent on the heart muscle, it is the weakness or exhaustion of the heart muscle which is the cause of heart failure. The exhaustion may be brought about by the muscle being embarrassed in its work by damaged valves, or abnormal rhythms, so that while these conditions may contribute to the exhaustion of the heart muscle, they do not give the signs of heart failure.

It will thus be seen that symptoms of a totally different kind from that revealed by the heart itself are necessary to the understanding of heart failure. But symptomatology has to be looked upon from a new standpoint before the nature of such symptoms can be understood. Hitherto medical investigation has been content to devise new methods for the addition of new symptoms to the great mass already accumulated. In place of aiding progress such a procedure hampers it by clouding over the path of progress in a fog of detail.

Phenomena in nature are infinite in number and variety, but the laws governing their production are few. Every branch of knowledge starts by accumulating a great number of these phenomena, but little progress can be made until the laws governing them are discovered. The discovery of the law of gravity and the atomic theory enabled natural philosophy and chemistry to become sciences, because the phenomena could be classified in groups according to their affinity in nature.

Medicine has only reached the stage where the phenomena are still being accumulated in an incoordinated mass. The symptoms of disease are natural phenomena and subject to the same laws as the phenomena of the natural sciences. Though the symptoms of disease are infinite in number and variety, the vital processes concerned in their production are few in number and their recognition will at once reduce the chaotic mass of symptoms into well defined groups arranged according to their affinity. At the outset of our investigation at the Institute for Clinical Research in St. Andrews, we realized that our enterprise held out no prospect of success until we discovered the laws concerned in the production of symptoms. This we recognized was an essential step to the systematic investigation into the problems of disease, and we recognized that the failures which have attended nearly every clinical research were due to the fact that this elementary knowledge had not been acquired.

Our inquiry has met with success and we recognize certain vital processes which are concerned in the production of a great mass of symptoms. We have applied the principles of this kind of investigation to the study of affections of the heart, and it has thrown a flood of light upon the subject, and opened new fields for investigation.

J. Mackenzie.

The St. Andrews Institute for Clinical
Research, St. Andrews, Fife.

"WHAT OUGHT THE UNITED STATES PHARMACOPEIA TO CONTAIN?"

To the Editor:—In answer to Dr. Wood's letter (The Journal, March 25) concerning my article on the United States Pharmacopeia:

1. How many chemical laboratories in this country have a United States Pharmacopeia to teach them how to make distilled water? Poor silver nitrate, if it should meet a little tap water! Would it have to meet it if the Aqua Destillata were not official? Dr. Wood does not defend the official Aqua, "a colorless, limpid, liquid, practically tasteless and colorless"; a waste of space in a book of drugs.

2. Soap in the compound cathartic pill: This ancient, Asiatic shotgun mixture, or better, intestinal shrapnel bomb, containing colocynth, aloes, scammony, jalap, gamboge and calomel does contain 0.012 gm. of *soap* (1/6 grain) which is contained in the compound extract of colocynth.

3. Does a druggist ever test for standards his lard, starch, agar, wax, linseed, honey, suet, etc.? He relies on the pure food laws to give him these substances unadulterated.

Lovely, to have a standard in the United States Pharmacopeia for lemonpeel, orangepeel, adhesive plaster, cotton, manna, honey and iron wire!

The following would put one in mind of the house that Jack built, namely: Honey is standardized to make clarified honey, and clarified honey is standardized to make honey of rose, and the dose of the last is a teaspoonful. One and a half pages devoted to such nonsense!

4. The adulteration of spices is a question for the pure food administration. Dr. Wood seems to have forgotten that his committee has deleted anise.

5. Of what value is scientific research or a Revision Committee, if duplicated drugs are to be multiplied and nothing eliminated from the Pharmacopeia? If calcium bromid and ammonium bromid cannot be deleted in favor of potassium and sodium bromid, why has Dr. Wood's committee just eliminated strontium bromid, which drug is much used by many physicians?

I am sorry that Dr. Wood did not state how many of my recommended deletions he would approve of, as well as the few of which he has disapproved. A few of the drugs which his committee has deleted are very largely used throughout the United States, the very argument for retaining a drug that Dr. Wood wishes me to consider. In other words, his recommendations are right and mine are wrong.

6. Some dermatologists do not need the old diachylon (lead) ointment, or sodium thiosulphate (hyposulphite). These drugs are of no more necessity in the treatment of diseases of the skin than are musk, lithium and valerian for the treatment of internal diseases.

7. If everything that was ever used medicinally, internally or externally (and all of these drugs are still used somewhere from Alaska to Puerto Rico and from the Philippines to Cape Cod) were kept, the United States Pharmacopeia would now consist of several large volumes, and a revision committee would be superfluous, and the committee on scope could make the sky the limit. The whole object of a revision committee is to boil down and weed out unnecessary drugs while keeping the best and adding the new valuable drugs.

8. Must we keep hypophosphorous acid and the dilute acid to make the syrup of the iodid of iron when 1 grain of reduced iron and 1 drop of the tincture of iodin once a day will be of as much benefit to the child as the syrup of the iodid of iron?

Oliver T. Osborne, M.D., New Haven, Conn.

REMOVAL OF THE TONSILS—VACCINIA

To the Editor:—An article by Drs. H. D. Caylor and G. F. Dick in The Journal, February 25, in regard to indications for removal of tonsils, brings to our attention a subject concerning which there is much confusion. In our work in taking cultures for the release of cases of diphtheria, we examine a large number of throats each year, and our experience is that one cannot tell from the appearance at the time whether a case will be rapid or slow in clearing up. It has happened often that a large tonsil may be rapid in clearing up and, on the other hand, an innocent looking small tonsil, from which no pus could be expressed, will retain the infection for weeks. I believe that the history of the behavior of the tonsils is a better guide for or against the removal than any other single factor. Of course, if tonsils are so large as to interfere with breathing, from a mechanical standpoint, or if there is obviously a large amount of pus in them, it is easy to decide; but in borderline cases, and in those small innocent looking ones, a careful consideration of their past behavior gives us a better idea of their condition than any inspection possibly can.

In the issue of February 18 was an interesting note on vaccinia of the lip by Dr. Alfred Schalek. This brings to my mind a rather unusual case of smallpox I observed in a 5 months old baby about two years ago during an epidemic of about seventy-five cases occurring in the Long Beach section of this county. Every member, with the exception of the father, who submitted to vaccination to obtain a working permit, developed smallpox. The family consisted of the mother, four children, and the baby. The children all exhibited the typical but mild form of smallpox we so often encounter. The mother had a more severe case by far than the children, and the baby, whom she was nursing, a few days after slight prodromal symptoms, developed a single lesion on the middle of the forehead. This lesion resembled a vaccination more than a smallpox lesion, but as nobody in the house had been vaccinated, with the exception of the father, who was living separately, it could not have been a vaccination lesion. This lesion went through all the stages that a vaccination lesion would go through, but resulted in a small, unnoticeable scar. The time is shown in that the lesion first appeared, March 24, and the scab fell off, April 8. I was forced to conclude that it was a case of smallpox with a single lesion.

J. W. Robinson, M.D., Los Angeles.
Deputy Health Officer, Los Angeles County.

METHOD FOR REMOVING ADHERENT SYRINGE PISTONS

To the Editor:—I do not remember of having come across a method similar to that described below for removing adherent syringe pistons, a procedure which frequently becomes necessary as the result of the drying of serum, blood, sugar solutions, etc. I thought this might be of service to your readers.

The method utilizes contraction and expansion, physical changes which accompany the cooling of the syringe with its adherent piston by placing it on ice for ten minutes, more or less, and rapidly warming the barrel over a small flame or water at from 40 to 50 C. The barrel, being the part first warmed, will expand first, leaving the cold plunger behind and thus breaking the adhesion. A continuous pull on the handle of the piston before it becomes warmed and expands will invariably separate it from the barrel. To be successful, therefore, the warming of the barrel and the traction on the piston must be accomplished in a few seconds.

I have found this method particularly effective with record syringes, in which the coefficient of expansions of the barrel and piston are different. It is, however, equally good on all glass instruments. The operation is rapid and does not alter the fit of the plungers, as the acid method, for example. When acid, antiformin, boiling in glycerin, etc., failed, this method succeeded.

Cristobal Manalang, M.D., Zamboanga, P. I.
Division Bacteriologist, Philippine
Health Service.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"A PLETHORA OF PHYSICIANS"

Referring to the item on this subject published in Correspondence in The Journal last week, a physician in Nebraska writes: "Nebraska is a very healthy state. One needs a large territory to make even a decent living. Let me cite a few examples with which I am familiar: a town of 1,100 with five physicians, all 'up and coming,' and not one making any money; a town of 900 with four physicians, one of whom is making money, but he is of a very unusual type; a town of 2,200 with six physicians, not so bad, but none of them is making any money, and the town has territory only on one side; a county seat of 10,000 with sixteen physicians; the work is practically all in town, and one third the number could take care of it easily, so that none of them is making any money.' By 'making money' I mean getting a little more than one needs for a living. These conditions are typical of eastern Nebraska, with a few exceptions."

Alcoholism in Germany.—The *Deutsche medizinische Wochenschrift* relates that in 1913 the number of cases of mental disease of alcoholic origin interned in the various institutions of Germany totaled 7,744. During the war the number constantly declined, being only 1,034 in 1918. Since the war, there has been a progressive increase to 1,979 in 1920. It quotes some recent figures that, in four months, French wines and brandies to a total of 990 millions had been imported into Germany through the Ems customs house.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.
California: Los Angeles, April 11. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.
Colorado: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
District of Columbia: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.
Hawaii: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.
Idaho: Boise, April 4. Director, Mr. Paul Davis, Boise.
Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.
Minnesota: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.
Montana: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
Nevada: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.
New Mexico: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.
Oklahoma: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.
Porto Rico: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.
Rhode Island: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.
Utah: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

Texas November Examination

Dr. Thomas J. Crowe, secretary, Texas State Board of Medical Examiners, reports the oral and written examination held at Dallas, Nov. 15-17, 1921. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Tulane University	(1921)	89.7
Johns Hopkins University	(1920)	87.5
University of Tennessee	(1921)	83.5
Baylor University	(1921)	90.2, 91
Fort Worth School of Medicine	(1918)*	81.3

* Graduation not verified.

Delaware December Examination

Dr. P. S. Downs, secretary, Delaware State Board of Medical examiners, reports the oral, written and practical examination held at Wilmington, Dec. 13-15, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Number Licensed
Jefferson Medical College	(1920), (1921)	2
Temple University	(1920), (1921)	2
University of Pennsylvania	(1920)	1

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tufts College Medical School	(1909)	New Hamp.
Jefferson Medical College	(1920)	Maryland
Temple University	*	Penna.
University of Pennsylvania	(1919)	Penna.

* No year of graduation given.

Kentucky December Examination

Dr. A. T. McCormack, secretary, Kentucky State Board of Health, reports the oral, written and practical examination held at Louisville, Dec. 6, 1921. The examination covered 12 subjects and included 120 questions. An average of 70 per cent. was required to pass. Of the 9 candidates examined, 5 passed and 4 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Kentucky University Medical Department	(1906)	78
University of Louisville Medical Department	(1875)	70, (1897) 79, (1922)* 84
Jefferson Medical College	(1921)	87
FAILED		
University of Louisville Medical Department	(1911)	60
Kansas City University of Phys. and Surgs.	(1919)	71 †
Meharry Medical College	(1910) 38, (1921)	64

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Kentucky School of Medicine	(1898)	Illinois
University of Minnesota	(1895)	Minnesota
Memphis Hospital Medical College	(1912)	Mississippi
Tennessee Medical College	(1908)	Tennessee
University of Virginia	(1919)	Virginia

* Diploma withheld until 1922.
† Fell below 60 per cent. in more than one branch.

Book Notices

The Vitamins. By H. C. Sherman, Professor of Food Chemistry, Columbia University, and S. L. Smith, Specialist in Biological and Food Chemistry, United States Department of Agriculture. Cloth. Price, $4 net. Pp. 273, with 20 illustrations. New York: The Chemical Catalog Company, Inc., 1922.

This is one of the series of scientific and technologic monographs published by the American Chemical Society, one of the purposes of which is to promote research by furnishing a well digested survey of the progress made in the field of science covered by the monograph. "The Vitamins" fulfils this purpose, as it is probably the best digested survey available on the subject with which it deals. As the authors point out in the preface, the book is designed to summarize our present knowledge of vitamins in as judicial a manner as possible. The chemical nature of the vitamins is still unknown, but a vast amount of practical scientific information has been developed regarding these somewhat elusive factors in our foods. The greater part of the text of this book was written near the middle of 1921, but on some points the authors have brought their summary down practically to January, 1922.

The first chapter is an historical introduction to the vitamin theory. Our present point of view in regard to this branch of food chemistry, it is pointed out, is a development rather than a discovery, and much of that development antedates the introduction of the word vitamin. In discussing the question of terminology, the authors refer to the lack of harmony between the alphabetical sequence and the historical sequence. "Fat-soluble A" was so designated because McCollum in his earlier experiments unwittingly furnished a water-soluble vitamin in what he supposed were vitamin-freed foodstuffs. He was thus led to conclude that the only unidentified substance essential to normal nutrition was the fat-soluble substance of butter, eggfat, etc., which he called "fat-soluble A." Water-soluble B was, as a matter of fact, discovered much earlier by Eijkman who, between 1890 and 1896, discovered that he was able to prevent or cure nutritional polyneuritis in fowls (produced experimentally by feeding polished rice) by giving the birds an extract of the rice polishings. Sherman and Smith, therefore, in their detailed discussion of the three vitamins follow the historical rather than the alphabetical sequence and take up first the antineuritic vitamin (vitamin B). In the chapter following the antiscorbutic vitamin (vitamin C) is dealt with, and still later the fat-soluble vitamin (vitamin A). A lucid summary of the properties of each vitamin is given at the end of each chapter.

Then comes, what to the average physician will be probably the most interesting and valuable chapter in the book, that dealing with "Vitamins in the Problem of Food Supply." This deals with the place of vitamins as a practical problem in providing an adequate and economical food supply. The authors point out there are certain essentials to an adequate food supply: (1) sufficient quantities of digestible organic nutrients to yield the energy necessary (calories); (2) sufficient suitable protein; (3) suitable proportions and adequate amounts of certain mineral or inorganic elements, and (4) the necessary amount of each of the three vitamins. Sherman and Smith hold that it is unfortunate that we have, in the past, expressed the energy value of foods and the energy needs of the body in terms of calories because, as they point out, the body is not essentially a heat engine. They quaintly and accurately suggest that the old steam engine analogy might better be supplanted by likening the body to a gasoline engine in which the energy comes not from heat, but from the chemical reaction involved in the oxidation of the fuel. Carrying out their new analogy further, they compare the organic nutrients (fats, proteins, carbohydrates) to the fuel (gasoline); the proteins and some of the mineral matters to the material of which the motor is made; other mineral matters to the lubricant, while the vitamins are the ignition sparks, insignificant in energy per se, but without which the engine cannot run.

In this chapter, too, is an excellent table based on that of the British Medical Research Committee as modified by Rose and giving an idea of the relative richness of many of the commoner foodstuffs in one or more of the three vitamins. Finally, there is a most elaborate bibliography. The book can be recommended not only to those who are making a special study of the problems of nutrition, but also to those interested in getting an intelligent grasp of our present scientific knowledge of these comparatively new and unique factors in our food supplies—the vitamins.

Warfare in the Human Body. Essays on Method, Malignity, Repair and Allied Subjects. By Morley Roberts. Introduction by Professor Arthur Keith, M.D., F.R.C.S., F.R.S. Cloth. Price, $7. Pp. 286. New York: E. P. Dutton Company, 1921.

The lay contributor to science usually discusses subjects about which he has no fundamental knowledge, and his views are of but transient interest to the scientist. However, when such a contribution comes with a personal introduction by no less an authority than Prof. Arthur Keith and bearing the name of Mr. Morley Roberts, a writer of note, the views merit consideration. In his first essay, Mr. Roberts conceives of the body as a field in which the epithelial tissue constantly contends with connective tissue for domination. When the latter is unable to inhibit the growth of the former, carcinoma results. The influences controlling such inhibition, he believes, arise in the glands of internal secretion. Mr. Roberts presents his theory with the usual background of carcinoma theories, i. e., a general condemnation of all other theories thus far advanced. On the whole, his views are original and logical. They are weak, however, in the one significant fact that they have no actual foundation in experimental evidence. His other essays likewise deal with the theories of immunity and with the continual combats that go on within the human body. While the articles dealing with organic changes are of considerable interest, the four essays entitled "The Cannibal in Evolution," "Heredity and Environment," "Origin of Therapeutic Bathing," and "Pharmakos and Medicine," are philosophical and consequently interesting. The literary style is beautiful; it is an example of how scientific literature may be real literature.

Investigation on Soil Pollution and the Relation of the Various Types of Privies to the Spread of Intestinal Infections. By I. J. Kligler, Ph.D. Monographs of the Rockefeller Institute for Medical Research, No. 15. Paper. Pp. 75. New York: The Rockefeller Institute for Medical Research, 1921.

This monograph is a contribution of great value to our knowledge of the viability of the typhoid and dysentery bacilli in excreta and in the soil. Investigations were made both in the laboratory and in the field with various types of privies and septic tanks, and in the laboratory with soils of different characters. Typhoid bacilli were found to survive longer in stored feces than in pit privy material. In septic fluids, survival was dependent on the alkalinity—the higher the alkalinity, the more rapidly were the organisms destroyed. Dysentery bacilli were much less resistant than were the typhoid germs. In soil, the two organisms behaved alike. The death or survival in soil depended on three factors: (1) Moisture. The greater the content of moisture, the longer did the organisms survive. (2) Reaction. In acid soils the organisms disappeared rapidly, all being dead on the tenth day. (3) Metabolic products of soil organisms. Of the bacteria tested, only *B. fluorescens* produced any marked effect. Laboratory experiments also showed that typhoid and dysentery bacilli had little tendency to spread laterally from a polluting source. The investigation also included extensive studies on ground pollution in the neighborhood of pit privies and septic tanks. The extent of pollution was measured by using *B. coli* as an index. This contamination was found to extend laterally only about 3 feet (91 cm.), and downward from 3 to 5 feet (91 to 152 cm.). A number of contaminated wells were examined, and the conclusion reached that surface contamination was of greater import than privy pollution. This would depend, however, on the relation between the ground water level and the bottom of the privy or outlet of the septic tank. When this distance is from 10 to 15 feet (3 to 4.5 meters) there is little danger of polluting the ground water supply. The author points out that more attention should be paid to water supplies in rural districts, and particularly to the protection of such supplies against surface water contamination.

Diseases of the Nervous System. By H. Campbell Thomson, M.D., F.R.C.P., Physician to the Department for Diseases of the Nervous System, and Lecturer on Neurology, Middlesex Hospital. Third edition. Cloth. Price, $5. Pp. 566, with 143 illustrations. New York: Paul B. Hoeber, 1921.

The author has fallen into the error of combining under the cover of a comparatively small volume the description of the psychoneuroses alongside the organic diseases of the nervous system. The chapter on the psychoneuroses (a little more than thirty pages) is entirely inadequate, giving only a meager exposition of the symptoms of functional disorders and their treatment. The same must be said about the chapter on exophthalmic goiter—not a word in it about the changes in general metabolism or the tests to ascertain them. Demographia is not mentioned as a symptom. The sections that descripe the anatomy, physiology, paths of infection of the central nervous system and the diseases of the peripheral nerves, muscular atrophies, and disease of the spinal cord are well done. The illustrations are numerous and well selected. In the chapters on dementia paralytica and tabes dorsalis, little is said about serologic and cytologic findings. No mention is made of the gold chlorid test, and the globulin reactions are not sufficiently explained. A new chapter on epidemic encephalitis includes a meager description of symptoms, while mental symptoms and mental sequelae of the disease are entirely overlooked.

The Care of Eye Cases. A Manual for the Nurse, Practitioner and Student. By Robert Henry Elliot, M.D., B.S., Sc.D., Lecturer in Ophthalmology, London School of Tropical Medicine. Cloth. Price, $4.50. Pp. 172, with 135 illustrations. New York: Oxford University Press, 1921.

There are three separate parts to this really invaluable manual. The first part deals with the anatomy of the eye, briefly but sufficiently for the needs of the nurse, and the technic of nursing in purely ophthalmic cases. The second part describes the commoner diseases of the eye and orbit, and mentions the remedial measures used in the different conditions. The third part is in the nature of an appendix devoted to the ophthalmic armamentarium, describing the instruments by word and picture, as well as outlining the instruments needed for the various types of operations. Throughout, the diction is clear, and unnecessary verbiage is avoided. The illustrations really illustrate, crudely at times, but satisfactorily. As a whole, this manual may be perused to advantage by "nurse, practitioner and student," and hospitals would do well to require a study of this book by the undergraduate nurses.

The Morphologic Aspect of Intelligence. By Sante Naccarati, M.D., ScD., Ph.D. Columbia University Contributions to Philosophy and Psychology, Volume 27, No. 2. Cloth. Price, $1.10. Pp. 44. New York: G. E. Stechert & Co., 1921.

This little book contains one or two very suggestive ideas. Naccarati concerns himself with attempting to show that the macrosplanchnics, whose trunks are larger than average in proportion to the limbs, neck and head, are less intelligent than the microsplanchnics, whose trunks are relatively small. This fact may be related to the idea that the trunk is the seat of the vegetative functions, matters purely of maintenance of life, whereas it is by means of the rest of the organism, the organs of locomotion and intelligence, that man makes and maintains his contacts with the rest of the world, and a man's intelligence is judged by the success of these contacts. There are some tables of measurements of interest to the seeker after academic information.

Medicolegal

Malpractice Liability to Compensated Workman—Duty of Oculist

(Wood v. Vroman (Mich.), 184 N. W. R. 520)

The Supreme Court of Michigan, in reversing a judgment that the plaintiff obtained, and ordering a new trial, says that while the plaintiff was working in an automobile repair shop, dust and a piece of steel were blown into his right eye. He was unable to remove the steel with his handkerchief, and a fellow workman failed in an effort to remove it. The next morning, the plaintiff went to the defendant's office. As his cause of action, the plaintiff alleged that after the defendant had removed the bit of steel, he opened an ulcer and with a piece of cotton wiped some of the pus from the ulcer into the fresh wound, thereby infecting it and causing the blindness which followed. The plaintiff received $1,000 from the insurance company by which his employer was protected under the workmen's compensation law.

It was urged that, under the evidence, the infecting germs might have been introduced into the eye from the dirt blown into it, from the hands or the handkerchiefs of the plaintiff or his fellow workman, or in the discharge from the pustule, and that the jury should not have been permitted to guess or speculate about it. But the plaintiff was not required to prove to an absolute certainty that the infection was caused by the introduction of the germs in the pus. He was required to establish facts from which such an inference might fairly be drawn by the jury. That the infection might have been due to another cause was a matter of defense. A physician testified that it ordinarily took about twelve hours for such an infection to manifest itself, and that, assuming that up to the end of a period of twenty hours there had been no pain, no increased flow of tears, no perceptible inflammation or swelling, the probabilities would be that serious infection did not exist. This was sufficient to justify the submission to the jury of the question whether the loss of the plaintiff's eye was due to the action of the defendant in wiping the pus from the ulcer across that part of the eye from which the steel had been removed and whether such action was malpractice on the part of the defendant.

There was no question that the plaintiff here sought to recover for the same loss for which he had been compensated by the insurance company. It was true that he obtained such payment by representing that the loss of his eye was caused by the injury received while at work in the factory. But the doctrine of estoppel had no application. Even though it be conceded that "the employer is liable for resultant injuries which include an alleged act of malpractice," the plaintiff's claim was not based on any such resultant injury. To render the employer liable in such a case, the injury must result from necessary efforts to relieve from the consequences of the original injury, whereas the plaintiff's right to recover was based on the claim that, after the defendant had completed the work of removing the steel, he then, with the plaintiff's permission, opened the pustule on the eyelid, and, while removing the pus therefrom, caused the infection. Furthermore, while it was true that under his own testimony the plaintiff recovered compensation from the insurance company to which he was not in law entitled, this could not be considered by the jury in its award of damages. If the defendant was guilty of the tort complained of, he could not relieve himself from liability by showing that the plaintiff had received compensation on account thereof from any other source, except through payment by a joint wrongdoer. The fact, however, that, in a sworn statement sent to the industrial accident board, the plaintiff claimed that the loss of his eye was due to the injury received in the factory, while not conclusive against him as an estoppel, was persuasive as evidence, and, when requested by the defendant, the attention of the jury should have been particularly called to it.

While the defendant held himself out as a specialist in the treatment of the eyes, the test as to whether his treatment was proper should not have been based on what another eye specialist would have prescribed. The defendant was obligated to bring to the discharge of his duty that degree of skill and knowledge possessed by physicians who are specialists, in the light of present day scientific knowledge. The other eye specialist referred to might have been asked whether the treatment prescribed evidenced the exercise of such skill and knowledge on the part of the defendant; he should not have been permitted to state the treatment he would have used.

Requirements and Liability in Actions for Services

(Fincher v. Davis (Ga.), 108 S. E. R. 905)

The Court of Appeals of Georgia, Division No. 2, had here an action brought by plaintiff Davis to recover for professional services rendered to the wife of defendant Fincher. In affirming a judgment in favor of the plaintiff, the court prepared a syllabus of the points it decided, without any statement of facts beyond those incidentally mentioned in the syllabus. According to the syllabus, a person professing to practice surgery or the administering of medicine for a compensation must bring to the exercise of his profession a reasonable degree of care and skill. Any injury resulting from a want of such care and skill will be a tort for which a recovery may be had. The exercise of this degree of care and skill is the measure of professional duty in all cases; and whether this degree of care and skill has been exercised in a given case is a question of fact for the jury. In determining such an issue, the jury may consider all the attendant facts and circumstances which may throw light on the ultimate question.

In an action by a physician and surgeon to recover the value of professional services rendered, the burden is on him to prove that he is a physician, that he was employed as such, and that he rendered the services alleged, and to show the value of such services as represented by the ordinary and reasonable price for services of that nature. In such an action (as well as in a suit brought by a patient for malpractice), the presumption is that the surgical or medical services were performed in an ordinarily skilful manner, and the burden is on the person receiving the services to show a want of due care, skill, and diligence. When a physician or surgeon renders necessary professional services for a wife, with her consent, the husband is primarily liable therefor, even in the absence of any express consent on his part. The charge of the court in this case that if the operation was performed "wholly without any authority from this defendant, then the plaintiff would not be entitled to recover a fee for such operation," was more favorable to the defendant than the rule required.

The private physician and surgeon of the wife, who was familiar with the case and all the attendant facts and circumstances, and who witnessed the operation, being asked: "Was this operation done in a skilful manner?" answered, "Yes, sir." The question and answers were objected to on the ground that they trenched on the province of the jury in seeking and eliciting a conclusion on the main issue in the case. But the opinion of an expert on any question relating to his profession is always admissible, when given in response to a hypothetical question based on the testimony of witnesses other than himself, or when, as here, the expert has himself observed the facts, and gives his opinion based on his own observation.

The court charged the jury that, in considering whether the plaintiff in his diagnosis, care, and treatment of the defendant's wife exercised ordinary care and skill, the jury might not set up a standard of its own, but must be guided in that regard solely by the testimony of physicians; and that if the jury was unable to determine from the testimony of physicians and surgeons what constituted ordinary care and skill under the circumstances, then there was a failure of proof on the only standard for the guidance of the jury, the evidence was insufficient to sustain the defendant's plea of negligence, and the jury should find for the plaintiff a reasonable amount for the services rendered. The trial judge was manifestly seeking to impress on the jury that they were unauthorized to impose any other, capricious standard; and while the language may not have been strictly accurate, in that the recognized methods employed by physicians and surgeons in the performance of such an operation might conceivably be shown by persons other than members of the medical profession, yet, since in point of fact the only testimony introduced along that line was that of physicians and surgeons, the inaccuracy of expression must necessarily have been harmless. The charge complained of, while it may have sought to limit the methods of proving the specific duties owing by the plaintiff, by confining such proof to testimony of physicians and surgeons, did not, as urged, thus limit the proof of negligence. "A reasonable degree of care and skill" must be taken to be such as, under similar conditions and in like surrounding circumstances, is ordinarily employed by the profession generally.

What Constitutes Medical Services

(Golden's Case (Mass.), 132 N. E. R. 726)

The Supreme Judicial Court of Massachusetts, referring to the workmen's compensation act of that state, says that the statute provides for the payment of only physicians and hospitals. Under the procedure considered, that which is to be furnished is "adequate and reasonable medical and hospital services, and medicines, when they are needed." Detailed provisions as to the selection of a physician are set forth. While the term "medical services," if used without limitation, may be susceptible of a broad construction, the statutes cited clearly indicate that those words, as therein used, are restricted to medical assistance rendered by the physician or under his direction and control. It was not necessary to decide in this case whether payment for medical services for a period commencing nearly a year and a half after the accident could rightly have been ordered by the industrial accident board. Nor was it necessary to decide whether massage may be employed in connection with or as a part of treatment, by a physician, and under such circumstances properly classed as medical services. In this case the employee received an injury to his shoulder, resulting in the complete atrophy of his right hand and arm, and massage was performed, so far as it appeared, solely on his request and not as a part of treatment by a physician. It was not medical service within the statute, and the insurer was not liable therefor in this proceeding.

No Evidence of Negligence Against the Defendants

(Wecker v. Hamel et al. (Minn.), 184 N. W. R. 1025)

The Supreme Court of Minnesota says that the plaintiff sought to recover damages for the death of his infant child on the ground that the defendants, as physicians and surgeons, negligently failed to diagnose the ailment of the child correctly, and treated it improperly. But the court is unable to find any evidence in the record tending to show that the defendants' diagnosis was incorrect, or their treatment improper. It also fails to find any error in the rulings admitting or excluding evidence. The plaintiff urged that an operation was performed on the child without the consent of its parents. After one of the defendants had treated the child for two or three weeks, it was, at their suggestion, taken to a hospital by its parents, where some sort of an operation seemed to have been performed. The nature and extent of the operation did not appear, but apparently it consisted in opening an abscess in the neck or throat of the child. Neither did it appear who performed the operation or whether either of the defendants was present or had anything to do with it. This action was brought under the statute which provides that when death is caused by the wrongful act or omission of any person, the personal representative of the decedent may maintain an action therefor. But there was no evidence that this operation was not necessary and proper treatment, and properly performed, or that it had any part in causing the death of the child. In short, there was an utter absence of proof tending to show actionable negligence on the part of either defendant, and the order which was made denying the plaintiff a new trial, after a verdict had been directed for the defendants at the close of the plaintiff's evidence, is affirmed.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
American Dermatological Association. Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia. Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Atlantic City, May 26-28. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Excelsior Springs, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. Frederick A. Spafford, Flandreau, Secretary.
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1922, **23**, No. 3

*Chronic Diffuse Nephritis in Childhood. Report of Case with Review of Literature. C. H. Greene, Rochester, Minn.—p. 183.

*Antiscorbutic Property of Fruits. II. Experimental Study of Apples and Bananas. M. H. Givens, H. B. McClugage, and E. G. Van Horne, Rochester, N. Y.—p. 210.

*Indices of State of Nutrition in Children. H. Gray and G. H. Edmands. Boston.—p. 226.

*Results Following Administration of Alkali Phosphates to Spasmophilic, Rachitic and Normal Infants. J. K. Calvin and M. P. Borovsky, Chicago.—p. 238.

*Studies of Infant Feeding. XVI. Bacteriology of Feces and Food of Normal Babies Receiving Breast Milk. E. W. Brown and A. W. Bosworth, Boston.—p. 243.

Case of Alkaptonuria in Infants. J. B. Bilderback, Portland, Ore.—p. 259.

Chronic Diffuse Nephritis in Childhood.—A study of the reported cases of chronic nephritis in childhood, Greene states, indicates that chronic diffuse nephritis is a distinct clinicopathologic entity of probable congenital origin though no definite etiology may be ascribed. It is characterized by evidences of functional insufficiency of the kidneys dating from early infancy. Children so affected show great developmental disturbance with associated stunting backwardness in growth, difficulty in feeding, anemia and rachitis. The renal insufficiency is more directly evidenced by the excretion of large volumes of dilute urine with a low specific gravity. This urine contains a slight amount of albumin, and casts are present in small numbers. In those cases in which it has been determined, the phenolsulphonephthalein excretion is low. Death usually results from uremia. The pathologic picture in those cases is similar to, if not identical with, the chronic diffuse nephritis of adults. The literature is reviewed and one case is reported.

Antiscorbutic Property of Bananas and Apples.—The experiments reported on by Givens and his associates demonstrate that the raw apple and the raw banana are antiscorbutic agents. However, if either of these foods is subjected to any considerable temperature treatment, such as ordinarily employed in preservation by desiccation or canning, the amount of antiscorbutic vitamin in the original raw material is markedly reduced.

Indices of State of Nutrition in Children.—Although their ideal tables seem to Gray and Edmands to be the most exact by a slight margin, they admit that it is quite probable that for general use, on adults and children alike, the most satisfactory method hitherto proposed for estimating the correct weight of a normal person is the combination of Dreyer and Hanson's weight for stem and weight for chest tables, with the modification that the chest girth used be what they have called the mean girth rather than the resting girth advocated by Dreyer.

Alkali Phosphates in Spasmophilia and Rickets.—Calvin and Borovsky state that the administration of from 0.55 to 0.60 gm. potassium diorthophosphate (K_2HPO_4) or sodium diorthophosphate (Na_2HPO_4) per kilogram body weight per twenty-four hours to infants neither activated latent spasmophilia nor produced symptoms resembling spasmophilia. Even the superimposing of acute intercurrent infections in a number of cases, plus the administration of the phosphates, did not precipitate spasmophilic manifestations. Hence, the authors are unable to confirm the results of Jeppson and Klercker.

Bacteriology of Feces and Food of Normal Breast Fed Babies.—A bacteriologic study of the feces and the food of normal babies receiving breast milk was made by Brown and Bosworth. During the investigation a "bifidus-like" bacillus was isolated from the breast milk and from the skin around the nipple. It differs from *B. bifidus* as isolated from nurslings' feces in one respect only, namely, its ability to grow well initially under aerobic conditions. *B. bifidus* is the dominant living type of organism in the feces of normal breast fed babies.

American Journal of Physiology, Baltimore

February, 1922, **59**, No. 1

Origin of Free Cells of Serous Exudates. R. S. Cunningham, Baltimore.—p. 1.

Influence of Epinephrin on Metabolism in Isolated Skeletal Muscle. G. Martin and R. B. Armitstead, San Francisco.—p. 37.

*Cerebral Function in Learning. IV. Vicarious Function after Destruction of Visual Areas. K. S. Lashley, Minneapolis.—p. 44.

*Motility of Duodenum and Relation of Duodenal Activity to that of Pars Pylorica. H. Wheelon and J. E. Thomas, St. Louis.—p. 72.

*Activities of Intestinal Mucosal Motor Mechanism. C. E. King and L. Arnold, Nashville, Tenn.—p. 97.

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*Id. II. Influence of Epinephrin on Volume of Perfused Kidney. A. N. Richards and O. H. Plant, Philadelphia.

*Action of Minute Doses of Epinephrin and Pituitary Extract on Kidney. A. N. Richards and O. H. Plant, Philadelphia.—p. 191.

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Effect on Cold Blooded Heart of Changes in Ionic Content of Perfusate. I. Normal Mechanism; II. Arrhythmias. E. C. Andrus and E. P. Carter, Baltimore.—p. 227.

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Some Plant Sources of Vitamins B and C. F. O. Santos, New Haven, Conn.—p. 310.

Effect of Vitamin Deficiency on Various Species of Animals. II. Comparative Vitamin A Requirement of Rabbits, Rats, Swine and Chickens. V. E. Nelson, A. R. Lamb and V. G. Heller, Ames, Ia.—p. 335.

*Reflex Produced by Chemical Stimulation of Deeper Respiratory Passages. E. H. Craigie, Chicago.—p. 346.

*Influence of Glands with Internal Secretions on Respiratory Exchange. III. Effect of Suprarenal Insufficiency (by Removal) in Thyroidectomized Rabbits. D. Marine and E. J. Baumann, New York.—p. 353.

Paradoxical Pupil Dilatation Following Lesions of Afferent Paths. J. Byrne, New York.—p. 369.

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*Vasoconstriction from Warmth Stimulation. E. G. Martin and L. A. Jacoby, San Francisco.—p. 394.

Application of "All or Nothing" Principle of Nervous Conduction to Interpretation of Vasomotor Reflexes. E. G. Martin, San Francisco.—p. 400.

Hydrolysis of Sucrose in Human Stomach. R. M. Hill and H. B. Lewis, Urbana, Ill.—p. 413.

Myogenic Nature of Rhythmic Contractions of Intestine. W. C. Alvarez, San Francisco.—p. 421.

Effects of Galvanic Current on Segments of Intestine. W. C. Alvarez and L. J. Mahoney, San Francisco.—p. 431.

Activation of Glandular Stomach of Fowl. J. B. Collip, Edmonton, Alberta, Can.—p. 435.

Vicarious Functioning for Visual Area.—The normal visual area of the cerebrum was destroyed by Lashley in fourteen rats. The animals were then trained to discriminate differences of light intensity. When the habit was acquired a second operation destroyed some other cerebral area and tests were made to determine the loss or retention of the habit after this operation. The habit survived the destruction of any given third of the cortex left intact by the first operation. Only a small area in contact with the floor of the cranial cavity remained unexplored and Lashley feels that there is no cerebral localization in vicarious functioning for the visual area.

Motility of Duodenum.—Observations made by Wheelon and Thomas showed that the antrum, pyloric sphincter and first part of the duodenum in the dog each possesses definite rhythmic cycles which bear a constant relationship and show a dependence on each other, that is, parts excited cranialward travel caudalward to excite lower segments. The three portions, therefore, show progressive motility which occurs in a definite sequence and in a manner which may normally cause material to leave the stomach and to be delivered into portions of the intestine below the first portion of the duodenum.

Activities of Intestinal Mucosal Motor Mechanism.—King and Arnold state that intestinal mucosa as a whole exhibits movements which may be designated as ridging, grooving and pitting. The intestinal mucosal motor mechanism is set into activity by mechanical stimulation, by heat, irritants and by epinephrin, pilocarpin, atropin, nicotin and barium. The mucosal motor mechanism is most active and reactive in the duodenum and upper jejunum, less so in the lower jejunum and almost refractory in the ileum. The metabolic gradient of Alvarez is suggested as the basis for a possible explanation.

Permeability of Placenta.—Bourquin found that agglutinins and hemolysins tend to come to essentially the same concentration in the maternal and fetal blood, the difference between the two being relatively slight. Diphtheria antitoxin passes rapidly from fetus to mother, slowly from mother to fetus. Normally the concentration of diastase in the fetal blood is lower than that of the maternal blood. An increase in the concentration of the maternal blood diastase is followed by a relatively slight increase in the diastase content of the fetal serum in some cases.

Urine Formation in Perfused Kidney.—The influence of alterations in renal blood pressure on the amount and composition of urine was studied by Richards and Plants. Changes in perfusion pressure induced by splanchnic stimulation, by introduction of epinephrin and nitroglycerin, by compression of the renal vein and by stimulation of the medulla were accompanied by parallel changes in the rate of urine elimination. The results are believed to constitute direct evidence in support of the filtration hypothesis of glomerular function.

Action of Epinephrin on Kidney.—When the kidney of the dog or rabbit was excised and perfused with herudinized blood at a constant rate of blood flow, the addition of a small amount of epinephrin to the blood caused rise in perfusion pressure and swelling of the kidney. The result is interpreted by Richards and Plant as evidence that the vas efferens is constricted by epinephrin with consequent rise of intraglomerular pressure and distention of the malpighian bodies. It is regarded as explanatory of the diuresis caused by epinephrin, splanchnic stimulation and medullary stimulation.

Action of Epinephrin and Pituitary Extract on Kidney.—Richards and Plant found that under the influence of minute doses of epinephrin and pituitary extract, blood flow through the kidney may be decreased, while the kidney volume and urine elimination may be increased. Considerations are presented in support of the belief that this combination of events reveals a slight degree of constriction of the efferent vessels, with consequent increase in glomerular pressure. The experiments are interpreted as being on the problem of glomerular regulation of urine formation.

Effect of Suprarenal Feeding on Iodin Content of Thyroid.—Black et al. found that epinephrin, generally believed to represent the active principle of suprarenal, produces much less effect than the nucleoprotein material from the entire gland. A somewhat hydrolyzed aqueous extract of the entire beef suprarenal when fed by mouth can produce in forty-five days a gain in the iodin content of the dog's thyroid gland amounting on the average to 70.4 per cent. The suprarenal nucleoprotein material obtained from the entire beef suprarenal, when fed in large dosage, shows an average increase of 50.7 per cent. of the iodin content.

Regeneration of Blood.—Hemorrhages of approximately one third of the estimated total blood volume Jencks found can be borne by albino rats without interfering with complete recovery. When one half or more of the blood was removed by hemorrhage, death ensued. By varying the diet from elimination of one factor to elimination of all but one factor, the speed of regeneration of blood was changed, but with each diet the organism replenished its normal supply of blood to the original values for red cells and hemoglobin. Protein permitted more rapid blood regeneration than either carbohydrate or fat when fed as a sole nutrient (2 gm. daily). The diets of vitamin rich food, even in very small amounts gave somewhat more speedy regeneration than any other diet containing one food factor only.

Effect of Exercise on Blood Catalase.—Moderately severe muscular exercise increases the blood catalase, and with subsequent rest this returns to normal. The increase in oxidation brought about by muscular work is attributed by Burge and Leichsenring to the increase in catalase, and the decrease in oxidation with subsequent rest is attributed to the diminution in this enzyme.

Respiratory Reflex Produced by Chemical Stimulation.—The respiratory reflex obtained in dogs by stimulation of the deeper respiratory passages with ammonia and with ether was found by Craigie to consist of an increased expiratory effort and inhibition of inspiration, these two elements appearing in varying proportions. The vasomotor response consists of a rather gradual fall in blood pressure, followed at once by a somewhat slower return to normal. In some cases the fall is preceded by a brief rise in pressure of much smaller degree. Both the respiratory and the circulatory reflexes are entirely unaffected by section of both vagi, and Craigie suggests the probability that the afferent impulses concerned pass through sympathetic branches to the spinal cord and up it to the medulla oblongata.

Effect of Suprarenal Insufficiency on Thyroidectomized Rabbits.—Marine and Bauman noted that partial but sufficient destruction of the function of the suprarenal cortex in rabbits with intact thyroids usually leads to an increased heat production. Removal of the thyroid prevents or greatly lessens the increased heat production which usually follows partial destruction of the suprarenal cortex. While epinephrin in large amounts may stimulate the thyroid, it is believed that exhaustion or insufficiency of the regulatory, inhibitory and restraining effect of the cortical influence is a much more important cause of increased thyroid activity and increased tissue oxidations in rabbits. The authors suggest that these observations may have an important bearing on the etiology of both exophthalmic goiter and simple goiter of puberty, pregnancy, menstruation and menopause.

Vasoconstriction from Warmth Stimulation.—In nine out of eleven experiments made by Martin and Jacoby immersion of the lower part of the human body in water at about 45 C. was followed in seven seconds, on the average, by a drop in temperature of the skin of the small of the back averaging slightly less than 0.2 C. Accompanying this drop in temperature were well marked "goosefleshing" and sensation of chilliness. Martin and Jacoby interpret these findings as evidence that a large volume of nervous discharge, due to stimulation of a great many receptors for warmth, elicits, typically, reflex vasoconstriction. This interpretation is opposed to the view that vasodilatation is the specific reflex response to stimulation of the end organs for warmth.

American Journal of Psychiatry, Baltimore

January, 1922, 78, No. 3

- Case of Psychasthenic Delirium. P. Janet, France.—p. 319.
- Nature of Functional Disease. W. McDougal, Cambridge, Mass.—p. 335.
- Constructive Formulation of Schizophrenia. A. Meyer, Baltimore.—p. 355.
- Acute Psychoses with Symptoms Resembling Dementia Praecox. T. A. Hoch, Waverley, Mass.—p. 365.
- *Importance of Endocrine Therapy in Combination with Mental Analysis in Treatment of Certain Cases of Personality Deviation. E. R. Spaulding.—p. 373.
- Dementia Praecox and Adolescent Psychoses from Organic Visceral Viewpoint as Regards Prognoses and Therapy. D. J. McCarthy, Philadelphia.—p. 385.
- *Dementia Praecox and Syphilis. R. A. Greene, Hathorne, Mass.—p. 399.
- Laboratory Service in State Hospitals for Mental Diseases. H. I. Gosline, Howard, R. I.—p. 409.
- Note from Samuel Tuke to New York Hospital (1811). H. Viets, Boston.—p. 425.
- Prognosis of Involution Melancholia. A. Hoch and J. T. MacCurdy, New York.—p. 433.

Dementia Praecox and Syphilis.—In considering syphilis as a causative factor in relation to insanity, Greene cannot believe it has any relation in this respect to dementia praecox. Five of twelve cases studied by him were paranoid type and three paranoid preferred. The evidence is definite that one must not rule out possibility of neurosyphilis because patients are apparently suffering from dementia praecox. On the other hand, one may not always find that clinical and neurologic evidence of tertiary nerve syphilis is to be relied on if the spinal fluid findings are used for a criterion.

Annals of Surgery, Philadelphia

February, 1922, 75, No. 2

*Relationship of Massage to Metastasis in Malignant Tumors. L. C. Knox, New York.—p. 129.
*Treatment of Erysipelas with Chinosol and Sodium Chlorid. W. C. Lusk, New York.—p. 143.
*Von Recklinghausen's Disease or Osteitis Fibrosa; Report of Case Presenting Multiple Cysts and Giant Cell Tumors. J. K. Young and M. B. Cooperman, Philadelphia.—p. 171.
Neurofibromyxoma Treated by Conservative Operation. W. D. Gatch and J. O. Ritchey, Indianapolis.—p. 181.
*Ruptured Spleen; Report of Three Cases. R. F. Metcalfe and L. Z. Fletcher, Ft. Sam Houston, Texas.—p. 186.
*Cystic Dilatation of Common Bile Duct. P. J. Reel, Columbus, Ohio, and N. E. Burrell, Springfield, Ohio.—p. 191.
Surgery of Biliary Tract. A. M. Willis, Richmond, Va.—p. 196.
Results of High Ligation of Cystic Duct in Cholecystectomy. F. L. Hartman, C. M. Smyth, Jr., and J. K. W. Wood, Philadelphia.—p. 203.
*Duodenectomy: Experimental Study. F. C. Man and K. Kawamura, Rochester, Minn.—p. 208.
Comparative Analysis of 213 Forearm and Leg Fractures. A. H. Bixarro, London.—p. 221.
Dislocation of Pisiform; Case Report. I. Cohen, New York.—p. 238.

Relationship of Massage to Tumor Metastasis.—Study of human material in many ways suggests, but does not finally prove, the importance of massage as a means of inducing metastasis of tumor cells. In animals, on the contrary, very gentle massage for a total period of from two to five minutes distributed over a number of days has been shown by Knox to set free numerous particles of tumor which form emboli in the lungs. Such emboli produce metastatic tumors in a variable proportion of instances, depending on the growth activities of the tumor. Tumors which take in low percentages when implanted in the subcutaneous connective tissues give much fewer metastases than those of high virulence. Carcinoma and also sarcoma of the loose polyhedral cell type is easily generalized, but sarcoma of the compact spindle cell variety is not influenced. The importance of avoiding diagnostic or operative manipulation of a tumor in man is obvious. These observations are based on experimental work done on mice inoculated with nine strains of carcinoma and sarcoma.

Treatment of Erysipelas with Chinosol.—Lusk details his experience with the use of an ointment and a tincture of chinosol in the treatment of erysipelas. The formula for making the ointment is: cold, sterile water, ½ dram; add and dissolve powdered chinosol, 10 grains; then add sodium chlorid (reagent), 4 grains. Rub up, first with lanolin, ½ ounce, finally incorporating petrolatum, ½ ounce. This ointment, while applicable for use in the treatment of erysipelas affecting any skin area of the body, was generally used for all parts of the body only in children, its use in adults being generally limited to the face and ears. The formula for making the tincture of chinosol is: distilled water (10 parts), 1½ ounce, 48 minims. This is boiled and made cold in the icebox; then add and dissolve chinosol powder (2.5 per cent.), 192 grains; then add 95 per cent. alcohol (70 parts), 11 ounces, 1 dram and 36 minims; shake and add acetone (20 parts), 3 ounces, 1 dram and 36 minims. Shake and add without delay, because otherwise a precipitate of chinosol will soon begin to form. Add sodium chlorid (reagent), 96 grains. Shake vigorously from five to ten minutes. A flocculent precipitate will form which soon redissolves. The insoluble residue is sodium chlorid. Let stand over night and then strain through sterile cotton.

Osteitis Fibrosa in Negro.—The case reported by Young and Cooperman is said to be the only case on record in which a member of the colored race has been affected by this peculiar malady. The patient, female, aged 21, for the past four years has been bedridden because of fractures of the right and left femur. Within the past five years numerous bone tumors have appeared, involving the jaws and humeri.

Rupture of Spleen.—In two of the cases reported by Metcalfe and Fletcher the rupture was spontaneous. In the third case it followed a trauma. A splenectomy was performed with recovery in each case. The patients were aged 20, 21 and 22 years, respectively.

Cystic Dilatation of Common Bile Duct.—A patient, aged 56, first had symptoms at 20. Since this time her main discomfort had been gastric disturbance, intermittent jaundice, pain and tumor formation. So far as Reel and Burrell have been able to determine, this is the oldest patient reported in the literature with this condition. The cyst, containing approximately 8 liters, is, in all probability, the largest on record. The patient at the present time is enjoying good health and is able to attend to her household duties, the wound having healed. This is the thirty-sixth case of the kind on record. .

Effect of Duodenectomy.—An investigation was undertaken by Mann and Kawamura for the purpose of determining the effect of removing the duodenum. A one stage operation for removal of the duodenum was developed. The duodenum was removed from the dog, cat, hog, goat and monkey, although long continued observations were made only on the dog, cat and hog. Careful studies on these three species did not reveal any noticeable changes following the duodenectomy. In the dog observations were carried on more than two and one-half years after operation. The animals remained in good condition. No data have been secured to show that the duodenum is of great importance in any of the species studied. However, in two of the ten dogs studied a typical peptic ulcer occurred on the jejunal side of the gastrojejunal anastomosis. Whether this bears any relation to the loss of the duodenum or any specific part of it, as Brunner's glands, is to be determined.

Archives of Neurology and Psychiatry, Chicago

March, 1922, 7, No. 3

Reconstruction Course in Functional Anatomy of Nervous System. A. Meyer and L. Hausman, Baltimore.—p. 287.
*Intracranial Aneurysm of Vertebral Artery. H. G. Wells, Chicago.—p. 311.
Silver Diffusion Method for Staining Nerve Fibers in Paraffin Sections. W. Freeman, Philadelphia.—p. 321.
*Treatment of General Paresis by Intracistern Route. F. G. Ebaugh, Trenton, N. J.—p. 325.
*Incidence and Characteristics of Dysthyroidism as an Ex-Service Disability. With Especial Reference to Findings in Discharged Soldiers and Sailors, Examined for Bureau of War Risk Insurance (Now Veterans' Bureau), District No. 2. J. H. Huddleson and M. P. Bailey, New York.—p. 332.
Case of Hereditary Ataxia (Friedreich) with Anatomic Findings. J. A. F. Pfeiffer, Baltimore.—p. 341.
Two Recent Improvements in Staining of Spirochetes in Nervous Tissue. G. S. Stevenson, New York.—p. 349.
*Sinistrality and Muscle Coordination in Musicians, Iron Workers and Others. C. Quinan, San Francisco.—p. 352.

Intracranial Aneurysm of Vertebral Artery.—Wells reports the case of a colored man, who, with no clinical or anatomic evidence of syphilis, but with a history of severe cranial traumatism many years before, died of hypostatic bronchopneumonia, without giving marked evidence of increased intracranial pressure or of cranial nerve paralysis during his last illness. Necropsy examination revealed a large aneurysm of the left vertebral artery, causing much deformity about the cerebellopontile angle, compressing the sixth, seventh, eighth and ninth cranial nerves, occluding the left vertebral artery, and, by pressure on the aqueduct of Sylvius, causing distinct internal hydrocephalus. That the swelling had been present for a long time was indicated by the presence of a distinct grooving in the floor of the skull beneath it. A necropsy inquiry revealed that the patient had had roaring in the ears, dizziness and "spells" three years before his death. Neuralgic pain and infection about the gums led to the extraction of several teeth four months before death. Two months later there was an attack of syncope. Three weeks before death difficulty of speech, decreased vision and difficulty in swallowing appeared, terminating in hypostatic bronchopneumonia. As far as Wells could learn from the literature, this seems to be one of the largest vertebral aneurysms yet observed.

Treatment of General Paresis by Intracistern Route.—Puncture of the cisterna magna in the treatment of general paresis has been done by Ebaugh 250 times in twenty-eight patients. No accidents resulted from the punctures. The clinical and serologic results in the cases treated seem to justify further use of this method.

Thyroid Dysfunction and Neuropsychiatric Disorders.—The material reported on by Huddleson and Bailey consisted of ninety-four consecutive outpatient cases, clinically examined, of war veterans suffering from thyroid dysfunction accompanied by some neuropsychiatric disorder. They conclude: (1) that the incidence of dysthyroidism, increased by the war, is now in the decline but has not yet reached its prewar level; (2) that the bulk of this increase is made up of toxic nonexophthalmic, vagotonic cases, and cases transitional between this and the sympathicotonic type; (3) that many causes for the increase have been variously operative, none predominating; and (4) that there is a distinct tendency toward improvement in all types of toxic cases caused by the war.

Sinistrality and Muscle Coordination.—A study was made by Quinan of sixteen sinistral patients. Six admitted an unaccountable and capricious tendency to "bump into things." One is unable to "reverse" in waltzing. Of five who had studied instrumental music, two had made fair progress up to a certain point but considered that they had accomplished little for the outlay of time and money. Both are hampered by a defective sense of tempo and find "sight reading" an embarrassment. Two others abandoned the study of music because they were "unable to make any headway." The remaining one is a talented player but states that she still finds it difficult to "keep in time." Of these five musicians, two are left handed and left eyed, one is left handed and right eyed and two are right handed and left eyed. Five patients are free from motor symptoms. These patients seem to show: (1) that sinistrals are especially prone to various forms of muscle incoordination, and (2) that in some of these persons both the sense of equilibrium and the sense of rhythm are defective. Hoping further to elucidate the subject, a study of sinistrality in skilled manual workers was carried out. Three series of 100 men each, classified as (1) professional musicians, (2) machinists, and (3) male inmates of a public relief home, were also examined. Four per cent. of the machinists proved to be left-handed and an additional 4 per cent. had sinistral peculiarities. In striking 8 per cent. of left handedness was found among the musicians while the lesser forms of sinistrality mounted to 24 per cent. It was evident from this research that left handedness and sinistrality usually are indicative of the psychopathic constitution.

Boston Medical and Surgical Journal

March 9, 1922, **186**, No. 10

Indications for Opening Mastoid Cortex. F. P. Emerson, Boston.—p. 301.
Infected Colon as Related to Toxic Psychoses. J. W. Draper, New York.—p. 304.
Plea for Routine Examination on Operating Table Under Anesthesia as Preliminary to Abdominal Operations. J. W. Keefe, Providence, R. I.—p. 307.
Two Cases of Injury to Tibial Tubercle. J. W. Sever, Boston.—p. 311.
Arthroplasty of Elbow Joint: Point of View. H. C. Bean, Boston.—p. 313.
Need of Sanatorium Treatment of Tuberculous Children. W. A. Griffin, Sharon, Mass.—p. 316.
Radiotherapy in Carcinoma of Breast. G. E. Pfahler, Philadelphia.—p. 318.

Journal of Experimental Medicine, Baltimore

March 1, 1922, **35**, No. 3

Twort-D'Herelle Phenomenon. II. Lysis and Microbic Variation. A. Gratia, New York.—p. 287.
*Cultivation and Biologic Characteristics of Spirocheta Obermeieri (Recurrentis). I. J. Kligler and O. H. Robertson, New York.—p. 303.
Importance of Dextrose in Medium of Tissue Cultures. M. R. Lewis, Baltimore.—p. 317.
*Construction of Oygen Chamber for Treatment of Pneumonia. W. C. Stadie, New York.—p. 323.
*Treatment of Anoxemia in Pneumonia in an Oxygen Chamber. W. C. Stadie, New York.—p. 337.
Organism Resembling Bacillus Actinoides Isolated from Pneumonic Lungs of White Rats. F. S. Jones, Princeton, N. J.—p. 361.
Three Months Old Strain of Epithelium. A. Fischer, New York.—p. 367.
*Studies on Roentgen-Ray Effects. IX. Action of Serum from Roentgen-Rayed Animals on Lymphoid Cells in Vitro. J. B. Murphy, J. Heng Lieu and E. Sturm, New York.—p. 373.
*Measurement of Intravenous Temperatures. H. Clark, New York.—p. 385.
Venereal Spirochetosis in American Rabbits. H. Noguchi, New York.—p. 391.

Cultivation of Spirochaeta Obermeieri.—A study of the growth requirements of *Spirochaeta obermeieri* resulted in the perfection of a method which enabled Kligler and Robertson (1) to cultivate the organisms consistently from the blood of infected mice and rats, (2) to maintain the viability of cultures for periods of at least from three to seven weeks, and (3) to carry them on in successive subcultures by transplanting at intervals of from two to four weeks. This method is essentially the same as the Noguchi technic for the cultivation of the leptospira group, but emphasizes control of the physicochemical factors that act to limit and prevent growth and prescribes the conditions necessary to counteract the injurious influences. Ascitic fluid, horse or rabbit serum may be used as culture fluids. Uniformly successful results depend chiefly on the proper adjustment and stabilization of the reaction. A balanced reaction can be secured by adding 1.0 per cent. peptone broth or egg albumin as buffer, and covering the culture with a layer of oil. *Spirochaeta obermeieri* is a strict aerobe, consequently in order to permit adequate aeration the oil layer should not exceed 1.5 cm. in height.

Use of Oxygen Chamber in Pneumonia.—The construction of an oxygen chamber is given by Stadie. This chamber can be filled quickly with oxygen to any concentration up to 65 per cent. and maintained at the desired concentration for an indefinite time. The construction of ventilating system, cooling device, carbon dioxid remover, automatic oxygen analyzer, and filling and maintenance devices is given. The chamber is designed so that pneumonia patients with anoxemia may be placed in it and breathe an atmosphere containing from 40 to 60 per cent. of oxygen. The chamber is easy of ingress and egress, is economical in cost of operation, and comfortably accommodates patient and attendants so that adequate nursing and medical attention can be given at all times.

Treatment of Pneumonia Anoxemia in Oxygen Chamber.—Eight cases of pneumonia were treated by Stadie in the oxygen chamber. Five cases in which the prognosis was grave ended in recovery. Three cases, one of tuberculosis, one with a pneumococcus Type III infection, and a third with a pneumonia superimposed on a chronic pulmonary condition, ended fatally. In all cases there appeared to be an improvement in the patient's condition. In one case, particularly, with an intense degree of anoxemia, the patient became moribund and pulseless. Following the administration of 60 per cent. of oxygen there was a lowering of the heart rate from 160 to 120, the return of the pulse to the radial artery, the color became bright pink, and there was a remarkable change in the clinical condition.

Action of Roentgenized Blood Serum on Lymph Cells.—Lymphoid cells, prepared from the thymus and lymph glands of rats, when suspended in the serum of roentgenized rats and incubated for two hours, increase in number from 15 to 30 per cent., and mitotic figures were found by Murphy et al. among these cells in fairly large numbers. A like suspension of cells in normal serum undergoes rapid disintegration and in only one instance among a large number of films examined was a mitotic figure found. The stimulative effect of the serum from roentgenized rats endures from one to two hours after the exposure but is not detectable in the serum taken seventeen hours or later after the treatment. Serum roentgenized rats in vitro is devoid of stimulative action.

Measurement of Intravenous Temperature.—Although measurements made with a clinical thermometer are doubtless quite satisfactory for most purposes, it is possible that for certain kinds of experimental work fairly accurate determinations of blood temperatures may prove interesting. Apparatus which has been devised for this purpose by Clark is described. The temperatures are measured by a thermoelectric method in which use is made of the fact that the discontinuity of electric potential at a junction of two dissimilar metals depends only on the nature of the metals and the temperature of the junction.

Journal of Metabolic Research, Morristown, N. J.

February, 1922, **1**, No. 2

Experimental Studies in Diabetes. Series III. Pathology of Diabetes. 6. Pancreatitis in Etiology of Experimental Diabetes. F. M. Allen, New York.—p. 165.
*Id. 7. Microscopic Studies of Pancreas in Clinical Diabetes. F. M. Allen, New York.—p. 193.
Id. 8. Microscopic Pathology of Pancreas in 570 Unselected Hospital Cases. F. M. Allen, Morristown, N. J.—p. 221.
Id. 9. Literature and Discussion. F. M. Allen, Morristown, N. J.—p. 251.
*Alcohol in Diabetic Diet. F. M. Allen and M. B. Wishart, New York.—p. 281.
*Overnutrition with Fat and Alcohol in Severe Diabetes. F. S. Leclercq, Morristown, N. J.—p. 307.
*Relations Between Fertility and Nutrition. I. Ovulation Rhythm in Rat on Standard Nutritional Regimen. H. M. Evans and K. S. Bishop, San Francisco.—p. 319.

Relation of Pancreas Pathology to Treatment in Diabetes.—Allen emphasizes the fact that the pathology bears an important relation to the treatment and prognosis of diabetes. While a true chronic pancreatitis or recurrence of acute or subacute attacks must be considered in some cases, the pathologic findings give the impression that from the standpoint of primary etiology the diabetic pancreas in most cases represents a burned out conflagration, and that the chief or sole cause of aggravation of the condition lies in hydropic degeneration of islands. This interpretation alters the former conception of diabetes as an inherently progressive disease, and affords ground for regarding the average case as the consequence of damage of a vital organ, which is in danger of further injury chiefly or solely from functional overstrain. Clinical evidence to date corroborates this view in showing that by sufficiently thorough dietary control the downward progress of most cases of diabetes is either halted or almost indefinitely delayed.

Alcohol in Diabetes Diet.—The experiments on two patients with severe diabetes support the prevailing belief that ethyl alcohol is not converted into sugar in the body. At the same time, they are interpreted as signifying that the addition of calories in the form of alcohol in excess of the patient's caloric tolerance produces a return of glycosuria and other diabetic symptoms. The experiments also corroborate the prevailing view that alcohol is not converted into acetone in the body. No antiketogenic action was demonstrable; on the contrary a slight production of acetone seemed to be caused when alcohol was given in considerable quantities. Luxus diets formed by the addition of alcohol or a mixture of fat and alcohol to a standard diet gave rise to very much less acidosis both chemically and clinically than similarly excessive diets built up by the addition of fat alone. The former therapeutic use of alcohol is thus justified, with respect to the lessened danger of acidosis when part of the fat of a high caloric diet is substituted by alcohol. The experiments do not establish such a fact for undernutrition diets, or warrant attempts to prevent combustion of body fat by administration of alcohol. On the contrary, the conversion of an undernutrition diet into a luxus diet by addition of alcohol may result in an actual increase of acetone. With additions of alcohol, just as with additions of fat, the high caloric rations which were hoped to increase the weight and strength of emaciated patients failed to do so. As usual, the patients were stronger and more comfortable on diets which controlled their diabetes than on higher allowances which produced a return of diabetic symptoms.

Overnutrition in Diabetes.—Experiments on two patients with severe diabetes demonstrated the production of hyperglycemia in consequence of adding excessive calories to the diet in the form of either fat or alcohol.

Relation Between Fertility and Nutrition.—Evans and Bishop aim to lay a foundation for the study of aberration in ovulation due to defective diet. It attempts to establish the time of occurrence of the first oestrus and the normal ovulatory rhythm in rats maintained on a satisfactory nutritional regimen. Comparisons have been made between the performance of animals on a generous and varied diet in the form of abundant table scrap rations, and animals on a standard nutritional regimen. Significant differences in the behavior of the two groups were not observed. In 80 per cent. of animals handled in this way the first oestrus occurs between the thirty-seventh and the fifty-fifth day of life, on the average on the forty-seventh day, and when a sufficient number of oestrus cycles are observed about three fourths of all oestrus cycles are five days or less in length, approximately one fourth being of longer duration.

Medical Record, New York

March 11, 1922, **101**, No. 10

*Biologic Dosage of Roentgen Ray. F. C. Wood, New York.—p. 399.
Chemistry of Phosphorus in Brain Activity. W. H. Porter, New York.—p. 402.
Oral Surgery, Department of Gastroenterology. J. W. Draper, New York.—p. 405.
Oral Surgery, Department of Gastroenterology. G. R. Satterlee, New York.—p. 408.
Incipient Epilepsy: Its Diagnosis and Treatment. E. A. Tracy, Boston.—p. 410.
Aches and Pains of Internal Disease. O. V. Huffman, New York.—p. 414.
Prophylactic and Corrective Value of Footgear. A. H. Hansen, New York.—p. 416.
Place of Modern Medical Laboratory in Diagnosis of Disease. L. Achard, New York.—p. 418.

Biologic Dosage of Roentgen Ray.—Wood has this to say about the roentgen ray in the treatment of cancer: Unfortunately, roentgen-ray treatment is now apparently entering the phase of exaggerated enthusiasm. A number of absurd claims as to the great therapeutic value of the rays, especially those from the newly developed types of roentgen-ray machines, have been made. These new machines, however, yield effective voltages at the most not much more than 40 per cent. higher than those of the old type; and that a machine running at 200,000 or even 250,000 volts could produce miracles, where one running at 150,000 volts did not, Wood says, would be an interesting phenomenon, especially when it is considered that the only advantage of the higher voltage is in the greater output of short wave lengths from the tube, with a corresponding ability to put a larger dose of roentgen rays in a shorter time into the deeper tissues of the body. The phenomenon would be the more remarkable since radium, which gives off an abundance of rays corresponding to 200,000 to 250,000 volts, is still acknowledged, by even its most enthusiastic supporters, to be powerless to effect a cure in many types of internal cancer. Another reason for deprecating the raising of any undue hope concerning the effectiveness of the new roentgen-ray apparatus in the permanent cure of cancer is the fact that, as shown experimentally in the Crocker Institute, the rays produced by high voltages are no more potent in killing standard animal tumors than are any other types of roentgen ray, about five erythema doses being required, no matter what the voltage or the filtration. Hence, as the erythema dose is still the limit of the amount of radiation which can be given to internal tumors, the sole gain from the therapeutic point of view is the increased penetration and greater output of useful radiation from the tube. While, therefore, it may be confidently expected that the employment of voltages up to 300,000 will offer a distinct advance in the effectiveness of our methods of treatment as soon as roentgen-ray tubes which will run effectively at a voltage of 250,000 or above are built, it is equally certain that the operation of these machines will require so much technical knowledge and will be fraught with so many perils to the patient (not on account of short circuits, as is commonly assumed by the layman, but because of the large yield of roentgen ray which can be passed through the body) that their use will be limited to institutions or to highly trained specialists. The therapeusis of cancer will by this simple step be placed on a much better basis than it is at present, when so many physicians in the possession of a few milligrams of radium are treating all types of cancer, and those with old fashioned low voltage transformers are attempting deep therapy, with the sole result that the tumor either is not influenced or is stimulated.

Michigan State Medical Society Journal, Grand Rapids

March, 1922, **21**, No. 3

Verumontanum and Its Relation to Hematuria, Nocturnal Emissions and Its Treatment. R. Rosen, Detroit.—p. 123.
Cancer Week in Detroit. H. C. Saltzstein, Detroit.—p. 125.
Pyelitis of Pregnancy. S. Levin, Lake Linden, Mich.—p. 128.
Luetin Test in Latent Syphilis. A. E. Van Nest, Detroit.—p. 132.
*Unusual Case of Obstruction of Bowel Associated with Hydronephrosis. I. D. McCoy, Cass City, Mich.—p. 133.
*Malignant Teratoma of Kidney. L. Dretzka, Detroit.—p. 134.
Henoch's Purpura. S. Wilson, Detroit.—p. 136.
Future Public Health Interests and Activities. J. Sundwall, Ann Arbor.—p. 137.

Intestinal Obstruction Caused by Hydronephrosis.—In McCoy's case the intestinal obstruction was caused by a tumor from the left kidney which extended into the abdomen. The splenic flexure and a portion of the descending colon were lateral and behind the tumor and were completely "pinched" between the lateral abdominal wall and the mass. About 2,000 c.c. of urine was drained from the kidney pelvis. The kidney was very much enlarged, but otherwise was apparently normal. No stone or kink was found in the ureter. Four months later the boy again became severely ill with pain, obstruction of the bowel and obstruction of the left ureter. Roentgen-ray examination showed a ureteral kink. A nephrectomy was done from which the patient made an uneventful recovery.

Malignant Teratoma of Kidney.—Dretzka's patient was 6 years of age, with no early history of any moment. His family history was negative. His illness began or was first noticed in January, 1921—a brownish muddy urine on micturation which was thought to be of no significance and was disregarded by parents. The muddy urine was not constant but reappeared about once each week. Four months later, the mother noticed a small nodule (walnut size) in the upper left quadrant. It was hard but not tender, and within five months it grew to the size of a large grape fruit. The child slept well, did not complain of pain and her appetite was good. Examination disclosed an abdomen of uneven outline. A mass was visible in the left hypochondrium and lumbar region about the size of the child's head. It was slightly movable, regular in outline and firm in consistency. There were prominant and superficial veins on the abdomen. An attempt to catheterize the ureters was unsuccessful. The kidney was removed. Recovery was uneventful. Diagnosis: malignant teratoma.

New York Medical Journal

March 1, 1922, **115**, No. 5

Modern Commentaries on Galen. His Formulation of Humoral Doctrines. J. Wright, Pleasantville, N. Y.—p. 245.
Metabolism During Starvation and Undernutrition. F. G. Benedict, Boston.—p. 249.
Diagnosis and Differential Diagnosis of Early Hip Joint Disease in Childhood. J. T. Rugh, Philadelphia.—p. 256.
*Recurrent Lobar Pneumonia. W. G. Thompson, New York.—p. 259.
Pneumonia. A. C. Morgan, Philadelphia.—p. 260.
Treatment of Focal Infection of Throat by Roentgen Ray Compared with Surgical Removal of Tonsils and Adenoids. W. D. Witherbee, New York.—p. 261.
Group Diagnosis. H. E. Smith, New York.—p. 263.
Reply to Certain Antagonistic Criticism of Nonsurgical Biliary Tract Drainage. B. B. V. Lyon, Philadelphia.—p. 269.
Blood in Digestive Tract. L. W. Kohn, New York.—p. 276.
Local Anesthesia in Dental, Oral, Nose and Throat Surgery. H. E. Tompkins, New York.—p. 279.
Race Immunization. C. L. Redfield, Chicago.—p. 282.
Twins and Problem of Heredity. M. P. E. Groszmann, New York.—p. 284.
Relationship of Precordial Distress to Extracardiac Conditions. E. C. Reifenstein, Syracuse, N. Y.—p. 287.

Recurrent Lobar Pneumonia.—Thompson records a case in which pneumonia recurred in a robust man, 35 years of age, in three successive years (during which there was no influenza), the interval between the first and second attacks being eighteen months and between the second and third attacks thirteen months. In each attack the physical signs and mode of onset were absolutely typical of the ordinary acute lobar pneumonia with chill, pain in the chest, cyanosis, rusty sputum, dyspnea and a leukocytosis ranging from 19,000 to 25,000. In the first two attacks, a typical crisis took place on the sixth day in the first attack, and the fifth day in the second attack, so that when the third attack came the patient's attendants in the hospital stood, watch in hand, awaiting another crisis, but it did not appear and the subsidence was by lysis, from the eighth to the tenth day. The first two attacks involved the left lower lobe and the third attack, in which subsidence was by lysis, involved the right upper lobe. In a second case the attacks occurred in a man, 24 years of age, with an interval of eleven months between them during which he remained in robust health. In the first attack the crisis occurred on the fifth day with extraordinary abruptness, the fall of temperature amounting to 8 degrees in twelve hours and being followed, as is usual in cases in which the temperature becomes markedly subnormal, by a rebound of one or two degrees above the normal for a couple of days. The second attack, lasting eight days, was followed by a similar, but slower crisis with a fall in temperature also of nearly 8 degrees but with a less decided and more brief rebound above the normal.

Philippine Islands Medical Association Journal, Manila

September-October, 1921, **1**, No. 5

Physicians as Expert Witnesses. S. de los Angeles.—p. 181.
Endocarditis Due to Streptococcus Viridans. Report of Cases. A. G. Sison, A. Bautista and P. Lantin.—p. 185.
*Culion Leper Colony, Philippine Islands. A. Catanjal.—p. 191.
Case of Meningitis, Arthritis and Epididymitis Due to Mixed Pfeiffer Bacillus and Pneumococcus Infection. W. de Leon.—p. 195.
Experiences in Sulu Public Hospital (1918-1920). S. Y. Orosa.—p. 198.

Culion Leper Colony.—This report shows that the segregation of lepers at the Culion Leper Colony reduced in 1918 (the twelfth year of segregation) the deaths caused by leprosy in the Philippines to 65.32 per cent. of the deaths caused by this disease in 1903 (three years before segregation). The total cases of leprosy found in all the islands and admitted to Culion were reduced in 1918 to 66.91 per cent. of the lepers found at the beginning of the segregation.

Rhode Island Medical Journal, Providence

March, 1922, **5**, No. 3

Treatment of Peptic Ulcer. G. A. Matteson, Providence, R. I.—p. 207.
Hypertrophy of Thymus Gland. H. E. Utter, Providence, R. I.—p. 210.
What Can Be Done for Deaf in Rhode Island. F. T. Rogers, Providence, R. I.—p. 213.

Wisconsin Medical Journal, Milwaukee

February, 1922, **20**, No. 9

Use of Antiserum in Streptococcus Septicemia. H. E. Marsh and C. O. Vingom, Madison.—p. 444.
*Effect of Occlusion of Coronary Arteries on Heart's Action and Its Relationship to Angina Pectoris. W. T. Longcope, New York City.—p. 449.
Relation that Exists Between Hypertension, Myocarditis and Nephritis. H. A. Christian, Boston.—p. 455.
Tumors of Breast from Standpoint of General Practitioner and General Surgeon. A. D. Bevan, Chicago.—p. 460.

Effect of Occlusion of Coronary Arteries.—Longcope states that sudden stoppage of the circulation in one or the other coronary artery which is otherwise normal probably leads to immediate or fairly sudden death, possibly from fibrillation of the ventricles. Thrombosis usually but not invariably occurs in arteries that are previously diseased and narrowed by sclerosis. Occlusion either by thrombosis or sclerosis under these circumstances may be compatible with life for varying periods of time, though death, when it comes, is usually sudden. In a small group of cases the disease pursues its course as a rapidly progressive cardiac insufficiency without features of particular note. But in the great majority of cases there are significant symptoms and signs that frequently allow of a fairly accurate diagnosis. Most important of these are pain often, with a particular radiation, the appearance of transient pericardial friction rubs, often associated with the acute onset of myocardial insufficiency, and various forms of tachycardia and cardiac arrhythmia, all occurring in an elderly person usually without signs of valvular heart disease. Unfortunately there does not seem to be any one electrocardiographic sign that occurs in all cases. Seventeen cases in which the final diagnosis was made at the necropsy are analyzed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

January, 1922, **44**, No. 4

*Distortion of Visual Fields in Cases of Brain Tumor. II. Field Defects Produced by Temporal Lobe Lesions. H. Cushing.—p. 341.
Reflex Movements and Postural Reactions in Quadriplegia and Hemiplegia, with Especial Reference to Those of Upper Limb. G. Riddoch and E. F. Buzzard.—p. 397.
Dyssynergia Cerebellaris Myoclonica — Primary Atrophy of Dentate System: Pathology and Symptomatology of Cerebellum. J. R. Hunt, New York.—p. 490.
Disorders of Movement Resulting from Loss of Postural Tone; Cerebellar Ataxy. F. M. R. Walshe.—p. 539.

Distortion of Visual Fields in Brain Tumor.—In Cushing's experience the temporal lobe is a common seat of cerebral tumor (fifty-nine cases in a series of 276 verified supratentorial tumors). In fifty-nine verified temporal lobe tumors, perimetry, owing to the advanced stage of the process, was precluded in twenty cases, but of the remaining thirty-nine homonymous field defects, indicating involvement of the temporal loop of the optic radiation, were present in thirty-three instances. Heretofore, the most important symptom for temporal lobe localization has been the occurrence of the so-called uncinate fits, but in this series, even including as such all attacks of petit mal without gustatory impression, they have been recorded in twenty-four cases only. Visual hallucinations have been a frequent symptom of the temporal tumors in this series (thirteen out of the fifty-nine cases). Auditory phenomena in this series are conspicuous by their absence. In a few cases only has there been tinnitus and rarely some lowering of sound perception. The chief errors of diagnosis arise (1) when, with a total median hemianopsia, the occipital lobe is considered to be the tumor seat; (2) in the absence of demonstrable field defects, when symptoms supposedly of cerebellar origin are to the fore. Hence, it is fair to conclude that perimetry gives information of paramount diagnostic value, particularly in the early recognition of temporal lobe tumors, the partial field defects short of a hemianopsia being especially characteristic of involvement of the optic radiation in this region.

British Medical Journal, London

Feb. 25, 1922, **1**, No. 3191

*Nature and Cause of Old Age Enlargement of Prostate. K. M. Walker.—p. 297.
*Metabolism of Children Undergoing Open Air Treatment, Heliotherapy and Balneotherapy. L. Hill and J. A. Campbell.—p. 301.
Streptococcal Infection by Nasal and Buccal Paths. D. C. Edington.—p. 304.
*End Results of Sanatorium Treatment of Tuberculosis: Record of Seventeen Years' Sanatorium Work. F. W. Burton-Fanning and W. J. Fanning.—p. 306.
*Hemorrhagic Colitis. J. W. G. Grant.—p. 308.
Intrapleural Pressures in Artificial Pneumothorax. J. Lawson.—p. 309.
*Case of Megacolon. E. R. Flint.—p. 310.
Gastro-Enterostomy and Some Dietetic Rules. J. O'Conor.—p. 310.

Cause of Enlargement of Prostate.—The view is advanced by Walker that an enlarged prostate is to be regarded as a prostate that has undergone a form of degeneration which, for the sake of convenience, may be termed fibroepithelial. The condition may be considered in the light of an accident that has occurred during the period of involution of the genital tract. An analogy to this in the case of a female may be found in the somewhat obscure condition known as a serocystic disease of the breast. The breast, like the prostate, is one of the secondary sexual glands. It is in intimate association with the ovary, just as the prostate is with the testis. Finally, the breast shares with the prostate the same tendency to develop lesions during the period of sexual decline. In serocystic disease is present the same formation of intra-acinous growths as the result of epithelial proliferation. There is the same tendency to dilatation of the acini and an equal absence of round cell infiltration, or of other signs of inflammation. Moreover, the changes in the breast show the same patchy distribution that is characteristic of the prostatic condition, one group of glands being markedly affected while another remains free. The most obvious difference between the prostatic and the breast lesions is the presence of fatty degeneration in the former case and its absence in the latter. The close dependence of the prostate on the ductless glands during its period of development affords sufficient ground for considering carefully the possibility that enlargement may be associated with some change in the endocrine system. Enlargement of the prostate is a condition having a definite distribution that is anthropologic rather than geographic in character. Whereas, the condition is common in the Circassian race generally, both in Europe and in the New World, it is somewhat less frequently found among those of Semitic and Arab stock, and among the inhabitants of India. Among Mongols and Negroes, it is extremely rare. Enlargement can have nothing to do with the causes that have at various times been suggested as determining its incidence—that is, previous attacks of gonorrhea, sexual excess, masturbation, etc.—for the races that are more or less immune from enlargement are the very races in which these supposed causes are most in evidence. Generally speaking, enlargement is commoner among meat eaters and those leading the sedentary lives of cities than among the vegetarians and frugal livers.

Metabolism of Children Undergoing Open Air Treatment.—Observations on metabolism of children crippled with surgical tuberculosis and lying fixed in splints in bed and more or less nude are described by Hill and Campbell. Their metabolism on the average was increased 40 per cent. above the standard, for the same weight, of children confined in a closed calorimeter. After three months' treatment, including graduated exposure to open air and heliotherapy, their metabolism out of doors was 20 per cent. above that in well ventilated cubicles soon after admission. Children who had been treated for many months showed high metabolism in the out of door conditions, those who pigmented well in the sun giving about the same figures as those who did not pigment well, after making allowance for weight. The former gave the better figures for weight. It is considered that the rise in metabolism caused by heliotherapy per se is insignificant compared with that caused by exposure to open air. At the same time, the value of heliotherapy as a factor toward arrest of the disease is not disputed. Children on admission in well ventilated cubicles gave results about 20 per cent. higher than basal standards for closed calorimeters. It is considered that the open air conditions in the former were mainly responsible. Balneotherapy increases metabolism much above the resting level. The bodily tone and general condition of the children under the specially graduated treatment is remarkable when the long period of immobilization in splints in bed is considered. The treatment might be applied in other cases involving long confinement in bed.

End-Results of Sanatorium Treatment of Tuberculosis.—Between 1903 and 1919 sanatorium treatment was given at Kelling Sanatorium to 3,220 patients. Of this number 460 have been lost sight of, so there remain for consideration 2,760 patients. There were living in 1921, 1,125, or 40.7 per cent. The different results according to the patient's classification on admission were: Class I, 1,118 patients, 64.7 per cent. living, 35.2 per cent. dead; Class II, 801 patients, 34.2 per cent. living, 65.7 per cent. dead. Class III, 841 patients, 15 per cent. living, 84.8 per cent. dead. Of those that died, death occurred as follows: Within 1 year, 6 per cent.; within from 1 to 5 years, 57.6 per cent.; within from 5 to 10 years, 23 per cent.; within from 10 to 15 years, 9.2 per cent.; within from 15 to 20 years, 2.9 per cent. Of all the patients who died after receiving sanatorium treatment, the average length of time between the appearance of the first definite symptoms and death was just over five years.

Hemorrhagic Colitis.—The two cases cited by Grant differed from tropical dysentery in that there was no ulceration, and neither the bacillus of Shiga nor *Endameba histolytica* could be found. There was a remarkable absence of pain in each. The mucous membrane presented a uniform granular appearance, which in the second case was observed to extend from rectum to the splenic flexure, and which probably involved the whole lower bowel.

Megacolon.—Flint's patient, a man, aged 32, was born with an imperforate anus, for which an operation was performed twenty-four hours after birth. The rectum was opened at a depth of three-quarters inch from the perineum and the edges stitched to the skin. The subsequent history was one of continual trouble from constipation. His complaint was enormous distension and difficulty with bowel movements, and when this was at its worst he would get a form of diarrhea with incontinence. Flint removed the sigmoid and upper part of the rectum. The sigmoid was enormous, the two limbs being the size of an average male thigh, and the apex of the loop was beneath the liver. The wall was markedly hypertrophied. The segment of bowel removed was 2 feet 6½ inches long, 22 inches in circumference, and weighed 11 pounds.

Lancet, London

Feb. 25, 1922, **1**, No. 5139

*Researches in Color Vision. F. W. Edridge-Green.—p. 357.
Some Points on Spasm in Alimentary Tract. G. de Bec Turtle.—p. 361.
*Gamma Rays and Malignant Disease. R. Morton.—p. 364.
Deep Roentgen-Ray Treatment of Cancer: Personal Impression of Erlangen Frauenklinik. H. K. Ward.—p. 366.
Case of Sclerema Neonatorum. E. Bourne.—p. 368.
*Application of Methods of Correlation. C. P. White.—p. 369.
*Unusual Accident During Appendicectomy. F. J. W. Porter.—p. 371.
Case of Puerperal Septicemia; Recovery. J. H. Robinson.—p. 371.

Researches in Color Vision.—Many new facts given by Edridge-Green are so novel and unexpected that, he says, much further research is needed before a definite explanation can be given of the underlying physiologic processes. Such, for instance, is the fact that when one eye has been fatigued with spectral red light, the other eye sees white as reddish or any mixture as if red had been added to it, and that many color blind persons will agree with the normal white equation and others who will agree with it in some cases when the comparison white light is diminished and in other when increased in intensity, thus matching two white lights of unequal luminosity. Defects of light perception are quite distinct from defective color discrimination. All degrees of color discrimination may be classified as dichromic, trichromic, tetrachromic, pentachromic, hexachromic and heptachromic.

Gamma Rays in Malignant Disease.—As to the relative advantages of radiology and surgery for the relief of victims of malignant disease Morton believes there are grounds for thinking that before many years surgery may become auxiliary to radiology. He says evidence is overwhelming that radiology can be of the greatest assistance in dealing with malignant disease, recognition of which should lead surgeons and gynecologists to seek the radiologist's cooperation as soon as the nature of the case is determined before treatment has been applied. This is the only form of cooperation that can be of real help in improving the patient's chances of recovery.

Secretion of Salts from Kidney.—The results obtained by White appear to favor most strongly the view that certain substances (sodium, potassium, chlorin) are excreted in association with the water and hence through the glomeruli. Other substances (urea, uric acid, sulphate) are excreted independently of the water and, therefore, presumably through the tubules. Others again (phosphorus, magnesium, calcium), appear to hold an intermediate position, possibly being excreted by both channels. This investigation supports the secretion rather than the filtration theory. The association of urea with sulphuric and phosphoric acids is an interesting point which demands further investigation. There is no indication of the excretion of uric acid as sodium urate, but there are indications of calcium and potassium urates. Potassium appears to be excreted almost entirely as chlorid, but some urate may be present. Sodium is excreted as chlorid, phosphate and sulphate. Calcium and magnesium are excreted as chlorids, phosphates and sulphates; possibly also urates. There are no indications of the excretion of alkali salts of ethereal sulphuric acids. The negative correlation between ethereal sulphuric acid and water requires further investigation.

Tear of Cecum During Appendicectomy.—In Porter's case the cecum sustained a rent 1 inch long when the peritoneum was incised. The cecum was acutely distended and the walls had become very thin, and as soon as the pressure of the abdominal wall was relieved over a small area by incising the peritoneum the intestine burst.

Medical Journal of Australia, Sydney

Jan. 14, 1922, **1**, No. 2

*Hemolytic and Water Fevers. W. J. Penfold and D. G. Robertson.—p. 29.
*"Mestizos" of Kisar, Dutch East Indies. J. S. C. Elkington.—p. 32.
Treatment of Gonorrhea in Male in General Practice. N. M. Gibson.—p. 34.
Torsion of Small Intestine. H. T. Illingworth.—p. 37.
Case of Glioma of Optic Nerve. J. L. Gibson.—p. 38.

Hemolytic and Water Fevers.—Further experiments by Penfold and Robertson as to the existence of hemolytic fever confirmed previous observations. No reliable evidence of simple pure hemolytic fever exists. The fever in paroxysmal hemoglobinuria is due to some unknown cause.

Effect of Long Residence in Tropics.—Elkington discusses the results of an investigation which threw much light on the effect of residence in the tropics on white persons. Nine families of originally north European or mixed north European and native blood have persisted on Kisar for more than 100 years and have bred to five and six generations. In the case of one family, the known date of birth of the eldest Kisar born child of European blood was 1789. His descendants down to the year 1914 numbered thirty-eight at least and possibly more. His father was born at Macassar in 1767, giving an uninterrupted period of tropical residence for this family of 154 years on the paternal side and at least 135 years on the maternal side. This has not been accompanied by loss of European characteristics of complexion and features, except as a result of admixture of native blood, and that even when so diluted the European physical characteristics still come out strongly in the fifth and sixth generations. The European standard of mentality, as shown by reaction to European methods of education, persists in substantial degree after five and six generations. These characteristics have survived in spite of environmental conditions and associations lasting for over sixty years, from 1819 onward, and probably for seventy years or more, which are generally supposed to be totally unsuitable for persons of European stock. These conditions have included native standards of food and food supply, endemic malaria, the psychologic effect of what must have been for the earlier generations an acute sense of abandonment by their own race, life under the rule of native chiefs, constant association with a native race of low mentality, loss of European language and European religion, interbreeding to a high degree and constant exposure to a tropical climate. There is nothing in the available history of these people to show that a tropical climate per se has tended to produce degenerative effects on them or to limit fertility. Whatever evidence they may have shown of lowered physical or mental activity in the past can be fully explained by the environmental conditions of food supply, malaria and particularly of native association, aided, possibly, by the accentuation of stock weaknesses arising from interbreeding over several generations.

Medical Journal of South Africa, Johannesburg

January, 1922, **17**, No. 6

Use of Thomas Knee Splint in Leg Injuries. M. G. Pearson.—p. 109.
Pelvic Inflammation. A. S. Wilson.—p. 112.

South African Medical Record, Cape Town

Jan. 28, 1922, **20**, No. 2

Modern Dietetic Treatment of Diabetes Mellitus. E. P. Baumann.—p. 22.
*Therapeutic Artificial Pneumothorax: Its Indications, Scope and Results. D. P. Marais.—p. 28.
*Spheroidal Cell Carcinoma of Appendix. E. B. Fuller and G. B. Bartlett.—p. 34.

Therapeutic Artificial Pneumothorax in Tuberculosis.—Summarizing the results obtained in fifteen tuberculous cases, in which this treatment had a fair trial, and in which it had been carried to a conclusion, Marais finds that ten patients, or 66.6 per cent., are today in good health, and in five cases, or 33.3 per cent., the prognosis was bad or indifferent. These fifteen cases all presented severe pulmonary tuberculosis with meager prospects of recovery, hence Marais concludes that the credit which lies to the operation is no small one.

Spheroidal Cell Carcinoma of Appendix.—In this case there had been no symptoms to suggest appendix trouble, but after removal of an ovarian cyst the condition of the appendix was noted as a routine measure. It was lying free with no adhesions, but the distal end was clubbed with a hard swelling about the size of a small marble. No enlarged glands were found in the neighborhood. The appendix was removed. Examination of the swelling showed that it was a basal cell carcinoma ("rodent ulcer").

Bulletin de l'Académie de Médecine, Paris

Jan. 24, 1922, **87**, No. 4

Research of Fenton B. Turck on Traumatic Shock. Quénu.—p. 92.
*Preventive Vaccination Against Typhoid. C. Achard.—p. 105. Id. O. Crouzon.—p. 108.

Nine Years of Vaccination Against Typhoid.—This is the report of the station which vaccinates the hospital nurses; 5,178 have thus been vaccinated. Among the 1,739 nurses in this hospital only one contracted typhoid after vaccination.

Bulletin Médical, Paris

Jan. 28, 1922, **36**, No. 5

Diagnosis of Skin Diseases. L. Brocq.—p. 67.
How We Injure Our Hair. R. Sabouraud.—p. 70.
Ultraviolet Rays in Dermatology. P. Charpy.—p. 73.
The Care of the Skin. Veyrières and Beauxis-Lagrave.—p. 76.
*Treatment of Eczema. Veyrieres and Ferreyrolles.—p. 79.

Treatment of Eczema.—Veyrières and Ferreyrolles comment on the old treatment of burns with ink, which gave them the idea of applying a solution somewhat similar for the treatment of eczema. Under this application the vesicles seem to retrogress and dry at once, and in most cases no dressing was necessary. Although they do not pretend to have discovered a treatment for eczema, they believe, however, that if used in certain cases and at certain periods, it will undoubtedly prove valuable. The inklike solution they use is a mixture of 10 parts ferrous sulphate; 100 parts distilled water and 2 drops of sulphuric acid. When this application has been applied and has dried on, they apply a solution of 100 parts nutgall in 200 parts water. This solution is boiled for a long time and a little salicylic acid is added to prevent mold.

Encéphale, Paris

January, 1922, **17**, No. 1

*The Theory of Neurobiotaxis. C. U. Ariëns Kappers.—p. 1.
*Disease of the Pons. André-Thomas.—p. 20.
*Pathogenesis of Psychoses. E. Dupré and Trepsat.—p. 31. Cont'd.
*Arsphenamin in General Paresis. J. R. de Fursac and Furet.—p. 38.

Neurobiotaxis.—This is Kappers' tenth publication on the development of the neuron. He here discusses the nutritive tropism of the dendrites and its relation to neurobiotactic phenomena in general.

Disease in the Pons.—Thomas' patient was an unusually intelligent man of 50 who recorded his symptoms so that the evolution of the sensory and motor disturbances could be regularly traced. The crossed symptoms, and the improvement in the sensory symptoms in the course of years were features of the case.

Repressed Emotions in Genesis of Certain Psychoneuroses.—This is the last work on which Dupré was engaged at the time of his death. He emphasized the importance of emotivity and repressed emotions as factors instrumental in bringing on certain forms of mental disease. He refers in particular to what Janet calls "restriction of the consciousness field," as the abnormally small reserve of psychic energy in such persons is thus absorbed and diverted from its proper sphere.

Arsphenamin in General Paresis.—De Fursac and Furet report the results of arsphenamin treatment in 43 cases of general paresis, from September, 1920, to October, 1921. The treatment was given to 52 patients but was suspended in 9 at the very beginning on account of intolerance, intercurrent affection or transfer of patient to his family or to another hospital. The following results were obtained in the remaining 43 cases: No results in 15; strikingly notable remission in 10; appreciable remission in 10; arrest of the disease without noticeable improvement in 8. This shows that if arsphenamin treatment does not cure those with general paresis, it is at least capable of improving their condition. Spontaneous remissions could scarcely reach such notable proportions. These results demonstrate that arsphenamin treatment of general paresis, given in small doses, often repeated, up to a total of 9 gm., is without danger. Furthermore it produces remissions, and in certain cases psychic remissions, equal to recoveries.

Journal de Médecine de Bordeaux

Feb. 10, 1922, **94**, No. 3

*Postpuerperal Pericolitis. J. Péry.—p. 75.
Artificial Pneumothorax in Treatment of War Wounds of Lung: 3 Cases. G. Bardon.—p. 78.
*Two Cases of Granulitis. R. Cruchet and Gandy.—p. 81.
*Digestive Hemoclasis and Liver Functioning. P. Mauriac.—p. 83.
*False Asthma. E. Lagrave.—p. 85.
The Thyroid Function and Procreation. M. Favreau.—p. 87.

Puerperal Pericolitis.—Péry describes three cases of puerperal pericolitis in women of 26, 24 and 32 following childbirth or abortion. In his first case the severe pains developed abruptly, and during the night the patient evacuated, with solid stools, a greenish and ill-smelling pus. The following morning, with temperature of 36.4 C. the pains had disappeared and she declared herself cured. Examination showed nearly the same previous clinical symptoms, but the tumefaction and tenderness had decreased and in a few days the inflammatory mass had entirely disappeared. In his second case the inflammatory condition was not so pronounced, and the peri-intestinal phlegmon spontaneously subsided under medical measures. The cecum was the site of the disturbance, but the large intestine was involved in both the cases. Péry's third patient, with temperature of 38.2 C., complained of pain in the left iliac fossa above and outside the adnexa. Palpation revealed diffuse doughiness extending to the sigmoid flexure. Application of ice relieved the pain. By the seventh day after the abortion, conditions became normal and complete recovery soon followed. Thus, in the three cases observed by Péry the serious or even grave inflammatory symptoms occurred in the large intestine in parturients, but all recovered smoothly with no symptoms from the genital sphere.

Two Cases of Miliary Tuberculosis.—Cruchet and Gandy report two cases of granulitis in young women, one 24 and the other 18, both servants, and with the same evolution and speedily fatal outcome in each case.

Digestive Hemoclasis Test.—Maurice disputes the value of Widal's test digestive leukopenia as evidence of insufficiency of the liver. He declares that the number of leukocytes fluctuates within such a wide range in physiologic conditions that it is scarcely wise to assume that the liver is deranged when the leukocytes drop during digestion of a glass of milk, taken fasting. At least we must have a broad basis of experiences and prolonged observation before we can accept the findings of this test as reliable.

False Asthma.—Lagrave warns that a new wool mattress is liable to induce respiratory disturbances in certain persons. He theorizes to explain this, and warns against this possible source of supposed asthma.

Journal de Radiologie, Paris

January, 1922, **6**, No. 1

Roentgen-Ray Examination of Pleuropulmonary Affections in Children. E. Weill and A. Dufourt.—p. 1.
Radiography of Branchial Fistulas. R. Leriche and A. Badolle.—p. 12.
Roentgenoscopy of Interlobar Fissures of Lungs. Gilson.—p. 14.
*Spinal Affection Simulating Pott's Disease. J. Calvé and M. Galland.—p. 21.
Diagnosis of Diaphragmatic Hernia. Bouquet et al.—p. 24.
Apparatus for Radium Treatment of Buccopharyngeal Neoplasms. A. Jentzer.—p. 27.

Spinal Affection Simulating Pott's Disease.—Calvé and Galland report a case of calcification of the nucleus pulposus in a woman of 72. She had been treated for two years for Pott's disease. They were unable to find a similar case in the literature.

Paris Médical, Paris

Feb. 11, 1922, **12**, No. 6

*Malignant Malaria in France. G. Paisseau and Loubrieu.—p. 117.
The Spinal Fluid in Diphtheric Paralysis. G. L. Hallez.—p. 119.
*Technic for Lumbar Puncture. G. Milian.—p. 123.

Malaria in France.—There have now been recorded, since the war, eighteen cases of autochthonous malaria in France with the parasite of malignant tertian in the blood.

By-Effects of Lumbar Puncture.—Milian is convinced that oozing of the fluid through the gaping puncture hole is one of the factors in the disagreeable by-effects of lumbar puncture. The dura tissue is not elastic, and the hole keeps open, but this can be corrected by having the patient lie in the knee-chest position, curving the back inward. In ten minutes of this, the lymph and fibrin of the tissues form a thin clot over the puncture hole, as the fluid flows away from it toward the head. Then the patient can change to the reclining position, lying on his abdomen, not on his back, keeping the head lower than the pelvis by raising the foot of the bed with a brick. This position is maintained for twenty-four hours. For a change, he can recline on the side opposite the puncture. If headache or vomiting follow the puncture, keeping flat in bed is the only relief, and morphin is the only effectual sedative in these conditions. When the pains and vomiting persist for ten days or more, hysteria is probably involved, and under verbal suggestion these pithiatic phenomena disappear.

Schweizerische medizinische Wochenschrift, Basel

Feb. 9, 1922, **52**, No. 6

- *Sphygmographic Arteriometry. H. Sahli.—p. 133.
- *Epidemic Encephalitis. R. Bing and R. Staehelin.—p. 142.
- *Scarlet Fever at Zurich. H. Rothpletz.—p. 145.
- *Serodiagnosis of Tuberculosis. A. Grumbach.—p. 147.

Measurement of Lumen of Artery.—Sahli here describes what he calls the sphygmographic arteriometer which, he says, aids and perfects the whole system of study of the laws of motion and force in the pulse, especially his volume sphygmobolometer. The pulse volume and the pulse force can be estimated from the arteriometric findings. This will aid in restoring sphygmography to its proper place as a universal hemodynamic method, he says, instead of the prevailing disregard of everything except the rhythm.

Epidemic Encephalitis.—Bing and Staehelin have been tracing backward to the first symptoms 97 cases of epidemic encephalitis. The direct mortality was about 20 per cent. but a number committed suicide later in despair at their hopeless condition of parkinsonism. The latter may subside, but this is exceptional, and only when the parkinsonism is not of the tardy developing, malignant type. The myoclonic form of the disease proved more malignant than the choreic form. There was recovery in the lethargic form only in 25 per cent. of the cases. In 50 per cent. parkinsonism followed, sometimes after an interval of apparent health for several months up to more than a year. In 11 cases the tardy parkinsonism is growing more pronounced. Of the total 97 cases, only 24 of the 80 well defined cases can be regarded as cured.

Scarlet Fever in Zurich.—Analysis of 3,912 cases of scarlet fever at Zurich during the last eight years fails to show connection with the school. The 1,519 cases in the public schools were distributed among 1,153 different school classes. There was one case in 2,669 houses and two or more members of the family had the disease in only 418 families. The children were younger than 6 in 1,624 of the cases; the 2 oldest patients were 57 and 58. Return cases were observed six or eight weeks after the onset of the disease or even later. Scarlet fever does not seem to be very contagious in the early stages. Early diagnosis and isolation almost invariably prevents any further spread of the disease.

Serodiagnosis of Tuberculosis.—Grumbach explains the occasional negative results of serologic tests in unmistakable tuberculosis as due to the fact that the organism has not yet had time or force enough to produce enough free antibodies to induce the reaction. The antibodies bound to the antigen have no influence on the test reaction. When the antigen is in excess, the test should be made with an antibody, not with more antigen. By applying in this way both forms of the serologic test, we obtain a positive reaction with one or the other, and have no further negative reactions in unmistakable tuberculosis except in the rare cases in which antigen and antibody exactly balance each other for the time being. By repeating these serologic tests from time to time we obtain a more reliable basis for the prognosis than has been available hitherto.

Feb. 16, 1922, **52**, No. 7

- *Cesarean Section with Fever. M. Walthard.—p. 161.
- Prevalence of Diabetes at Basel. H. Hunziker.—p. 168.
- *Progressive Pernicious Anemia. A. Alder.—p. 172.
- *Infection and Insufficiency of the Liver. M. Bourcart.—p. 175.

Prophylaxis of Puerperal Fever.—In 27 of Walthard's 205 cases of cervical cesarean section, the temperature in the axilla was above 38 C., and 5 in this group developed puerperal fever, but smooth recovery followed in all the others, and in this group of 5 all recovered but one. His tabulated details demonstrate that the symptoms during labor indicating infection of fetal membranes—that is, a rise in temperature and pulse, chills, physometra or spastic constriction—do not contraindicate intraperitoneal cesarean section. Even retrospective study of the cases does not afford any criteria for the postoperative course in such cases. In conclusion, he advises to obtain the written consent of the husband as well as of the woman, and appeals to practitioners and others to teach their patients the prophylaxis of endogenous infection. For this he emphasizes four prophylactic measures during the last eight weeks of the pregnancy, namely, refraining from sexual intercourse, from vaginal douches, from the use of a public water closet, and from public baths and from full baths at home. The woman should take only sponge baths, and not sit or lie in the water.

Pernicious Anemia.—Alder writes from Zurich to recall that it was at Zurich in 1871 that Biermer presented the case of progressive pernicious anemia which gave rank to this disease as a morbid entity. During the fifty years since, the disease has been explained in turn as a disease of the bone marrow, an infection, a primary gastro-intestinal disease, a hemolytic process, an auto-infection, and a constitutional disease. Alder's own conclusion, from twenty-five cases minutely analyzed, is that pernicious anemia is due to the action of some poison on the entire organism. Every organ suffers from the toxic action, the bone marrow, the stomach, the suprarenals, etc., but the bone marrow feels the effect first and foremost. No treatment is of any permanent benefit except the general tonic action of arsenic. The fifty years have perfected the diagnosis but the actual cause is still a mystery although certain partial factors have been discovered.

Puerperal Infection and Insufficiency of the Liver.—Bourcart's views on the importance of defective functioning of the liver as a factor in weakening the defensive forces were recently summarized in these columns, Feb. 25, 1922, p. 619. He explains that the abdominal autonomic nervous system is dependent on the portal circulation, and is thus subject to all the chemical and physical variations in this portal circulation. He advocates manual vibratory massage of this region and of the liver, and relates that the benefit therefrom has been particularly striking in cases of puerperal fever.

Policlinico, Rome

Jan. 15, 1922, **29**, Surgical Section No. 1

- *Constipation. V. Pauchet.—p. 3.
- *Simplification of Inguinal Herniotomy. O. Cignozzi.—p. 13.
- *Endothelial Tumors. L. Gobbi.—p. 23.
- *Chronic Polycystic Parotitis. C. Romiti.—p. 45.
- *Membranous Pericolitis. F. Speciale.—p. 57.

The Two Constipations. — Pauchet thus distinguishes between the constipation resulting from sluggish functioning of the lower bowel on the left side, from that resulting from defective functioning of the bowel on the right side, where the feces are more fluid and the toxins are more readily absorbed. Left untreated, chronic intestinal stasis, on the right side, reduces the earning capacity by 20 to 80 per cent. and predisposes to an early old age, to arteriosclerosis, cancer, and tuberculosis. Medical treatment includes organ extracts, massage, abdominal and respiratory exercises, reclining for an hour after meals, an abdominal support, and hygiene in eating, in addition to ingestion of oil and paraffin. If these medical measures fail, they at least have brought the patient into better condition for the operation, if this proves indispensable. They should be continued after the operation. He advocates ingestion of liquid petrolatum as a routine practice, a teaspoonful for children and a tablespoonful for adults, agreeing with those who say that if this was a regular habit, life would be prolonged and much disease warded off. He declares that a single stool during the day is not physiologic. The savage has a stool from the postprandial reflex after each meal, but the conventions of civilization have deadened this reflex. He regards Lane's kinks and similar disturbances as merely a manifestation of general enteroptosis.

Simplified Technic for Inguinal Herniotomy.—Cignozzi gives eight illustrations of the technic he has applied in 100 cases in men and twenty in women in the last eight years, with durable results. It is so simple that the operation is complete in a few minutes and recurrence is rarer than with other methods.

Endothelial Tumors.—Gobbi reports a case of endothelioma in the penis of a 10 months infant, and compares with this sixteen cases of sarcoma of the penis on record, at various ages, and six cases of endothelioma of the penis.

Chronic Polycystic Parotitis.—The physician of 51 seemed to be otherwise in good health when the right parotid developed the polycystic condition. It was not painful, and it scarcely interfered with mastication, but the gland was removed. The cysts were evidently of sclerogenous origin, as in others of the eleven operative cases of which Romiti gives the tabulated details. The ages ranged from a few months to 67 years, and the development had always been slow and gradual.

Membranous Pericolitis.—Speciale protests against this name as in the majority of cases the membrane binding down the bowel is a congenital anomaly, not the relic of an inflammation. He urges the necessity for examining for such membranes whenever the abdomen is opened up for any cause.

Brazil-Medico, Rio de Janeiro

Jan. 21, 1922, **1**, No. 3

*Analysis of Two Brazilian Fruits. A. da Matta.—p. 33.
*Ureter-Pyelography. D. Carvalho.—p. 39.

Vitamins in Two Brazilian Fruits.—Da Matta's study of the alligator pear and of the Brazil-nut has demonstrated water soluble vitamin in both, and that both offer certain advantages for the diet in diabetes, when carbohydrates and animal protein have to be restricted. The botanical name of the alligator pear of Brazil is *Persea gratissima,* and of the Brazil-nut is *Bertholletia excelsa.* He reports experimental research with them in rats along the same lines as Osborne and Mendel's work on vitamins in fruits.

Pyelography.—Carvalho reports a case which sustains the recent assertions of the harmlessness and efficiency of sodium bromid for the contrast suspension in pyelography and roentgenoscopy of the ureter and kidney pelvis.

Semana Médica, Buenos Aires

Nov. 24, 1921, **28**, No. 47

Prevailing Conceptions on Tuberculosis. G. Aráoz Altaro.—p. 695.
Chemical-Functional Research on Phenylurethan. Sánchez.—p. 703.
*Mobilization of Pancreas and Spleen. A. Gutiérrez.—p. 704.
Technic for Deep Roentgen-Ray Therapy. C. Heuser.—p. 716.

Splenectomy.—Gutiérrez says that the technic for operating on the head of the pancreas is already well defined and efficient, but the same cannot be said of operations on the body and tail. He gives a profusely illustrated description of the operative anatomy of this latter region, and the best means of procedure for removal of both the pancreas and spleen at once, without damage of the circulation in adjoining organs, also for removal of the body of the pancreas alone, or of the tail alone. He particularly emphasizes the different points where the artery and vein are to be ligated in these various operations.

Siglo Médico, Madrid

Jan. 28, 1922, **69**, No. 3555

*Toxic Injury of Internal Ear. A. Martin Calderin.—p. 85.

Toxic Injury of Internal Ear.—Martín Calderín reviews the long history of toxic deafness, and theorizes to explain the injury of the labyrinth from drugs or other toxins. The toxicity of the drug in this line seems to be proportional to its power to dissolve lipoids. By dissolving away the lipoids, it leaves the cell exposed, and treatment, he explains, should aim to restore lipoids, with purges to divert to the intestines the toxic action away from the labyrinth. When the deafness is of years' standing, there is no hope of the internal ear's recuperating under such measures. But, in recent cases, much may be accomplished, as in a case described in a girl of 10 who developed absolute deafness, dizziness and severe pain in both sides of the head after a course of quinin treatment for severe malaria. He gave a purge, and applied cups to the mastoid, and injected lecithin and cholesterin every day, with a subcutaneous injection of pilocarpin, 2 drops of a 2 per cent. solution, on alternate days for a week. Improvement was slow, and the injections of lipoids were kept up for some time. By the fifth month the hearing was entirely normal once more.

Archiv für klinische Chirurgie, Berlin

Dec. 14, 1921, **117**, No. 3

Roentgenoscopy of Stomach During Gallstone Colic. H. Smidt.—p. 425.
Bandage for Plastic Operations on the Face. J. F. S. Esser.—p. 438.
Resection of Thorax for Old Pleural Empyema. Wildegans.—p. 444.
*Pedunculated Flaps Without Skin Pedicle. J. F. S. Esser.—p. 477.
Embolic Aneurysms. W. Boss.—p. 492.
*Mammary Cancer During Gestation and Lactation. Wolff.—p. 505.
*Indirect Transfusion of Blood. K. Schlaepfer.—p. 512.
*Intrapelvic Protrusion of Acetabulum. B. Valentin and H. Müller.—p. 523.
False Diaphragmatic Hernia. H. Loebell.—p. 546.
Diverticulitis of the Large Intestine. R. Friedmann.—p. 564.

Pedunculated Flaps for the Face.—Esser tells how he always strives to cut the flap with an artery in the pedicle. If possible, he leaves nothing but the vessels in the pedicle, while other surgeons pay little heed to the vessels, and make the pedicle broad, taking up much skin. By saving the artery and sparing the skin, healing is prompt and the disfigurement minimal, even when the pedicle is twisted. He here describes flaps containing the angular artery with its course reversed. The chief advantage of these "island" flaps, without skin in the pedicle, is that the vascular pedicle can be stretched and twisted to suit, while skin will not stand this.

Mammary Cancer and Pregnancy.—Wolff adds his testimony to that of those who have called attention to the enhanced malignancy of mammary cancer developing during a pregnancy. Metastasis was soon evident in all of his ten cases of this kind.

Indirect Transfusion of Blood.—Schlaepfer remarks that during a recent trip to America he was amazed at the extensive use made of blood transfusion. He has modified the Brown-Percy method somewhat, as he describes. The transfusion seemed to have been responsible for three recent deaths in his service (Zurich), thrombosis or shock proving fatal. These cases teach the variety of the problems which each case presents.

Intrapelvic Protrusion of the Acetabulum.—The tabulated details of thirty-one published cases of the Otto-Chrobak pelvis on a pathologic basis are compared with the findings in traumatic cases, and with three other nontraumatic cases from the writers' own experience. In one woman of 50 the protrusion of the acetabulum was due to a tumor; in the second case, to a tuberculous process in the hip joint. In the third case, the destructive process had evidently begun and run its course while the young woman was in bed for seven months during treatment of a gonococcus process in the knee, with tendency to polyarthritis.

Dec. 24, 1921, **117**, No. 4. E. Payr Festschrift

Abdominal Gunshot Wounds and Shock. O. Kleinschmidt.—p. 569.
*Plastic Induration of the Penis. Sonntag.—p. 612.
*Operative Mobilization of Stiff Joints. J. Hohlbaum.—p. 647.
*Closing Artificial Anus. E. Gehrels.—p. 705.
Research on Wound Diphtheria. L. Frankenthal.—p. 716.
*Floating Tenth Rib. H. Kästner.—p. 737.
Pathologic Hallux Valgus. A. Kortzeborn.—p. 752.
Operative Treatment of Equinus Attitude of Foot Stump. Id.—p. 758.
Fracture of First Metacarpal Bone and Trapezium. G. Halter.—p. 761.
Partial Volvulus of Stomach with Ulcer. I. Boysen.—p. 768.

*Insufficiency of Ileocecal Valve. G. Hromada.—p. 784.
*Mesenteric Cysts. H. Naumann.—p. 819.
*Prevention of End-Bulbs on Severed Nerves. A. Hedri.—p. 842.

Plastic Induration of the Penis.—Sonntag has compiled about 200 cases of this kind; in over 10 per cent. there was formation of actual bone or cartilage tissue. In several cases there was Dupuytren's contracture besides. He describes a case personally observed in which he resected the fibrous band, two operations being necessary. In a second case spontaneous improvement was observed. This throws doubt on the benefit credited by some to fibrolysin injections in a few instances; other writers report negative results with it. Several writers are cited who have reported cures under roentgen or radium treatment. The most successful were Galewsky and Weiser with 6 of their 12 cases cured, 4 improved and only one not favorably influenced. Operative measures have cured in 75 per cent. Of the total 200 cases, 27 are known to have been cured; this includes 2 under fibrolysin, 8 under radiotherapy and 13 of the 22 given operative treatment. In this operative group of 22, 1 was improved; there was recurrence in 5, and in 3 the benefit was dubious. The bibliography is comprehensively reviewed.

Operative Mobilization of Stiff Joints.—Hohlbaum summarizes the details and ultimate outcome in 109 cases of ankylosis of knee or hip joint treated by operative measures. The ankylosis was traceable to rheumatism, gonorrhea, tuberculosis, trauma or osteomyelitis. In the 85 knee cases, excellent results were secured in 77.5 per cent. as also in 55 per cent. of the 20 hip-joint cases. The great danger is the rousing of a latent infection. A year is the shortest interval allowable. The temperature of the part is often a warning that the infectious process is still to be feared. The outlook for the new joint is better in persons of a sedentary occupation and those who have to kneel often at their work, such as chauffeurs, gardeners, locksmiths, etc. It is very important to hasten the neoformation of the bursa in the new joint, but whether this is hastened best by injection of saline, iodin or gelatin is still a question. The main point is to train the muscles suffering from their long inaction and the local toxins, and restore them to full functional capacity.

Operative Closure of Artificial Anus.—Gehrels tries to avoid making a long spur, when making the artificial anus, to begin with. This makes it possible for the spur to smooth out spontaneously as the loop of intestine is restored to its normal course. By freshening the posterior wall of the bowel at this point, any trace of the spur subsides in the following circular suture of the bowel. In 26 cases in which no attempt was made to crush the spur, the peritoneum did not have to be opened in 5, and the fistula healed after the single operation in all but 2 cases in which a minimal fistula required a second minor intervention. All were able to leave the hospital in two weeks, except one woman of 56 who succumbed to peritonitis; the cancer was so near the artificial anus that the loop of bowel was under too much traction.

Floating Tenth Rib as Sign of Enteroptosis.—Kästner relates that in 28 cases of movability of the tenth rib on both sides, there was extreme gastroptosis in 3, and more or less gastroptosis in 7 others, and in 4 the greater curvature sagged a little, but in 14 cases nothing could be found to suggest ptosis of any of the viscera.

Insufficiency of the Ileocecal Valve.—Hromada's experimental research and clinical experience confirm the ease and simplicity of the Kellogg-Payr method of correcting insufficiency of the ileocecal valve. It has been applied in sixteen cases in Payr's service. The disturbance was traced to a mesenteric gland in one case; to postoperative adhesions in six cases, and to relics of appendicitis in nine. The symptoms were those of chronic constipation rebellious to all measures. They subsided completely after the operation. The ileum is lifted up by four or five Lembert sutures passed through the cecum and the upper wall of the ileum. This restores normal conditions for the valve without the danger of hypercorrection, as in Kellogg's original method. Eleven illustrations accompany the article, and the importance of the physiologic closure of the valve is emphasized.

Mesenteric Cysts.—Naumann reports a case of a blood cyst in the mesentery of the transverse colon. He discusses the differential diagnosis of mesenteric cysts in general and their treatment. He warns against puncture, and insists on the necessity for operative treatment in every case.

Prevention of End-Bulbs on Severed Nerves.—Hedri cauterizes the stump of the peripheral nerve with the white-hot actual cautery. The cauterization extends high on the stump, and in nineteen cases of primary amputation and three of reamputation there have been no disturbances from the nerve since. There is no neuroma formation, no pains or other abnormal sensations in the stump. The results are thus what he expected from his experiments on animals, none of the divided and cauterized nerve stumps displaying any tendency to proliferation of the fibers to form the end-bulbs otherwise almost inevitable. Payr suggests applying this same measure to the trunk of the second and third branch of the trigeminal nerve in operative cases of trigeminal neuralgia.

Deutsche medizinische Wochenschrift, Berlin

Jan. 12, 1922, **48**, No. 2

Recent Researches on Pneumonia. F. Neufeld.—p. 51.
Tuberculous Allergy in Relation to Inflammation and Proteotherapy. H. Selter.—p. 54.
Treatment of Chronic Disorders of Circulation. Goldscheider.—p. 57. Begun in No. 1, p. 10.
Syphilitic Aortitis. A. Schittenhelm.—p. 60.
*Pathogenesis of Cyclic Respiration. H. Straub and K. Meier.—p. 61.
The Central Nervous System in Gas Gangrene in Man. E. Fraenkel and F. Wohlwill.—p. 63.
What Women Have Suffered from the War. G. Winter.—p. 64.
Deep Puncture in Diathermal Treatment of Tuberculosis of the Larynx. A. Hofvendahl.—p. 67.
Ganglion of the Nerve Sheath of the Ulnar Nerve. J. Dubs.—p. 68.
Isopropyl Alcohol for Disinfection of Hands. Bernhardt.—p. 68.
Medium for Cultivation of Streptococci from Blood. Piorkowski.—p. 69.
Displacements of Female Reproductive Organs. Liepmann.—p. 69.

Pathogenesis of Cheyne-Stokes or Cyclic Respiration.—Straub and Meier discuss the possible explanations of the interesting pathologic condition known as Cheyne-Stokes breathing. This condition has usually been referred to a reduction of irritability of the respiratory center with reference to the natural respiratory stimulus. Haldane and his assistants, however, have called attention to disturbances in the chemical regulation of the respiratory apparatus. The modern conception of the regulatory mechanism of respiration is to the effect that the respiratory center is stimulated to activity by the hydrogen-ion concentration of the fluid that laves the respiratory center. Under this influence, the respiratory center regulates the amount of ventilation of the lung so that the carbon dioxid tension of the alveolar air and thus of the arterial blood is preserved at a constant and characteristic value. The carbon dioxid content acts then as the quickly available regulator for the preservation of a uniform hydrogen-ion concentration. The carbon dioxid plays much the same part as the fly-wheel of a steam engine. Haldane and Douglas were able to show that cyclic breathing occurs in a healthy subject when the respiratory regulation is no longer determined exclusively by the carbon dioxid; when, namely, in addition to this, the shortage of oxygen begins to affect the situation quite materially. In a patient presenting cyclic respiration to a marked degree, Straub and Meier found that, in truth, the carbon dioxid tension of the alveolar air was permanently and materially reduced. When the inspirations, gradually increasing in depth, reached a maximum, the carbon dioxid tension measured 19 mm., and at the end of the apnea phase, 29 mm. The curve showing the combining function of the blood for carbon dioxid was normal in this patient. The p_H of the arterial blood, owing to the low carbon dioxid tension, was changed to abnormal basic values; it was 7.504 at the end of the period of apnea and 7.63 when the breathing was deepest. This observation shows that the respiratory disturbance was not occasioned by a deficiency of carbon dioxid in the blood, as in renal insufficiency, nor by a general disturbance of the circulation as in cardiac insufficiency. It is also opposed to the assumption of a reduced irritability of the respiratory center, and points to a lack of oxygen in the tissue fluid that laves the respiratory center.

Klinische Wochenschrift, Berlin

Jan. 15, 1922, **1**, No. 3

Fundamental Problems of Internal Secretion. Ascher (Bern).—p. 105.
Pathologic Physiology of Chronic Constipation. E. Reiss.—p. 108.
*Effect of Vitamins on Digestion and Metabolism. Bickel.—p. 110.
*Ether as a Stimulus to Flow of Pancreatic Juice. G. Katsch and L. von Friedrich.—p. 112.
Roentgenoscopy from Left Side with Subcardial Ulcer. Wolff.—p. 115.
Blood Sugar Level in Children after Intravenous Infusion of Strong Solutions of Glucose. H. Opitz.—p. 117.
Ovarian Tumors Complicating Child-Bearing. E. Vey.—p. 119.
Experiences with Friedmann's Tuberculosis Remedy. Deusch.—p. 120.
Action and Ageing of Vaccines. Buschke and Langer.—p. 122.
Physicochemical Formation of Gallstones. Bolt and Heeres.—p. 124.
Animal Experiments on Spirochetes of Recurrent Fever. Henning.—p. 124.
The Chromatophores in the Skin of Man. G. Miescher.—p. 125.
A Case of Renal Diabetes. B. Uedinghoff.—p. 126.
Results of Tendon Operation in Radial Paralysis. Perthes.—p. 127.
Treatment of Early Syphilis. G. A. Rost.—p. 129.
Protection of Mothers. A. Eckstein.—p. 131.
The Constitution and Life Expectancy. Florschütz.—p. 133.

The Influence of Vitamins on Digestion and Metabolism.—Bickel has been investigating the question whether the functioning of the gastro-intestinal glands is changed by a vitamin-free diet. It has frequently been asserted in the literature that the cause of loss of weight occurring with vitamin-free feeding lies in the defective decomposition of the food in the gastro-intestinal canal, owing to the absence of sufficient digestive juices. K. Miyadera, working in Bickel's laboratory, investigated on a Pawlow fistula dog the action of the gastric glands in a vitamin-free diet and found that the diet selected, which consisted of polished rice, pure wheat albumin, 5 gm. of sodium chlorid, and occasionally a little lard, elicited practically no secretion of digestive juices in the stomach, but that, following the ingestion of a weak, watery solution of alcohol as a test diet, a vigorous gastric secretion occurred, which continued at the same level throughout the entire duration of the experiment—seventy days. From this we may conclude that the power of the gastric glands to secrete is not impaired by a vitamin-free diet, although the selected diet, deficient in vitamins, fails to stimulate a secretion. It was further shown that in spite of lack of gastric secretion the eventual decomposition of the vitamin-free food in the intestine and its absorption by the intestinal wall were not thereby disturbed. Bickel emphasizes that any attempt to explain theoretically the disturbances of metabolism that occur in connection with a diet deficient in vitamins must not lose sight of the fundamental facts here set forth.

Ether as a Stimulus to Flow of Pancreatic Juice.—Katsch and von Friedrich, having in mind Claude Bernard's observation that ether exerts an extraordinarily lively stimulus on the secretional activity of the pancreas, endeavored to make diagnostic use of the physiologic finding. There is considerable clinical interest in the diagnosis of pancreas functioning at the present time. Previous procedures for securing specimens of the duodenal fluid have been impracticable in that they consumed so much time. On the basis of their experiments with thirty patients, the writers state that the introduction of a small dose of ether (from 1 to 4 c.c.) into the duodenum resulted in a prompt (within five minutes, at the most) and copious flow of pancreatic juice. Sufficient quantities could always be aspirated for manifold diagnostic purposes. The admixture of bile was very slight. Einhorn's technic was followed in the introduction of the tube.

Monatsschrift für Geb. und Gynäkologie, Berlin

December, 1921, **56**, No. 3-4

*Pregnancy Anemia of Pernicious Type. M. Beckman.—p. 119.
Racemose Ovarian Cystic Tumor. F. Hirschenhauser.—p. 129.
Desmoid Tumors of the Ovaries. E. Mauthner.—p. 135.
*Bactericidal Action of Yeast. P. Schugt.—p. 144.
Occipital Meningocele. A. Santner.—p. 151.
Radiotherapy in Gynecology in 1920. H. Langer.—p. 160. Cont'd.
American Literature on Radiotherapy of Tumors, 1918-1921. A. Stein.—p. 178.
Recent Literature on the Menstrual-Genital Cycle. Schroeder.—p. 183.

Pregnancy Anemia of Pernicious Type.—In three of the six cases reported by Beckman, improvement was evident after delivery. In two other cases the delivery seemed to aggravate conditions, and the women soon succumbed. Interruption of the pregnancy is the only recourse when pernicious anemia develops during gestation. The fatty degeneration of the heart in these cases makes it imperative to relieve the heart of the stress of the childbirth. He adds that it may be well to give arsenic and transfusion of blood to improve conditions before attempting to evacuate the uterus.

Bactericidal Action of Yeast.—Schugt's research failed to demonstrate any bactericidal action from yeast unless fermentation was going on. Fermenting yeast has bactericidal power, but the small amounts used in therapeutics are almost negligible in this respect. The effect is felt only by those bacteria which are especially susceptible to any change in the medium containing them.

Monatsschrift für Kinderheilkunde, Berlin

October, 1921, **22**, No. 1

Bile Pigment in Icterus Neonatorum. Knoepfelmacher and Kohn.—p. 1.
*Cerebrospinal Fluid in Congenital Syphilis. O. Tezner.—p. 4.
Pemphigus Hereditarius. H. Mautner.—p. 15.
*Paroxysmal Digestive Disturbances. A Reuss.—p. 17.
Training of a Children's Nurse. A. Reuss.—p. 22.
Primary Tuberculous Ulceration in Skin. K. Dietl.—p. 27.
Syphilitic Nephritis in Childhood. Else Kirsch-Hoffer.—p. 31.
*Alimentary Toxicosis in Infants. Bessau et al.—p. 33.
Pathogenesis of Osteomyelitis in Infants. Leichtentritt.—p. 40.
Diagnosis and Treatment of Diphtheria of the Nose in Children. F. Göppert.—p. 44.
Discrepancies Between Clinical and Anatomic Diagnosis of Rachitis. E. Schiff.—p. 46.
Abortive Measles in Early Childhood. E. Nassau.—p. 49.
Congenital Fistula of Ear and Atresia of External Meatus. Erfurth.—p. 55.

Cerebrospinal Findings in Congenital Syphilis in Children.—Tezner reports his findings in 43 children. There were absolutely positive findings in 41.8 per cent.; positive Wassermann reaction in 32.5 per cent., and lymphocytosis plus positive Wassermann in 13.9 per cent. In the 16 infants among these children there were absolutely positive findings in 62.5 per cent.; positive Wassermann reaction in 50 per cent.; positive Nonne-Apelt reaction and lymphocytosis each in 31.3 per cent.; a pronounced syphilitic exanthem in all except one infant, which presented lymphocytosis and a positive Wassermann reaction in the spinal fluid. Of the 27 older children, 20 showed no nervous symptoms, but there were absolutely positive findings in 15 per cent.; positive Nonne-Apelt in 5 per cent., and lymphocytosis in 5 per cent. In 7 of the older children who presented nervous manifestations there was a positive Wassermann reaction in the spinal fluid in 70.1 per cent. and lymphocytosis in 20 per cent. The Pandy reaction (when taken) was parallel to the Nonne-Apelt reaction. No parallelism between the other reactions could be established. The positive Wassermann reaction was more common than in adults; the reaction in the spinal fluid was often the only change discoverable. While the spinal fluid is involved in a comparatively large percentage of infants, the changes retrogress rapidly and are not associated with any permanent injuries to the central nervous system.

Familial Paroxysmal Digestive Disturbances.—A neurosis of the autonomic nervous system seems to be responsible for the paroxysmal digestive disturbances in the various members of the family described.

Gastro-Intestinal Toxicosis in Infants.—Bessau, Rosenbaum and Leichtentritt discuss their experiences with 28 cases of alimentary intoxication during the unusually hot summer of 1920. Only six infants survived, the mortality being thus 80 per cent., but these were hospital cases and only the severe cases reached the hospital. They found that when the food was properly sterilized the danger from intoxication was very slight. They concluded after investigation that the prophylactic effect of the baby feeding station is due chiefly to the thorough sterilization of the food, and that the other factors of preparation and dosage, under a physician's control, are secondary. What they particularly noted was that only exceptionally did the beginning of the diarrhea and the first manifestations of intoxication coincide in point of time. In most cases, the intoxication followed the diarrhea instead of preceding it; sometimes betraying itself on the same day as the diarrhea, but usually later. In fact, they were much astonished to note how long the diarrhea often existed before signs of intoxication proper appeared. From this fact they are inclined to accept the pathogenetic conclusion that the primary disturbance in alimentary toxicosis is the diarrhea, that the primary causa peccans is the agent that produces the diarrhea and not the toxicosis or intoxication. The intoxication is the result of the grave disturbances caused by the diarrhea, they assert.

Münchener medizinische Wochenschrift, Munich

Jan. 6, 1922, **69**, No. 1

Pathologic Anatomy in Relation to the Nomenclature of Pulmonary Tuberculosis. F. Marchand.—p. 1. Conc'n No. 2, p. 55.
Anemia from Use of Goat's Milk. W. Stoeltzner.—p. 4.
Renal Glycosuria as Sign of Pregnancy. Seitz and Jess.—p. 6.
Influence of Medium on Agglutinability of Typhoid Bacillus. Hohn.—p. 7.
Paralysis of Capillaries of Intestine in Influenza. F. Limper.—p. 12.
Chronic Appendicitis in Childhood. Lunckenbein.—p. 12.
Permanent Cure of Operated Mammary Cancer with and Without Prophylactic Roentgen Irradiation. F. von den Hütten.—p. 13.
The Colloidal Nature of Mercury in Intravenous Injections of Mixtures of Neoarsphenamin and Mercury Salts. C. Tollens.—p. 15.
Artificial Production of Acute, General Anhidrosis or Oligidria by Formaldehyd. R. Griesbach.—p. 16.
Basis of the Functional Adaptation of Muscles in Sport Activities. Deppe.—p. 16.
Treatment of Oxyuriasis. F. Franke.—p. 17.
Lymphatic Leukemia Manifested as Symmetrical Swelling of Parotid Glands. H. Langsch.—p. 18.
Remarks on Rachitis. F. Schede.—p. 18.
Treatment of Gastric Ulcer. F. Müller.—p. 20.

Therapeutische Halbmonatshefte, Berlin

Oct. 1, 1921, **35**, No. 19

The Physiologic and Pharmacologic Bases of Calcium Therapy. E. Starkenstein.—p. 585. Conc'n.
*Treatment of Erysipelas with Roentgen Rays. R. Schrader.—p. 600.

Treatment of Erysipelas with Roentgen Rays.—Schrader recalls that Hesse (in 1918) was the first to report the use of roentgen rays to combat erysipelas. The results were for the most part favorable. Schrader reports his results in seven cases, which were uniformly good. The healing of the lesions was expedited and the fever was favorably affected. A progression of the inflammatory process in the irradiated area was not observed in a single case. Complications (inflammation of the kidney) occurred in only one instance in which irradiation could not be begun until several days after the eruption of the erysipelas. The dosage should not ordinarily exceed one sixth of an erythema dose, and in no case should more than one fourth of an erythema dose be given. If the erysipelas covers so large an area that it cannot be treated all at once, the "head" of the erysipelas and a portion of the adjacent healthy tissue should be irradiated to prevent further progress of the infection. In all such cases irradiation applied to the head of the erysipelas sufficed to cause the inflammation to retrogress promptly in the area that was not irradiated. The day following the irradiation the reddening became less marked and the swelling died down.

Wiener klinische Wochenschrift, Vienna

Dec. 22, 1921, **34**, No. 51

*Experimental Production of Tar Carcinoma. B. Lipschütz.—p. 613.
*Increase of Globulins in Spinal Fluid. H. Baar.—p. 614.
Anatomy and Histology of the Female Urethra. O. Sachs.—p. 615.
Perineural Injections of Antipyrin in Sciatica. Högler.—p. 617.

Experimental Production of Tar Carcinoma.—Lipschütz reports that his efforts to produce carcinoma in mice by means of external applications of coal tar yielded positive, tangible results in about 45 per cent. of the trials. At least inflammations of the skin were observed frequently; necrosis, however, was not noted in a single instance. The clinical process showed a regular course of development in the skin of the animals. As to the time that elapsed before the first skin changes became evident, he states that one animal showed the first distinct macroscopic changes in 88 days, two in 112, two in 120 and one in 125 days. The first manifestations were grayish white nodules, not quite as big as a pinhead, rising above the surface of the skin. These continue to grow and to assume more and more distinct forms. The nodules appear as wartlike formations or they resemble papillomas with broad bases and a distinct pedicle. Their surfaces are rough and warty or fissured, presenting elevations that remind one of gloved fingers. This condition may persist for many weeks. In two instances, subcutaneous transplantations of these wartlike nodules to healthy mice resulted in the development after nineteen days of characteristic skin changes presenting a wartlike appearance, although the transplanted tissue itself was completely absorbed. In three instances (in 17, 42 and 45 days, respectively, after the appearance of the first nodule) a generalization occurred, up to seven distinct nodules in one instance, either at some distance from the primary skin changes or in the same immediate region, in which case there was a marked similarity to the clinical behavior of mother and daughter warts in man. In one mouse, sixty days after receiving a transplant from a wartlike skin change, a tumor as large as a good-sized cherry developed. The tumor presented a reddish color, a smooth, shiny and taut surface and permeated the whole thickness of the skin. When incised it proved to be of the same coarse-fibered structure throughout, pointing rather to a sarcoma.

Diagnostic Significance of Increase of Globulins in the Cerebrospinal Fluid in Affections of Childhood.—Baar made examinations in a number of organic and functional affections of the nervous system in childhood with respect to the behavior of globulins in the cerebrospinal fluid. He found an increase of the globulin content in many different cases. In uremic and eclamptic attacks, and especially in repeated spasmophilic convulsions, the globulin content of the cerebrospinal fluid attains the same degree as in tuberculous meningitis. In convulsions due to disturbances of functioning, the globulin content of the spinal fluid is greatest during the convulsive stage and drops after the convulsions cease, whereas in the case of tuberculous meningitis the globulin content increases from the beginning of the irritation stage until the fatal outcome. In a number of organic affections of the central nervous system which are of moment in the differential diagnosis of tuberculous meningitis, there was just as marked an increase in the globulin content as in the latter disease. However, the Pándy reaction, if conservatively interpreted, will render valuable service in differentiating tuberculous meningitis from clinically similar functional affections; particularly, a negative reaction is of importance. For the differential diagnosis as against organic diseases presenting a similar clinical picture to tuberculous meningitis, the value of the phenol reaction is only limited, and, in case of a positive reaction, only the continuous increase of the intensity of the reaction is significant.

Zentralblatt für Chirurgie, Leipzig

Nov. 26, 1921, **48**, No. 47

Hemostasis in Vessels Difficult of Access. J. Volkmann.—p. 1710.
*Removal of Stomach Contents Before Operation for Perforating Ulcer. R. Gandusio and G. Pototschnig.—p. 1712.
Murphy Button Twenty Years in Stomach. Kelling.—p. 1714.
Contrast Mediums for Pyelography. A. von Lichtenberg.—p. 1716.
*A Refractory Bladder Wall Defect. F. Linde.—p. 1719.
Primary Suture after Cholecystectomy. J. Vorschütz.—p. 1721.
Preparation of Procain Solutions. K. Propping.—p. 1723.

Removal of Stomach Contents Before Operation for Perforating Ulcer.—Gandusio and Pototschnig say that during the six months just past they have always removed the stomach contents before proceeding with an operation for perforating ulcer, and that no harm has ever resulted; in fact, they are inclined to ascribe the good results and the uneventful postoperative course in these cases in part to this maneuver. It aids the operator and is of undoubted advantage to the patient.

Two Auxiliary Measures that Proved Helpful in the Operative Closure of Extensive Bladder Wall Defects.—Linde reports the case of a woman who in a traffic accident suffered a fracture of the pelvis, complicated by a laceration of the anterior vaginal wall and the bladder. Seven attempts to close the defect of the bladder had proved futile, a pedunculated flap having been used in one instance. Over two years after the accident Linde made a renewed attempt to close the defect. In order to effect a thorough irrigation of the bladder he introduced two catheters, one through the operative wound and one through a puncture incision immediately in front of the anterior lip of the os uteri. To take the weight off the suture, the uterus was drawn forward with forceps so that the vaginal portion of the cervix reached the vulva. The posterior vaginal fornix was stuffed out with gauze tampons, which took still further weight off the bladder suture, since the cervix was pushed toward the pubic symphysis. Under copious irrigation of the bladder the defect healed partly (50 per cent.). The contractions of the bladder occurring in the earlier operations immediately after the closure of the bladder did not take place at first, although they came on later (but were not so marked), immediately after which half of the suture broke open again. Two months after the last operation he closed the balance of the fistula. The suture was again favored by drawing forward the uterus. Prolonged irrigation of the bladder by the Martin method was instituted and the defect healed without further mishap. Two years afterward the patient was reexamined. She could hold the urine two hours. There were signs of a slight chronic inflammation of the bladder but the urine appeared clear. Linde thinks that his final success was due to the fact that the uterus was drawn forward (thus taking the strain off the suture), together with the prolonged continuous irrigation of the bladder.

Zentralblatt für Gynäkologie, Leipzig

Nov. 26, 1921, **45**, No. 47

Present Condition of Twenty-Four Tuberculous Women Who Refused an Interruption of Pregnancy. G. Hamburger.—p. 1686.
Tetanus Following Abortion. P. Esau.—p. 1695.
Time and Causal Relations Between Parturition, Ovulation and Menstruation. J. Novak.—p. 1697.
The Method of Choice for Cesarean Section. F. Heimann.—p. 1700.
Extremely Large Lutein Cysts. M. Trancu-Rainer.—p. 1702.
Training Students to Use Rubber Gloves. H. Kritzler.—p. 1703.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 10, 1921, **2**, No. 24

*Ulcerative Colitis. J. T. Leusden.—p. 2890.
*Test for Surface Tension. R. Brinkman and E. v. Dam.—p. 2905.
Dysentery in Flanders. D. J. H. Pol.—p. 2909.
Compression of Thorax by Elevator. J. van Woerden.—p. 2911.
*Acute Ascending Paralysis. N. A. Scheers.—p. 2913.
*Case of Melena Neonatorum. J. A. K. Swormink.—p. 2915.
Compulsory Pasteurization of Milk. A. C. van Bruggen.—p. 2936.

Ulcerative Colitis.—Leusden remarks that the war experiences have revealed that the puzzling cases known of old as chronic suppurative colitis are in reality manifestations of or relics of Flexner dysentery. The data presented form a series of convincing arguments to encourage autogenous vaccine treatment in chronic colitis. The serum agglutinates dysentery bacilli at a high dilution, but the chronic suppuration is not the work of the dysentery bacilli but of colon bacilli invading the lesions left by the dysentery. The serum and the serum of those with repeated attacks of catarrhal enteritis agglutinate their own colon bacilli at a very high dilution, but none from other patients.

Gage for Surface Tension of Small Amounts of Fluid.—Brinkman and Van Dam recall that capillary tubes cannot be used to determine the surface tension of biologic fluids as it is impossible to keep them clean enough. A simple and reliable method is described which answers for even minute amounts of fluid, and requires only the ordinary Hartmann-Braun torsion balance and a flat platinum ring which is suspended horizontally from the hook of the torsion balance. The fluid to be examined is placed in a watch glass, and this is screwed up to the required height to allow the ring to come in contact with the surface of the fluid. The amount of force then required to free the ring (K) is recorded by the torsion balance, and the weight of the ring, plus the fluid adhering to it (G), is also recorded. By subtracting G from K and dividing by the circumference of the adhesion area, we get the surface tension. The test can be applied with as little as 0.5 or 1 c.c. or less, and can be used even with colloidal solutions, and the whole is complete in thirty seconds.

Acute Ascending Paralysis.—The previously healthy young man suddenly developed intense pain in the back and slight fever, with exaggeration of the reflexes. Acute ascending paralysis followed, with death the second day. There was nothing to indicate polyneuritis. The mother developed soon after pyelitis with cystitis, further testimony to the infectious character of Landry's paralysis.

Melena Neonatorum.—The infant was 16 days old when the melena appeared, with profuse losses of blood in stools and vomit. Swormink injected subcutaneously 10 c.c. of a gelatine solution and 10 c.c. of diphtheria antitoxin, and the hemorrhagic tendency was arrested at once.

Dec. 17, 1921, **2**, No. 25

Mutation of Bacteria and Heredity. J. J. van Loghem.—p. 2981.
*Outcome of Modern Treatment of Syphilis. G. C. van den Heuvel.—p. 2988.
*Influence of Sexual Functioning on Cancer. P. W. L. Penris.—p. 2995.
Roentgen-Ray Treatment of Trichophytosis. E. Penso.—p. 3002.

Results of Modern Treatment of Syphilis.—Van den Heuvel compares the outcome in regard to the Wassermann reaction in 577 cases of syphilis. It veered to negative in only 52.1 per cent. under mercury alone, and this not until after from one to twenty-two years. With mercury first and then arsphenamin, the corresponding figures were 60 per cent., and the interval before the reaction became negative was never less than one year, and in the majority from the fourth to the thirteenth and up to the twenty-second year. With the combined arsphenamin and mercury treatment, the reaction became negative in 9 cases in from two to nine months; in 32 within a year; in 29 within two years, and never later than the sixth year. Tertiary manifestations or tabes or paresis developed in 4 per cent. of the 184 given mercury alone; in 5 per cent. of the 190 given first mercury and, later, arsphenamin, and in 0.5 per cent. of the 203 given the combined treatment. In this last mentioned group iritis developed during treatment in 2 cases; chorioretinitis in 2, and retinitis in one. The average for the whole material before the Wassermann reaction became negative was eight years, eight and a half years, and over two and a half years for the three groups. These figures, he adds, show the superiority of the combined treatment over other methods but they likewise show that, even at the best, treatment is still far from perfect.

Influence of Gestation on Incidence of Cancer.—Penris compares various statistics from different countries, and claims that no dependable evidence has been presented yet which settles the question as to whether child-bearing and lactation predispose to cancer or not.

Hospitalstidende, Copenhagen

Jan. 4, 1922, **65**, No. 1

*Right Sciatica; Left Brachialgia. V. Christiansen.—p. 1.
Present Status of Phototherapy and Heliotherapy in Pulmonary Tuberculosis. C. Holten.—p. 12. Conc'n No. 3.

Rheumatic Sciatica.—Christiansen says that among the 5,135 patients at the neurologic policlinic at Copenhagen in the last seven years, only 6 per thousand had sciatica. During this period, disseminated sclerosis was encountered in 2.5 per cent. of the total. The attack of sciatica is nearly always preceded by one or more attacks of lumbago, just as neuralgia from neuritis in the brachial plexus is nearly always preceded by one or more attacks of torticollis. It is difficult to show the connection between the lumbago and the sciatica, but the connection between the wry-neck and the plexus neuritis is easy to trace as the tender trapezius muscle is readily accessible to palpation. In both cases the disturbance is primarily in the muscle. This may occur again and again with no other manifestations than the lumbago or the stiff neck. But the process spreads to involve the fascia and the connective tissue, and finally invades the plexus, the lumbosacral or the brachial plexus. With neuritis of the brachial plexus, the first thing is to exclude cervical ribs.

Jan. 11, 1922, **65**, No. 2

*Heredity in Dementia Praecox. S. Hansen.—p. 17.

Heredity in Dementia Praecox.—Hansen relates that the committee officially appointed for anthropologic research in Denmark is now busily compiling data throughout the country in regard to all the insane, the feebleminded, the deafmutes, and other similarly abnormal persons, and their family history. In Sweden the government has recently appropriated a certain regular annual sum for research in this line, three times larger than the sum the Danish committee has to work with, but already an extensive material has been compiled.

Feb. 8, 1922, **65**, No. 6

*Cultivation of Typhoid Bacilli. S. V. Bagger.—p. 81. Conc'n.
Method for Isolating Single Bacterial Strain. J. Orskov.—p. 86.

Capillary Cultures of Typhoid Bacilli.—Bagger comments favorably on the ease, simplicity and reliability of what he calls the capillary method for differential cultivation of bacteria from the stools. After the stool has been well mixed with saline and kept for an hour at room temperature, it is poured into a conical glass or beaker and a strip of filter paper, 12 cm. long by 1 cm. wide is hung in the glass, the end of the paper 1 cm. below the surface of the fluid, without touching the side of the glass. After half an hour of this, the paper is pressed on a Conradi plate, and set in the thermostat till the next day. He has applied this method to 800 specimens. It is particularly useful when proteus bacilli are unusually numerous, as they crowd out others on the plates with the ordinary technic. The typhoid and paratyphoid bacilli seem to climb rapidly up into the strip of paper, the colon bacilli following behind. With a dilution of even 1 : 40,000, he found ten or twelve isolated colonies of typhoid bacilli above the zone of colon bacilli.

Hygiea, Stockholm

Dec. 31, 1921, **83**, No. 24

*Kidney and Bladder Calculi in Children. S. Johansson.—p. 833.
*Treatment of Hemoptysis in Pulmonary Tuberculosis. L. Ehrenberg. —p. 844.
*Bacteria in the Blood in Typhoid. N. Svartz.—p. 852.

Urinary Calculi in Children.—Johansson had no difficulty in recognizing the calculus in the left ureter and the calculus in the right kidney of the boy of 11. He cut down on the ureter, well above the calculus, and removed it without difficulty. The calculus in the right kidney was removed two months later. It had grown in size in the interim. Both were calcium oxalate and calcium phosphate concretions, as also in a second case, and prompt recovery followed their removal. In the second case the calculus was in the bladder, and required the high incision to remove it. The symptoms from a calculus in a child and the treatment of the calculus are about the same as in an adult. There is not always actual pain. The difficulty is to think of the possibility of a calculus in a child. This is the last thing to occur to mind, as it is so extremely rare in children, as Johansson shows by statistics from different countries.

Acute Hemoptysis.—Ehrenberg explains that the supposed advantage from giving a narcotic with hemoptysis from pulmonary tuberculosis is a deceptive advantage; in reality it does harm, by reducing the capacity to cough up the blood. In his extensive experience the hemoptysis was never preceded by any special coughing. The hemorrhage always came like a bolt from a clear sky, and narcotics are directly contraindicated. He regards the plan of throwing a ligature around the extremities as a safe and simple measure, and advises it with every hemoptysis that does not stop spontaneously at once. The best constricting band for the purpose in the home is a long stocking, and these are always available everywhere. The aim is to constrict only enough to induce venous hyperemia. The first thing is to give salt by the mouth or, in the hospital, 2 gm. sodium bromid. If the bleeding continues, tie a band around the root of each limb, and leave these bands on for twenty or thirty minutes after the main coughing up of blood is past. The arterial pulse in the limbs must be supervised, and the ligatures should be only gradually removed, and only one limb at a time. If the hemorrhage seems to come from rupture of a large vessel, infuse 7 c.c. of a 10 per cent. solution of calcium chlorid by the vein, and the following days give 1 gm. of sodium bromid three or four times a day.

Blood Cultures in Typhoid.—Svartz obtained positive results in 100 per cent. of 12 cases in the first week of typhoid, and in 75 per cent. of 22 in the second week. The blood was drawn into beef gall, and the next day transferred to an agar tube. Schmitz reported only 38 per cent. positive findings in 45 cases in the first week, and much less in later weeks in the epidemic of 445 cases at Jena in 1915.

Norsk Magazin for Lægevidenskaben, Christiania

January, 1922, **83**, No. 1

*Nitrogenous Waste in the Blood. H. F. Høst and Hatlehol.—p. 1.
*Death After Cauterizing Pleural Adhesions. W. Holmboe.—p. 16.
Hypernephroma; Two Cases. A. Looft.—p. 19.
*Neurosyphilis. V. Magnus.—p. 23.
Leptothrix in Blood in Case of Endocarditis. O. Jervell.—p. 36.
*Tuberculous Spinal Meningitis. F. Harbitz and R. Hatlehol.—p. 47.
Solitary Tubercle in Spinal Cord. F. Harbitz.—p. 53.

Nitrogenous Waste in the Blood.—Høst and Hatlehol tabulate the findings in 34 cases in respect to the products of nitrogen metabolism and their concentration in the blood in both physiologic and pathologic conditions; 4 with uremia were under prolonged study for weeks or months till death. The proportion of creatinin increased regularly as the condition grew worse. This was the most constant of all the findings. The alkali reserve was reduced in all of these 4 cases, but in one case, by giving sodium bicarbonate, it was restored to normal although the patient was dying and died of uremia. This is mentioned as showing that acidosis cannot be of any essential import in the etiology of uremia. In the 8 diabetics, the nitrogen waste findings were about the same as in the healthy, except that the creatinin figure was rather high, and in one the uric acid reached 5.8 per cent. In 3 cases of nephrosis and 3 of nephrosclerosis, the nitrogenous waste findings were like those in the healthy. In 6 patients convalescing from nephritis, the findings were normal, as also in a case of chronic nephritis so far as the uric acid and creatinin were concerned, while the urea and nonprotein nitrogen were much increased.

Death After Burning Out Pleural Adhesions.—Holmboe relates that a man of 39 had been treated with artificial pneumothorax for three years, with full earning capacity and no symptoms. Then it was discontinued, but symptoms returned, and the attempt to renew the artificial pneumothorax showed that adhesions had developed in the upper pleura, and a small cavity could be seen with the roentgen rays. The man was syphilitic, and both liver and kidneys were diseased. He pleaded to have the adhesions broken up, and Jacobæus' technic was applied, but the adhesions were so compact that after two hours' working with the platinum burner, in what seemed to be nothing but connective tissue, the attempt was abandoned. No harm seemed to have been done, but a few days later sudden pain, chill and a coughing paroxysm with following emphysema, empyema and death in a few days confirmed that the cauterization had weakened the wall of the cavity, and it had ruptured into the pleura. Jacobæus has had no mishaps of the kind in his 100 cases.

Neurosyphilis.—Magnus quotes American writers on the prevalence of neurosyphilis, and says that his own experience with 232 cases in private practice is that 20 per cent. of syphilitics have some form of neurosyphilis. In his 232 cases, 96 had had no treatment before, and only 10 had been treated with arsphenamin in the first stage of the infection. His analysis of these experiences confirms the necessity for systematic examination of the spinal fluid as the only means to ward off grave neurosyphilis. As this requires laboratory skill, he urges that the state should provide this, like the State Serum Institute in Denmark. When general paresis has once developed, it is useless to keep on with specific treatment. With tabes, all we can accomplish with arsphenamin is possibly to influence the lancinating pains. He comments on the way in which the Wassermann reaction has shown the hitherto unsuspected prevalence of syphilis everywhere.

Tuberculous Spinal Meningitis.—The young woman had been supposedly healthy until after two weeks of headache, and pain in the loins, the legs became paralyzed and other symptoms suggested poliomyelitis, with death in coma in less than a month from the first symptoms. The lumbar puncture findings had suggested tuberculous meningitis, and necropsy revealed tuberculous meningomyelitis, leukomyelitis and poliomyelitis.

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TULAREMIA Francis 1921: A NEW DISEASE OF MAN *

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Tularemia is a specific infectious disease due to *Bacterium tularense,* and is transmitted from rodents to man by the bite of an infected blood-sucking insect [1] or by the handling and dissection of infected rodents by market men [2] or laboratory workers.[3]

As observed in Utah in the months of June, July and August, the disease is initiated by the bite of an insect, most probably the blood-sucking fly *Chrysops discalis,* which previously has bitten a jack rabbit infected with *Bacterium tularense.* Following the fly bite on some exposed surface of the body (neck, face, hands or legs), the onset occurs within forty-eight hours with fever and pain in the region of the lymph glands which drain the bitten area; the patient is prostrated and goes to bed; the lymph glands which drain the bitten area become tender, inflamed and swollen, and commonly suppurate, requiring incision. The fever is of a septic type, lasting from three to six weeks, and convalesence is slow.

Probably two dozen cases occurred in Millard County, Utah, in each of the years 1917, 1918, 1919 and 1920. The first case known to have terminated fatally was that which I [4] reported in 1919. The chief interest in tularemia as a disease of man arises from the disability which accompanies the illness. A disabling illness which overtakes the farmer in the busy season of midsummer, causing two or three months of sickness, is a matter which merits serious consideration.

Tularemia is a disease of the rural population, particularly attacking persons who work in the fields, men, women or children. Human cases occur in Utah during the seasonal prevalence of the fly (*Chrysops discalis*) in a community where jack rabbits are dying from an epizootic of a plaguelike disease of rodents, due to *Bacterium tularense.*[5] The reservoir of infection is in the sick and dying jack rabbits. The occurrence of human cases in nature in Utah has probably taken place every year for at least the last fifteen years. Two human cases have been reported from Cincinnati, probably contracted by handling infected rabbits. Six infections have recently occurred in men who handled or dissected infected guinea-pigs and rabbits in laboratory investigations of the disease.

Tularemia has been found in nature in the California ground squirrel *Citellus beecheyi,* the cotton tail rabbits of southern Indiana, the jack rabbits of Utah, and the ground squirrel *Citellus mollis* in Utah.

The proved presence of *Bacterium tularense* in the blood of rodents and in the blood of two human cases is so striking as to suggest the name tularemia for the disease. The bacteremic characteristic of the disease thus affords the necessary condition for ready transfer by blood-sucking insects. Already six insects have been proved by various workers of being capable of transmitting this infection.

INSECT TRANSMISSION

The rabbit louse *Haemodipsus ventricosus* is found on jack rabbits in Utah and is capable of transmitting the infection from tame rabbit to tame rabbit in the laboratory; [6] this warrants the conclusion that lice transfer the infection throughout the year and perennially from jack rabbit to jack rabbit in Utah.

The blood-sucking fly *Chrysops discalis* commonly found on horses in Utah is capable of transmitting the infection from tame rabbit to tame rabbit in the laboratory,[7] and this fly bites man; presumably it bites jack rabbits, and especially those which are sick or dying from tularemia and thus oblivious to biting flies.

The bedbug *Cimex lectularius,* which commonly infests beds and bites human beings and rodents, is capable of transmitting tularemia from white mice to white mice.[8]

Bacterium tularense suffered no apparent diminution of virulence by reason of long residence in bedbugs. This virulence was manifested by acute death from tularemia within seven, five, five and six days, respectively, in cases of (1) a mouse that was bitten by bugs infected seventy-one days previously; (2) a mouse that ate a bug infected 165 days previously; (3) a guinea-pig that was injected with fresh feces of bugs infected 167 days previously, and (4) a guinea-pig injected with bug feces that had been deposited seventy-six days after the date of infection of the bugs and which had subsequently dried on filter paper at an average room temperature of 20 C. for twenty-six days.

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*The name tularemia is based on the name of the causative organism, Bacterium tularense, plus αἷμα, blood, and has reference to the presence of this bacterium in the blood, on the analogy of leukemia or bacteremia.

[1] Francis, Edward: The Occurrence of Tularaemia in Nature as a Disease of Man, Pub. Health Rep. **36:** 1731-1738 (July 29) 1921.

[2] Wherry, W. B., and Lamb, B. H.: Infection of Man with Bacterium Tularense, J. Infect. Dis. **15:** 331-340, 1914. Vail, D. T.: Bacillus Tularense Infection of the Eye, Ophth. Rec. **23:** 487, 1914. Sattler, Robert: Bacillus Tularense Conjunctivitis, Arch. Ophth. **44:** 265, 1915. Wherry, W. B.: A New Bacterial Disease of Rodents Transmissible to Man, Pub. Health Rep. **29:** 3387-3390, 1914.

[3] Lake, G. C., and Francis, Edward: Six Cases of Tularaemia Occurring in Laboratory Workers, Pub. Health Rep. **37:** 392-413 (Feb. 22) 1922.

[4] Francis, Edward: Deer-Fly Fever: A Disease of Man of Hitherto Unknown Etiology, Pub. Health Rep. **34:** 2061-2062 (Sept. 12) 1919.

[5] McCoy, G. W.: A Plague-Like Disease of Rodents, Pub. Health Bull. 43, April, 1911. McCoy, G. W., and Chapin, C. W.: Bacterium Tularense the Cause of a Plague-Like Disease of Rodents, Pub. Health Bull. 53, January, 1912; Further Observations on a Plague-Like Disease of Rodents, with a Preliminary Note on the Causative Agent, Bacterium Tularense, J. Infect. Dis. **10:** 61-72, 1912.

[6] Francis, Edward, and Lake, G. C.: Experimental Transmission of Tularaemia in Rabbits by the Rabbit Louse, Haemodipsus Ventricosus, Pub. Health Rep. **36:** 1747-1751 (July 29) 1921.

[7] Francis, Edward, and Mayne, Bruce: Experimental Transmission of Tularaemia by Flies of the Species Chrysops Discalis, Pub. Health Rep. **36:** 1738-1740, 1921.

[8] Francis, Edward, and Lake, G. C.: Transmission of Tularaemia by the Bedbug Cimex Lectularius, Pub. Health Rep. **37:** 83-95, 1922.

The mouse louse *Polyplax serratus,* commonly found on white mice, is capable of transmitting the infection among white mice.[9] Transmission was effected in twelve out of seventeen attempts by the transfer of lice from the hair of mice dead of tularemia to the hair of healthy mice. When inoculated mice were dropped into a jar in contact with lousy, healthy mice, the infection killed off all the healthy mice in twenty-five days.

The squirrel flea *Ceratophyllus acutus* was successful in one experiment in transmitting the infection from ground squirrel to ground squirrel in California.[5]

The stable fly *Stomoxys calcitrans* transmitted the infection from guinea-pig to guinea-pig when the interval between biting the infected and healthy animals was less than one hour.[10]

The squirrel flea, the stable fly, the bedbug and the fly *Chrysops discalis* bite both rodents and man; the rabbit louse and the mouse louse probably do not bite man.

THE CAUSATIVE ORGANISM

The causative organism of tularemia is *Bacterium tularense,* discovered and named in 1912 by McCoy and Chapin [5] of the Public Health Service, and identified by these authors as the cause of a plaguelike disease of rodents. The latter disease had been discovered in the California ground squirrels in 1911 by McCoy,[5] and was fully described by him at that time. *Bacterium tularense* was first cultivated by McCoy and Chapin on a special egg yolk medium, and until the present time this organism has been grown only on a medium containing hen's egg yolk.

Recently I [11] have succeeded not only in cultivating the organism on egg-free mediums, but also in isolating the organism from original sources on (1) serum glucose agar; (2) glucose blood agar; (3) blood agar, and (4) each of the foregoing mediums plus a piece of fresh sterile rabbit spleen. By far the best of these egg-free mediums is glucose blood agar plus a piece of fresh sterile rabbit spleen.

The strains used for this cultural work were three human strains from Utah and one ground squirrel strain from California, all obtained in 1920.

SEVEN CASES OF TULAREMIA IN MILLARD COUNTY, UTAH

A brief summary is given herewith of seven cases of tularemia which I investigated clinically and culturally in Millard County, Utah, one in 1919 and six in 1920. The diagnosis in each case was confirmed by cultures of *Bacterium tularense* obtained from guinea-pigs which had been inoculated either with blood of the patient (two cases) or with pus from the patient's suppurating lymph glands (five cases). Five of the patients were adult male farmers; one was a farmer's wife who worked in the field, and one was a girl, aged 7 years, who was a village resident. The onsets of the seven cases were between June 16 and August 26. Each presented an insect bite and resultant suppurating lymph glands. The glandular involvement was unilateral in each case, and confined to the lymph glands which immediately drained the bitten area.

SEVEN CASES OF TULAREMIA IN MILLARD COUNTY, UTAH

Case	Site of Insect Bite	Site of Suppurating Lymph Glands
1. W. E. C.	In hair of left temple	In front of left ear; behind left ear; at angle of jaw
2. J. T. G.	In hair of right temple	Behind right ear; at angle of jaw
3. M. S., and 4. C. F.	Posterior surface of right ear	Right posterior auricular area
5. R. S., and 6. McK.	In hair of neck posteriorly: right side	Right posterior auricular area
7. J.	Posterior surface, lower third of right thigh	Right inguinal region

The site of the insect bite may not attract the patient's attention during the first three days as much as the adjacent lymph glands do. The latter give rise to pain and tenderness; and, while treating the glands, the physician or the patient's wife may be the first to discover the bite. In two of our seven cases the bite was in the hair of the temple; in two, it was in the short hair of the neck posteriorly; in two it was on the posterior surface of the ear, and in one it was on that bare space above the stocking so commonly seen when a small girl bends forward.

After the third day the site of the bite begins to present a black necrosing center which soon suppurates and sloughs out, leaving a punched-out ulcer about three-eighths inch (1 cm.) in diameter which is followed by a permanent scar. The adjacent lymph glands in all of our seven cases required incision for the liberation of pus. On a visit to the infected district, one may see the unmistakable scars of a previous year's attack marking both the site of the insect bite and the once suppurating glands.

No systematic records of symptoms, temperature, pulse, blood cell counts or urinalysis were obtained in our cases. The investigation dealt mainly with the etiology, the source of infection, and its manner of spread.

One patient was confined to bed throughout his illness, which terminated fatally on the twenty-sixth day with symptoms of pneumonia at the right apex. Two patients spent the first month in bed, the second month about the house, and the third month doing light work. The other four cases were less severe, each of the patients losing about a month's work.

The fever is characterized by daily remissions. The temperature curve seems to resemble that of a septic condition. In Case 5, which proved fatal, the average of nine morning temperatures was 99.3 and the average of ten afternoon temperatures was 100.4, the highest being 101.6.

Some patients do not call a physician, or they may visit his office in the subacute stage to have an abscess opened at the site of a tardily suppurating gland; patients in this condition may be walking around with a temperature of 102.

While the symptoms and signs of this disease are chiefly local, the systemic effect is pronounced, as evinced by the fever, the finding of the organism in the rculating blood (in two cases), the prostration during e acute stage, and the weakness during the period of ow convalescence. The majority of these patients do t recover their normal tone until about two or three onths after the date of onset of the disease.

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[9] Francis, Edward, and Lake, G. C.: Transmission of Tularaemia by the Mouse Louse Polyplax Serratus, Pub. Health Rep. **37**: 96-191, 1922.

[10] Wayson, N. E.: Plague and Plague-Like Disease: A Report on Their Transmission by Stomoxys Calcitrans and Musca Domestica, Pub. Health Rep. **29**: 3390-3393, 1914.

[11] Francis, Edward: Cultivation of Bacterium Tularense on Mediums New to This Organism, Pub. Health Rep. **37**: 102-115 (Jan. 20) 1922.

TWO FOCI OF INFECTION IN UTAH

So far as known, there have been but two foci f infection in Utah. The focus here reported is Millard County, 5 miles (8 kilometers) west of olden, 5 miles northwest of Fillmore, 25 miles (40 lometers) southeast of Delta, and 120 miles (193 lometers) south of Salt Lake City. The other focus s received clinical confirmation and is located near righam, a town 20 miles (32 kilometers) north of gden in Boxelder County. Both foci have probably isted for at least fifteen years.

THE FIRST REPORTED CASES OF TULAREMIA

What I believe to be the first clinical reference to man cases of this infection is contained in a paper ad before the Utah State Medical Association, Salt ake City, Oct. 3-4, 1910, by Dr. R. A. Pearse[12] of righam City, Utah. Dr. Pearse wrote, in 1910:

> I will give you the histories of a few cases of an infection obably caused by the bite of the large black and yellow rsefly, all cases of which, so far as I know, have been stributed over a definite area about Brigham City. This sease made its appearance in August, 1908, and August, 10. The point of infection in all of my cases has been on exposed portion of the body. All of the cases give the story of having been bitten by the large horsefly. Most of e patients say they had been bitten by the same kind of es many times before during that season. The incubation riod varies from two to five days. In all the cases there s been marked swelling of the glands and lymphatics about e area of the bite. In about one half of the cases some of e glands have gone on to suppuration. Most of the patients ve had severe chills, sometimes during the incubation period, hers having chilly sensations. The temperatures have run om 98 to 104 degrees. The duration of the disease has en from one to four weeks, the severity of the disease rying from slight malaise to death. All of the bites have ne on from a red infiltration like a mosquito bite to comete breaking down of the tissues and sloughing, forming punched-out circular ulcer about one-fourth inch (6 mm.) diameter and one-eighth inch (3 mm.) in depth.

Dr. Pearse refers briefly to six cases, three of which saw in August, 1908, and three in August, 1910. he site of the bites in these cases were: in front of e right ear; the back of the neck; the right cheek; e left wrist; the ankle, and the back of the right nd.

Dr. Pearse also states that he saw several cases longing to other physicians in his locality.

The first reference to a laboratory case of this infecon was probably made by McCoy and Chapin,[13] who scovered *B. tularense* in 1912 as the cause of a plague-ke disease of rodents in the California ground squirls. They reported at that time complement fixation d agglutination to *Bacterium tularense* antigens, not ly in the case of serums of naturally or artificially mune animals, but also in the case of two out f eleven human serums tested. The two positive uman serums were from Dr. C. W. Chapin and a boratory attendant, both of whom were extensively engaged in handling or dissecting infected rodents in the laboratory.

Dr. Chapin now states that, shortly previous to testing his own serum in 1912, he had had a febrile attack which kept him off duty for about three weeks, and which was unaccompanied by glandular enlargement or other local lesion. No absence from duty on the part of the laboratory attendant can now be recalled by Dr. Chapin.

In the light of present knowledge, it seems certain that what to McCoy and Chapin was a puzzling circumstance (the presence of antitularense amboceptors in the serums of two laboratory workers) was the proof of two unrecognized human cases of tularemia.

The first human cases to receive bacteriologic confirmation were two that occurred in 1913 and 1914 in the ophthalmic practices of Drs. Vail[2] and Sattler[2] at Cincinnati. *Bacterium tularense* was isolated in cultures by Drs. Wherry and Lamb[2] from guinea-pigs inoculated with conjunctival secretions and scrapings from conjunctival ulcers of these cases. The cases presented a unilateral severe ulcerative conjunctivitis and consequent glandular enlargements in the preauricular, cervical and submaxillary areas of the corresponding side; there was also marked constitutional disturbance, accompanied by pain, fever, marked prostration, sweats and chills, and ending in slow recovery after an illness of five to eight weeks' duration. How the ocular infection occurred is unknown. One patient was a meat cutter in a cheap restaurant; presumably he handled infected rabbits. The other was the wife of a farmer living in southern Indiana, on the M. farm. On a farm 4 miles (6.4 kilometers) from the M. farm, two rabbits were found dead and proved by Wherry[2] by guinea-pig inoculation and cultures to be infected with *Bacterium tularense;* the patient had prepared rabbit meat for the table.

SIX CASES OF TULAREMIA OCCURRING IN LABORATORY WORKERS

Six cases of tularemia occurring in laboratory workers have recently been reported by Lake and Francis.[3] All of the men, six in number, who have been intimately connected during the last two years with the laboratory investigations of tularemia which the Public Health Service has been conducting have contracted this disease. Such a record of morbidity among investigators of a disease is probably unique in the history of experimental medicine. Fortunately, there were no fatalities. Two of the men contracted the disease in the field laboratory in Utah, where they were compelled to work under primitive conditions; the other four contracted the infection in the Hygienic Laboratory at Washington, D. C. Two of the men were physicians, with years of experience in working with infectious diseases and materials; one was a highly trained scientist, and the other three investigators were experienced laboratory assistants.

In the laboratory cases, all the patients had a sudden onset of illness with high fever which, after remitting about the third day almost to normal, immediately became high again and then fell gradually to normal at the end of about three weeks. A lack of other significant constitutional disturbances or physical signs was noted. A slow convalescence extended over about two months, and recovery took place without complications.

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[12] Pearse, R. A.: Insect Bites, Northwest Med., March, 1911.

[13] McCoy, G. W., and Chapin, C. W.: Bacterium Tularense the use of a Plague-Like Disease of Rodents, Pub. Health Bull. 53, nuary, 1912, p. 21.

The six laboratory cases (except the second[14] attack in Case 1) furnished no local lesions indicating the portal of entry of the infection, and no involvement of superficial lymph glands. This is in contrast to the human cases of tularemia in which the infection was contracted in nature in Utah; in all the latter there was a pronounced site of infection (insect bite) and a consequent pronounced lymphadenitis of the adjacent glands.

Complement fixation and agglutination tests, using antigens composed of *Bacterium tularense,* were made on the serums of the six laboratory cases on several occasions, from January, 1921, to October, 1921, and all were positive. The shortest interval after the onset of the disease before the serum was tested was thirteen days; the longest interval from the date of illness was more than two years.

The diagnosis of tularemia in these six cases rests (1) on the occurrence of a febrile attack lasting about three weeks in persons engaged in handling or dissecting rodents infected with the Utah strains of *Bacterium tularense;* (2) positive serum reactions for complement fixation and agglutination properly controlled, and (3) the absence of febrile attacks and positive serum reactions in about 100 other persons in the laboratory coming in casual contact with the infected rodents.

UNRECOGNIZED CASES

Known foci of this infection in rodents have been reported from California, Utah and Indiana. The known insects capable of transmitting the infection in animals are two species of biting flies, one species of fleas, two species of lice, and the common bedbug. There are probably other foci and other transmitting insects in the United States.

Unrecognized cases of tularemia probably occur in the known foci of infection in the United States, some of which may have febrile attacks without local lesions, while some may have local lesions and a secondary regional lymphadenitis without very notable constitutional disturbance.

Routine serologic tests for agglutination especially and for complement fixation, using antigens composed of *Bacterium tularense,* would probably not only detect cases in known foci of infection but also bring to light unknown foci. Positive serologic reactions are known to persist for two years after such an attack. Such tests might throw light on the etiology of some fevers of undetermined origin.

SUSPECTED CASES

In diagnosing suspected cases presenting an evident local site of infection and a secondary lymphadenitis involving the glands that drain the local lesion, the best procedure is to inoculate guinea-pigs or rabbits subcutaneously on the abdomen with material from the local lesion or glands or both; such material should first be rubbed in a mortar, suspended in saline solution, and strained through coarse gauze. Within a week the animals should die presenting a gray, granular caseation of the enlarged lymph glands of the groin, and great numbers of small foci of necrosis studded over the enlarged spleen especially and over the liver.

Material from the dead animal's glands, spleen and liver, when rubbed on the shaven, abraded skin of another guinea-pig or rabbit, should likewise cause its death within a week with the same typical lesions of the lymph glands, spleen and liver, and thus the infection may be propagated for an indefinite number of passages through guinea-pigs or rabbits. Cultures of *Bacterium tularense* may be obtained by inoculation from the spleen or liver of these animals to special mediums. The bacteriologic diagnosis of tularemia should not be expected from cultural inoculations or smears made direct from the patient.

CONCLUSION

Our experience should serve as a warning against unwarranted indifference to an infection which has claimed all of those who have continuously worked with it in the laboratory.

The ready susceptibility of man to this infection in nature and in the laboratory, its wide prevalence in nature in a number of rodents, and the growing number of blood-sucking insects found capable of conveying the infection should combine to put the medical profession of the United States on the watch for cases of this new disease of man.

Note.—Seven articles on tularemia referred to in this paper are being combined and reprinted from *Public Health Reports* in pamphlet form by the Public Health Service as Hygienic Laboratory Bulletin 130.

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[14] A second attack has recently occurred in Case 1 of this series, two years and five months after the first attack, and at a time when the patient was making daily dissections of infected animals. The second attack was associated with evident cracks on the fingers, on one of which there was engrafted an inflammatory papule which was soon followed by enlarged, painful and tender lymph glands in the epitrochlear and axillary regions of the corresponding side, but without fever or other constitutional disturbance. Bacterium tularense was isolated from the papule by guinea-pig inoculation.

TULAREMIA Francis 1921 DEVELOPING IN A LABORATORY WORKER

REPORT OF CASE *

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During the routine examination of ground squirrels in California for plague, McCoy,[1] in 1911, encountered an infection which produced pathologic changes in guinea-pigs that were almost indistinguishable from those due to infection with *Bacillus pestis,* and it was due to the inability to cultivate any organisms on aga medium from animals dead of this disease that led t the suspicion that the infection was not that of plague

Observations made at this time showed that the disease was readily transmitted to guinea-pigs, mice, rabbits, monkeys and gophers. Rats were moderatel susceptible, and cats, dogs and pigeons appeared to b immune. The disease was transmitted artificially b subcutaneous, cutaneous (vaccination), nasal and intraperitoneal inoculation.

In 1912, McCoy and Chapin[2] succeeded in isolatin the specific organism of this disease, to which the nam *Bacterium tularense* was given. It is a very small, rod shaped organism, appears to be encapsulated, and i found in enormous numbers in the spleen of animal dead of this disease. The liver, bubo and heart's bloo sually contain the organisms, but in smaller numbers han the spleen. It is also found in the leukocytes as vell as lying free. The organism is gram-negative, ionmotile, and stains very well with anilin gentian iolet, carbolthionin and carbolfuchsin. Loeffler's nethylene blue gives unsatisfactory results.

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* The name tularemia is based on the specific name Bacteriu tularense, plus αἷμα, from the Greek and has reference to the presen of this bacterium in the blood, on the analogy of leukemia or bacteremi The names thus far used for this disease are strictly vernacular and not lend themselves to international usage as easily as a name in Lat form. Accordingly, the name tularemia is proposed, by Francis, as technical international name.

[1] McCoy, G. W.: A Plague-Like Disease of Rodents, Pub. Heal Bull. 43, April, 1911.

[2] McCoy, G. W., and Chapin, C. W.: Further Observations on Plague-Like Disease of Rodents with a Preliminary Note on the Caus tive Agent, Bacterium Tularense, J. Infect. Dis. **10**: 61-72 (Jan.) 191

The organism does not grow on the ordinary labora-ory mediums, but grows well on a special medium nade of coagulated egg yolk diluted with 20 per cent. f water or milk, heated in an Arnold sterilizer for ne-half hour at 70 C., with a second heating for one-alf hour at 72 C.

In addition to egg yolk medium, Francis[3] has ecently reported the cultivation of *Bacterium tularense* n serum glucose agar, blood agar, glucose blood agar, nd on each of the foregoing mediums plus a piece of terile fresh rabbit spleen. It grows slowly at room emperature, but at incubator temperature the growth s luxuriant under aerobic conditions. The first, sec-nd and third generation of cultures are uniformly athogenic to guinea-pigs, producing death in from even to eight days, and the pathologic lesions here re typical of plague and might be termed an acute nfection. Later generations appear to lose their viru-ence, and produce a subacute or chronic infection esulting in death. The lesions here are quite different rom those of the acute form, and bear a very strong esemblance to those of tuberculosis: the glands are onverted into large cheesy or purulent masses with odules in the spleen, liver and lungs, and the omen-um and the peritoneum are studded with small caseous oints or several large abscesses. Effusions into serous avities are frequently seen.

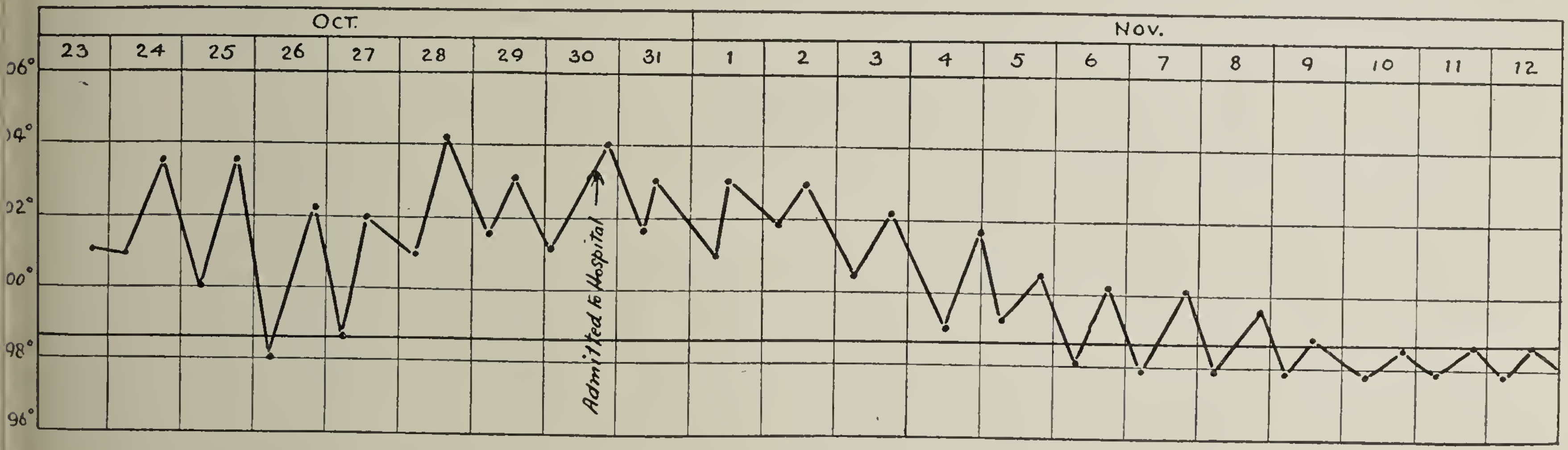
Serologically, the serum of naturally or artificially nmune animals agglutinates the organism as a general ule, while that of healthy susceptible animals does not, nd agglutinating serum generally binds complement in he presence of the specific antigen.[4]

The first case of infection with *Bacterium tularense* nown to occur in man and to receive bacteriologic onfirmation was reported by Wherry and Lamb.[5] hey succeeded in isolating the organism in a case in hich a severe conjunctivitis was the local lesion, ccompanied by rather severe constitutional symptoms. ail[6] described this case clinically, and it showed a evere conjunctivitis of the left eye with a pus infection of the tear sac and a temperature curve and general symptoms of a septic infection. The second case, in which a conjunctivitis was also the local lesion but was accompanied by more marked constitutional symptoms, is reported by Wherry[7] and Sattler.[8] The conjunctivitis was very severe, with marked edema of the eyelid and swelling of the face, the condition resembling erysipelas. There were recurring chills with delirium, excessive prostration and a septic temperature rising to 104 F. The condition lasted for five weeks, and then, after a slight operation on the ocular conjunctiva, a relapse occurred with a complete return of the clinical picture, which lasted for two weeks. Both of these patients appear to have handled and dissected wild rabbits.

No further cases are known to have occurred until 1919, when Francis,[9] while investigating the disease of man in Utah popularly called "deer-fly fever," isolated *Bacterium tularense* from a typical case of this disease which resulted fatally and showed changes at necropsy similar to those produced in animals by this organism. In 1920, Francis[10] again investigated the disease in Utah and studied six additional cases of typical "deer-fly fever," isolating the organism in each, and thus definitely established the identity of *Bacterium tularense* as the etiologic agent of this disease, to which he applied the name "tularaemia." He defined the disease as a "specific infectious disease due to *Bacterium tularense* and transmitted from rodents to man by the bite of an infected blood-sucking insect or by the handling and dissection of infected rodents by market men or laboratory workers."

These seven cases were initiated by the bite of an insect, probably the blood-sucking fly *Chrysops discalis*, which previously had bitten a jack rabbit infected with *Bacterium tularense*. Following the fly bite on some exposed surface of the body, the disease appears with pains, marked prostration, and fever of a septic type; and the lymph glands which drain the bitten area become inflamed and swollen, and usually suppurate. The fever lasts from three to six weeks, and convalescence is slow.

In the case about to be reported, the patient was engaged from Sept. 10, 1920, to Oct. 23, 1920 (the date of onset of illness), at the Hygienic Laboratory of the U. S. Public Health Service, in investigations of



Clinical temperature chart, only the highest and lowest daily temperatures being noted.

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3. Francis, Edward: Cultivation of Bacterium Tularense on Mediums ew to this Organism, Pub. Health Rep. **37**: 102-115 (Jan. 20) 1922.

4. McCoy, G. W., and Chapin, C. W.: Bacterium Tularense the ause of a Plague-Like Disease of Rodents, Pub. Health Bull. 53, anuary, 1912, pp. 17-23.

5. Wherry, W. B., and Lamb, B. H.: Infection of Man with Bac-rium Tularense, J. Infect. Dis. **15**: 333-340, 1914.

6. Vail, D. T.: A Case of "Squirrel Plague" Conjunctivitis in Man, phth. Rec. **23**: 487, 1914.

7. Wherry, W. B.: A New Bacterial Disease of Rodents Transmissible to Man, Pub. Health Rep. **29**: 3387-3390, 1914.

8. Sattler, Robert: Acute Bacterium Tularense Conjunctivitis, Arch. Ophth. **44**: 265, 1915.

9. Francis, Edward: Deer-Fly Fever, a Disease of Man of Hitherto Unknown Etiology, Pub. Health Rep. **34**: 2061-2062 (Sept. 12) 1919.

10. Francis, Edward: The Occurrence of Tularaemia in Nature as a Disease of Man, Pub. Health Rep. **36**: 1731-1738 (July 29) 1921.

several strains of *Bacterium tularense,* isolated by Surgeon Edward Francis of the United States Public Health Service, from human cases of tularemia in connection with his investigations of this disease in man in Utah. In carrying out the details of this work, the patient inoculated and performed necropsies on a large number of animals, and he was probably more or less exposed to infection through the skin or through the respiratory passages many times.

REPORT OF CASE

G. C. L., aged 37, admitted, Oct. 30, 1920, discharged, Nov. 29, 1920, stated that he received three injections of antityphoid vaccine in 1914. Seven days before admission to the hospital he suddenly developed a chill with temperature rising to 101 F. There was no previous malaise, and he was in perfect health until the chill occurred. There were no pains about the chest or the abdomen, and a blood culture taken on the fifth day was negative. During the first four days the temperature varied daily from normal in the forenoon to 102 or 103 in the afternoon. The temperature curve steadied after the fifth day of the disease at from 101.5 to 103, and continued at this level until the twelfth day, when normal was reached in the forenoon.

On his admission to the hospital, on the seventh day of the disease, he appeared in good general condition, temperature 103, pulse 100, and no pains about the chest or body. The heart sounds were normal in all areas, and the borders were within normal limits. The lungs were normal. The abdomen was slightly distended. Liver dulness was normal. The spleen was not palpable, and no rose spots were present. The reflexes were normal, and there was no enlargement of the lymphatic glands in any area. The systolic blood pressure was 120; diastolic, 60. Blood examination revealed: erythrocytes, 5,990,000; leukocytes, 8,300; hemoglobin, 85 per cent.; polymorphonuclears, 80 per cent; lymphocytes, 5 per cent.; large mononuclears and transitionals, 13 per cent.; mast cells, 2 per cent. The urine showed 1,500 c.c. in twenty-four hours, with a trace of albumin, sugar negative, specific gravity 1.018, no casts, and a few leukocytes. Blood culture was negative after forty-eight hours of incubation, and a Widal test was positive in dilutions to 256 for typhoid organisms, but negative in all dilutions for *B. paratyphosus* A and B.

The condition continued without any definite features until the eleventh day, when the patient had a slight epistaxis; on the thirteenth day two small red spots appeared over the right lumbar region which showed the characteristics of "rose spots." Blood cultures were repeated with negative results, and repeated cultures of stools were negative for typhoid bacillus.

The temperature reached normal permanently on the seventeenth day, and remained normal throughout an uneventful convalescence; but it was at least six months afterward before the patient had fully recovered and was able to resume his normal level of activity and energy.

The case was first considered as being one of atypical or mild typhoid fever, the course having been influenced by the antityphoid vaccination the patient had received in 1914; but the occurrence of a similar disease in five other laboratory workers who were engaged in working with tularemia in animals aroused the suspicion that the condition was tularemia. After the patient returned to the hygienic laboratory for duty, immunologic studies were made on his serum by P. A. Surg. G. C. Lake, by both the complement fixation and agglutination reactions, using saline suspensions of *Bacterium tularense* as antigens, and each time it gave a positive reaction in fairly high dilutions. These tests were carried out in connection with an immunologic study of serums obtained by Francis from his Utah human cases of typical tularemia from which he had isolated *Bacterium tularense,* and also the serums from the five other laboratory workers who had contracted a disease similar to that described in this paper, while working with the disease in animals.[11]

The evidence that this case was one of tularemia lies in (1) the history of close contact with infective and highly virulent material in animals experimentally inoculated with this disease; (2) the positive immunologic reactions obtained, and (3) the fact that all the men, six in number, who worked extensively with the Utah strains of *Bacterium tularense* isolated by Francis developed an illness similar to the one described and gave positive immunologic reactions against the specific organism which causes the disease.

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[11] A detailed account of these serologic tests and other evidence proving that these laboratory cases were tularemia have been given by Lake, G. C., and Francis, Edward: Six Cases of Tularaemia Developing in Laboratory Workers, Pub. Health Rep. **37**: 392-413 (Feb. 24) 1922. An article on tularemia by Francis appears in The Journal, this issue, p. 1015.

METHODS FOR THE ISOLATION OF FILTER-PASSING ANAEROBIC ORGANISMS

FROM HUMAN NASOPHARYNGEAL SECRETIONS *

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In November, 1918, during the pandemic of influenza, we isolated from the filtered nasopharyngeal secretions of influenza patients, and from the lung tissues of rabbits intratracheally inoculated with these secretions, a hitherto undescribed organism which we called *Bacterium pneumosintes.*[1] The same organism was recovered from similar sources during the recurrent wave of epidemic influenza in the spring of 1920. Within the last few weeks we have again isolated identical or similar organisms from the nasopharyngeal secretions of influenza patients. At present the identification of the recently recovered bacteria is not complete. But during our observation of the strains isolated in 1918-1919 and in 1920, we have noted certain unreported facts relating to the cultural and morphologic characters of *Bacterium pneumosintes* which have been useful in the isolation of the recently recovered strains. It is our purpose in this communication to report these facts briefly, in the hope that this information may be of use to others in the bacteriologic study of respiratory infections of obscure etiology.

Bacterium pneumosintes, as originally isolated, was a minute bacilloid body of regular form, with a length about two to three times its breadth, measuring from 0.15 to 0.3 micron in the long axis. It passed V and N Berkefeld filters, multiplied slowly only under strictly anaerobic conditions in a medium composed of human ascitic fluid and a fragment of fresh rabbit kidney, and withstood glycerolation for a period of months. The organism decolorized by Gram's method, and stained with the usual basic dyes, of which Loeffler's alkaline methylene blue was the most suitable. *Bacterium pneumosintes* was identified as the cause of the characteristic clinical and pathologic effects induced in rabbits injected intratracheally with the nasopharyngeal secretions of influenza patients.

During artificial cultivation over a period of from two to three years, our strains of *Bacterium pneumosintes* have maintained their strictly anaerobic character. Hence it is necessary to cultivate them in an anaerobic jar, or under a petrolatum seal in mediums containing active reducing substances, such as fresh animal or vegetable tissue, dextrose or peptone. The stock cultures are being maintained in the medium originally used, human ascitic fluid and fresh rabbit kidney, under a petrolatum seal. In this medium the strains have retained their original cultural and morphologic characters, and require transfer only at long intervals.

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] Olitsky, P. K., and Gates, F. L.: Studies of the Nasopharyngeal Secretions from Influenza Patients, J. A. M. A. **76**: 640 (March 5) 1921; J. Exper. Med. **33**: 125 (Feb.) 1921; ibid. **33**: 713 (June) 1921.

The ascitic fluid and rabbit kidney medium is an expensive and difficult medium to prepare, and we have tried various simpler methods of cultivation, some of which have been successful. The basis of the mediums which have proved to be suitable is a 1 per cent. dextrose, 1 per cent. peptone, 0.5 per cent. sodium chlorid, beef infusion broth, titrated to a hydrogen ion concentration of 7.4 on the Sörensen scale. This broth must be enriched with fresh rabbit blood, rabbit kidney tissue, fresh vegetable tissue [2] or by the growth of other organisms, as will be described. Solid and semisolid mediums may be made by the addition of agar in the proper proportion.

In fluid mediums in an anaerobic jar, or under a petrolatum seal, *Bacterium pneumosintes* grows in a diffuse cloud, too finely divided to give a typical bacterial shimmer. In a previously incubated medium, in which anaerobic conditions are already established, the cloud may become visible in from sixteen to twenty-four hours. The limit of growth is reached on the third to the seventh day at a hydrogen ion concentration of from 5.2 to 5.3. The cloud remains in suspension several days longer, and gradually falls to the bottom of the tube as a smooth, cream-colored sediment.

Surface colonies have been obtained on 5 per cent. rabbit blood agar plates incubated in an anaerobic jar. Dextrose is not necessary under these conditions. The jar must be capable of establishing strictly anaerobic conditions so that an indicator tube of methylene blue in dextrose broth is decolorized over night. We recommend the jar described by Brown,[3] which depends on the union of the oxygen with hydrogen under the catalytic influence of palladinized asbestos heated by a small resistance coil in a wire-screened chamber.

Grown under anaerobic conditions on the surface of blood agar plates, *Bacterium pneumosintes* forms extremely minute, round, convex, amorphous colonies with an entire edge and a colorless or grayish translucene. The medium is not precipitated or decolorized. The colonies are usually discrete, on account of their minute size, but may coalesce in the most crowded areas. The rather smeary growth forms a smooth suspension.

In stained smears, *Bacterium pneumosintes,* grown in enriched dextrose broth or on agar plates, develops as a minute, spindle-shaped bacillus, somewhat longer than the forms already described. The length may be increased to 1 micron, making the bacteria obviously bacillary. Short chains and diploforms are found. On old blood agar plates, involution forms have been observed. The longer, rod-shaped organisms have been fully identified with the original minute forms by serologic tests, and revert to the minute forms on transfer to the original ascitic fluid-rabbit kidney medium.

Rabbits immunized with *Bacterium pneumosintes* develop specific precipitins, agglutinins, bacteriotropins and complement-fixing bodies.

The growth of *Bacterium pneumosintes* in cultures contaminated with pneumococci, staphylococci, streptococci and hemophilic bacilli has already been reported.[1] Recently we have studied this symbiotic relationship, and find that other organisms may be used as a method of enrichment of the culture medium.

The most suitable organisms that we have tested for this purpose are *B. mesentericus, Bacillus coli, Bacillus typhosus,* and the pneumococcus Type III. In the case of *B. mesentericus,* the organism is grown for from eight to sixteen hours in aerated dextrose broth. A seal of petrolatum then checks growth promptly, since *B. mesentericus* is a strict aerobe, and an anaerobic condition is quickly established in the medium. If *Bacterium pneumosintes* is now inoculated, it grows rapidly and kills vegetative forms of *B. mesentericus* by acid production. Unless spores were introduced when the broth was seeded, a pure culture of *Bacterium pneumosintes* may often be obtained on the fourth or fifth day. It is necessary to prepare each lot of mediums with fresh transplants of *Bacillus mesentericus.* The few viable organisms, or spores, that may be carried over are insufficient to establish a growth in the second generation under a petrolatum seal.

Bacillus coli, Bacillus typhosus or pneumococcus Type III is grown in dextrose broth under a pretolatum seal until the bacterial cloud just becomes visible. Then the organisms are killed by exposure to 100 C. for from fifteen to thirty minutes. In the case of all these mediums, time is saved by a primary incubation to establish anaerobic conditions and insure sterility.

On the basis of these observations, we offer the following suggestions for the bacteriologic examination of nasopharyngeal secretions in cases of respiratory disease which apparently are not due to ordinary aerobic bacteria:

Nasopharyngeal washings should be obtained by a careful syringing of the nose and pharynx with from 20 to 40 c.c. of warm sterile salt solution, the washings being collected in a sterile kidney basin and transferred to a bottle with glass beads in which they may be thoroughly emulsified by shaking. After samples of the whole nasal washings have been spread on plates for aerobic cultivation, the remainder should be filtered through a tested candle, preferably a Berkefeld V. The filtered nasal washings should be inoculated in fairly large amounts, from 1 to 2 c.c., into human ascitic fluid-rabbit kidney medium and into incubated blood broth under a petrolatum seal. Broth enriched by the growth of other organisms, or with fresh vegetable tissue, may also be tried. Blood agar plates should be spread with the filtrate and incubated at least seven days in an anaerobic jar. The use of aerobic and anaerobic controls for each method of cultivation is essential.

At the same time, healthy rabbits should be intratracheally inoculated with 3 c.c. of the whole or filtered washings. Reference must be made to our former papers [1] on the subject for the details of this procedure and the effects which characterize the presence of an active, living agent in the inoculated material. In several instances we have obtained cultures after passage through the rabbits' lungs which were missed on cultivation of the original filtrate.

The use of blood plates in an anaerobic jar has proved especially useful for primary isolations from the filtered nasopharyngeal secretions and for the demonstration of organisms in a second generation after transfer from an original ascitic fluid-kidney medium. This medium seems to assure growth in the largest percentage of cases, but the ocular demonstration of the sparse primary growths is often exceedingly difficult and unconvincing because of the minute size of filter-passing organisms and the presence of protein precipitate from the medium. Colony formation on blood plates, on transfer from the tissue medium, has therefore been of great assistance to us.

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[2] Avery, O. T., and Morgan, H. J.: Proc. Soc. Exper. Biol. & Med. **19**: 113 (Dec.) 1921.

[3] Brown, J. H.: J. Exper. Med. **33**: 677 (June) 1921.

It seems not unlikely that *Bacterium pneumosintes* is only one of a number of related or unrelated, anaerobic, filter-passing organisms which may be obtained by appropriate methods from human sources. An endeavor should be made to obtain as many examples as possible of this new group or class of micro-organisms. Their classification and etiologic significance may await subsequent investigation.

THE KOTTMANN REACTION FOR THYROID ACTIVITY *

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Medical problems involved in thyroid dysfunction have come into particular prominence during the last few years. There are several causes of this interest, among which may be mentioned the successful isolation of at least one of the active constituents of the thyroid gland, the development of clinical methods for the study of basal metabolism, as well as the more frequent use of therapeutic measures previously seldom employed (irradiation, etc.). In view of its clinical importance it may be of interest to direct attention to a unique serum test for thyroid activity devised by Kottmann.[1] Relatively simple in technic, the test appears to us to possess considerable clinical usefulness, quite apart from its theoretical possibilities, a subject into which we wish to enter more fully in subsequent papers.

The theoretical premises of the reaction are the following: Kottmann assumed, on the basis of previous work with serum in pregnancy,[2] that certain physicochemical differences must exist in the serum in cases of thyroid dysfunction, and that the chief difference would exist in the state of dispersion of the serum colloids. Because of the peculiar relation of iodin to the glandular metabolism, he began his experiments with colloidal iodin preparations, using silver iodid for this purpose because of its well known photosensitivity. In the test as developed by him, certain phenomena commonly observed in photography play a rôle. Thus, when silver nitrate is added to potassium iodid, silver iodid is formed. In the presence of a protective colloid, the growth of the particles is retarded, depending on the protective property of the colloid used. In the photographic plate, a gelatin preparation is used for this purpose, and the prepared film (silver iodid or bromid dispersed in gelatin) is permitted to ripen. During this process of ripening, the colloidal particles of the silver salt gradually become larger and as they do so they become more photosensitive than when in the original highly dispersed state. If we substitute serum for the gelatin, a similar reaction might be anticipated, the particles of silver iodin formed becoming larger or smaller according to the protective property of the serum. The greater the photosensitivity of the silver iodid, the poorer the protective property of the serum used, and presumably, therefore, the coarser the colloidal dispersion of the serum itself. The less photosensitive the silver iodid, the greater the protective power of the serum and presumably the greater the state of dispersion of the serum colloids themselves.

TECHNIC

To 1 c.c. of clear serum are added 0.25 c.c. of a 0.5 per cent. solution of potassium iodid and 0.3 c.c. of a 0.5 per cent. solution of silver nitrate. The resulting suspension of silver iodid in the serum is next exposed for five minutes at a distance of 25 cm. to a 500 watt Mazda lamp (or other light of equal intensity). Then 0.5 c.c. of a 0.25 per cent. solution of hydroquinon is added and the color changes observed at five minute intervals.

In carrying out the test, a dark room is theoretically desirable; diffused daylight does not materially interfere with accurate results, according to our experience. The serum used should be freshly drawn, preferably in the morning before food has been taken, and should be free from hemoglobin and quite clear. The test tubes used should be carefully cleaned and of uniform size. We have found that a tube 1.5 by 8 cm. is quite satisfactory in that it permits thorough mixing of the reagents by gently agitating and rotating the tube. The reagents should be freshly prepared and accurately measured. A slight excess of iodid retards the reaction, while an excess of the silver nitrate accelerates the appearance of the color on development.

The color reaction that develops after the addition of hydroquinon varies with different serums. With serum from hyperthyroid cases, Kottmann found that the original yellowish color of the serum mixture persisted for a considerable time; in normal serums a brown color (silver iodid reduced to free silver) makes its appearance quite promptly; in serums from hypothyroid cases Kottmann found the development of the brown color reaction accelerated. The serum from individuals who have had bromids retards the reaction, and such medication must be excluded if the test is to be carried out.

CLINICAL RESULTS

When using this reaction, Kottmann found that the serum retarded the reaction in all twelve cases of hyperthyroidism; in fourteen cases of colloid goiter the reaction was accelerated in twelve, normal in one and slightly retarded in the other. A number of clinical cases diagnosed as "nervous" without clear evidence of hyperthyroidism were also examined, and in several of them a retarded serum reaction was observed. His control cases included a large number of serums obtained from pregnant women. In these the reaction was in the largest number within normal limits; only a few serums retarded the reaction slightly. Kottmann assumes that the alteration of the reaction in these cases is evidence of the alteration of the activity of the thyroid gland which has been observed by numerous clinicians.

We have studied the test in a relatively large series of cases of thyroid dysfunction as well as in control serums obtained from normal persons and patients ill from a variety of acute and chronic diseases. The material was obtained from the Lakeside Hospital in Cleveland, the Augustana Hospital, the Cook County Hospital, the Prenatal Clinics of the Michael Reese and St. Luke's Hospitals in Chicago, as well as from a number of private patients.

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* From the Department of Pathology and the Laboratory of Physiological Chemistry, University of Illinois College of Medicine, and the Laboratory of the Augustana Hospital.

[1] Kottmann, K.: Kolloidchemische Untersuchungen über Schilddrüsenprobleme, Schweiz. med. Wchnschr. **1**: 644, 1920.

[2] Kottmann, K.: Cor.-Bl. f. Schweiz. Aerzte., 1917, Nos. 20, 29, 31.

The results are summarized in the accompanying table. Group 1 consists of the cases of clinically positive hyperthyroidism, simple goiters (colloid, and adenomas without hyperthyroidism) and normal controls. Of the seventy evident cases of hyperthyroidism, sixty-five delayed the Kottmann reaction in a typical manner. In two cases the reaction was only incompletely retarded; in two the serum reaction was normal, and in one accelerated. In the latter three cases the basal metabolic rate was increased (in one case as much as plus 65 per cent.) and there was no doubt of the activity of the pathologic process. In the colloid goiters and the simple adenomas, the reaction was in all cases within normal limits, and in a certain number of the cases the reaction was accelerated. The normal controls (139) were with three exceptions normal in reaction. In three cases the reaction was slightly retarded.

KOTTMANN REACTION IN FOUR HUNDRED CASES

	Number of Serums Examined	Accelerated	Normal	Slightly Retarded	Markedly Retarded
Group 1—					
Hyperthyroidism	70	1	2	2	65
Simple goiters	49	——49——		..	..
Normal persons	139	..	136	3	..
Group 2—					
Bromids	11	..	..	..	11
Group 3—					
Lobar pneumonia	6	2	3	1	..
Erysipelas	1	1	..	..	..
Scarlet fever	1	1	..	..	..
Tonsillitis	2	..	2	..	..
Endocarditis	1	..	1	..	..
Lung abscess	1	..	1	..	..
Osteomyelitis	1	..	1	..	..
Periostitis	1	..	1	..	..
Bronchitis	1	..	1	..	..
Articular rheumatism	3	..	3	..	..
Choroiditis	1	..	1	..	..
Cystitis	1	..	1	..	..
Influenza	1	..	1	..	..
Group 4—					
Carcinoma	7	..	5	2	..
Diabetes	2	..	1	1	..
Pernicious anemia	5	..	5	..	..
Hodgkin's disease	1	..	1	..	..
Group 5—					
Tuberculosis	3	..	2	1	..
Syphilis	10	..	10	..	..
Group 6—					
Gynecologic lacerated cervix; pyosalpinx fibroids, etc.	14	..	14	..	..
Normal pregnancy	13	..	12	1	..
Toxemia of pregnancy	1	..	1	..	..
Placental blood	20	..	19	1	..
Group 7—					
Organic heart disease	8	..	8	..	..
Psychoses	8	..	8	..	..
Paresis	3	..	2	1	(bromids ?)
Tabes	1	..	..	1	(bromids ?)
Poisoning: iodin; plumbism	2	..	2	..	..
Fright (minor gunshot wound)	2	..	..	..	2
Radial paralysis	1	..	1	..	..
Prostatic hypertrophy	1	..	1	..	..
Cholecystitis	3	..	2	1	..
Chronic appendicitis	1	..	1	..	..
Gastric ulcer	3	..	3	..	..
Fracture femur	1	..	1	..	..

Group 2 consists of ten patients with a number of diseases (generally psychoses) who were on bromid medication. In all cases the serum retarded the reaction. This corresponds to the effect of the bromids in the technic of photographic development.

Group 3 consists largely of cases of infectious disease. Among these the reaction was only in one instance slightly retarded. In the more severe infections there was evidence of an acceleration of the reaction.

In Group 4, which included a number of serums from cachectic patients, several serums inhibited the reaction to some extent.

The serums from patients with tuberculosis and syphilis (Group 5) were virtually within normal limits, as were also the serums obtained in a series of cases of pregnancy, placental blood and gynecologic cases (Group 6).

Group 7, miscellaneous cases, included one case of paresis and one of tabes in which the reaction was inhibited slightly (the therapeutic use of bromids or iodids could not be ruled out in these serums), and two cases of great excitement and fright associated with minor gunshot wounds. In both cases the serum retarded the reaction markedly.

COMMENT

The Kottmann reaction seems to offer an index of thyroid activity, and as such should be of value in clinical work. The test is simple, is rapidly carried out, and if we may judge from the results in the cases here presented, few other clinical conditions yield serums in which the reaction is delayed to a degree at all comparable with the reaction obtained with exophthalmic serums. Some retardation is noted in other conditions, such as cachexia, and occasionally in pregnancy and in severe excitement, but these conditions should in no way interfere with the clinical interpretation of the test. In only a few cases of clinically active hyperthyroidism was the typical reaction absent (three out of seventy).

To be of greatest value, a test of this kind should be studied in a large series of borderline cases, including early tuberculosis and neurasthenia, because they are usually the ones in which a test of this nature is really needed. Unfortunately, we have no large group of such conditions at our command, but we are of the impression from observations so far made that in just this group the test will be of great value.

Kottmann calls attention to the fact that the administration of bromids to the patient, as well as the addition of bromid directly to the serum, will inhibit the reaction; our observations confirm his experience, and we have also noted that the administration of iodids will tend to retard the reaction to some degree, not however, to the extent of the bromids. This must be kept in mind when the test is performed.

CONCLUSIONS

In a study of 400 serums obtained from patients with thyroid dysfunction, as well as those ill with other diseases, and a large group of normal persons, the photochemical serum reaction devised by Kottmann yielded a close index of the thyroid activity. The test is simple and should be of material aid in the clinical as well as the experimental investigation of thyroid problems.

Vasomotor Activity in Brain and Epilepsy.—The evidence in favor of vasomotor activity in the brain is abundant, and it seems incredible that pathologic variations in the cerebral circulation should not be associated with definite clinic manifestations. The characteristic rapidity and suddenness of vascular changes, and their characteristic tendency to recurrence, would allow of recurrent phases of disordered cerebral function, and on this hypothesis many of the phenomena of epilepsy can be explained fully.—Percy Sargent, *Brain* **44**:318, 1921.

HYDROGEN ION CONCENTRATION STUDIES

ON DISTILLED WATER, PHYSIOLOGIC SODIUM CHLORID, GLUCOSE AND OTHER SOLUTIONS USED FOR INTRAVENOUS MEDICATION

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The hydrogen ion concentration of drugs and chemicals used for therapeutic or investigative purposes has never been given any extended consideration. It has been repeatedly observed by clinicians that the intravenous injection of glucose, physiologic sodium chlorid, phenolsulphonephthalein and other solutions is followed by reactions of the following character with varying frequency: The patient, in from a few minutes to a half hour, is seized with a chill accompanied with a rise in temperature, followed by prostration and great weakness. The phenomenon tends to disappear within twenty-four hours, although there is reason to believe that death has occasionally resulted. A similar phenomenon is noted following transfusions by the citrate method and after arsphenamin injections.

We believe there is a relationship between these reactions and the hydrogen ion concentration of the injected fluids. We advance the hypothesis that when fluids of a much higher or lower concentration than that of the blood are introduced into the circulation at a rate or in an amount in excess of the capacity of the blood to buffer or neutralize them, reactions will occur. We base this theory on clinical observations and the analyses of fluids, the intravenous use of which was followed by reactions.

In this study we shall show that some of the fluids in common use have hydrogen ion concentrations much beyond the limits of safety. The suggestion of this problem developed as the result of many conferences which we had with Drs. S. F. Acree, E. A. Slagle and R. R. Mellon of the pathologic department of the Highland Hospital of Rochester, who were engaged in an investigation of the hydrogen ion concentration of bacteriologic mediums and the use of buffers therein.[1] We were greatly indebted to them for advice and material, particularly to Dr. Slagle, who assisted us in the early stages of the study. The apparatus used was the Acree model. The buffer tablets referred to were prepared by Dr. Slagle from monopotassium and dipotassium phosphate salts in such proportions and amounts that when one tablet weighing approximately 0.1 gm. is dissolved in 20 c.c. of freshly distilled water, it will have a p_H of the desired value. When such a tablet is added to from 20 to 100 c.c. of a solution of higher or lower p_H, it will serve to adjust it to a level approximating the p_H of the buffer used. This will be evident from an examination of the experiments.

Before considering the experimental aspects of the investigation, it will be helpful to those who have not a working familiarity with the subject to know that the hydrogen ion concentration of pure distilled water, expressed for purposes of brevity as p_H, is 7.0; normal acid p_H is 2.0; normal alkaki p_H is 14.0. Whole human blood has a p_H range of from 7.3 to 7.5. According to Van Slyke, it is fairly constant at 7.4. Hydrogen ion concentrations of blood or tissues above or below these figures are not compatible with life. A patient becomes comatose before a p_H of 7.0 is reached, or convulsions ensue before a p_H of 7.5 develops.

When a solution of higher or lower hydrogen ion concentration than that of the blood is introduced into the circulation, the normal buffer substances of the blood, namely, proteins, plasma bicarbonates and phosphates, serve to correct the faulty reaction and thus protect the body against injury. It is well known that many tissues of the body are extremely sensitive to changes in chemical reaction, particularly nerve and brain structures. When a solution with an abnormal hydrogen ion concentration is injected intravenously in greater amount than the blood can buffer, or at a rate in excess of the capacity of the blood to neutralize it, then the above mentioned reactions or death may follow. In like manner, when a solution with an abnormal p_H is injected subcutaneously, it must necessarily produce a localized temporary tissue acidosis or alkalosis. We believe that this is the explanation of the local reactions evidenced as “sore arms” commonly seen in hospital wards following hypodermic medication.

The first investigations dealt with solutions as prepared by the pharmacal and surgical departments of the hospital for clinical use. These were checked against similar solutions prepared in the laboratories. We then discovered that the water used as a solvent is a very variable factor of the utmost importance. Accordingly, we made a special study of this problem. In this first paper we shall present our data on the hydrogen ion concentration of water, glucose and physiologic sodium chlorid solutions. In a second study we shall consider sodium citrate, serums and antitoxins, and various preparations put up in tablet and ampule form for intravenous medication.

STUDIES ON WATER.

Experiment 1.—*Studies on tap water.* As drawn from the faucet on different days, it has a p_H range of from 8.27 to 8.77. Fresh unheated tap water, p_H 8.27; boiled five minutes, at atmospheric pressure, p_H 8.30; boiled ten minutes, at atmospheric pressure, p_H 8.62; autoclaved twenty minutes, 15 pounds pressure, p_H 7.74.

Comment.—The tap water of Rochester is mildly alkaline, owing to dissolved basic salts. Repeated tests show that boiling lowers and autoclaving raises the p_H because of changes in the amount of dissolved gases and salts induced by the heat and pressure.

Experiment 2.—*Studies on distilled water.* As stated before, absolutely pure, fresh distilled water has a p_H of 7.0. As will be seen from the following tests, it is virtually impossible to prepare and keep by the means in common use in clinical laboratories distilled water of this hydrogen ion concentration. A Stokes still is used for our routine service. Analyses were made of the stock distilled water used in the hospital in the preparation of solutions. One specimen had a p_H of 6.89; two other samples were above p_H 6.0; the other seven had a p_H range of from 5.05 to 5.84.

Experiment 3.—*The effect of single and double distillation, using an all-glass still of simple construction.* Tap water, p_H 8.27; first distillate (first 10 c.c.), p_H 7.30; first distillate (after 200 c.c. had been distilled), p_H 6.90; second distillate (first 10 c.c.), p_H 6.99; second distillate (after 200 c.c. had been distilled), p_H 6.80.

Comment.—Distilled water becomes acid immediately after distillation, owing chiefly to the absorption of carbonic acid gas from the atmosphere.

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[1] Mellon, R. R.; Acree, S. F.; Avery, Pauline M., and Slagle, E. A.: The Ionization Constants of Glycerophosphoric Acid and Their Use as Buffers, Especially in Culture Mediums, J. Infect. Dis. **29**: 1-6 (July) 1921. Acree, S. F.; Mellon, R. R.; Avery, Pauline M., and Slagle, E. A.: A Stable Single Buffer Solution p_H 1 to p_H 12, ibid. **29**: 7-10 (July) 1921.

EXPERIMENT 4.—Double distilled water, glass stoppered flask sealed with paraffin, p_H 6.80; after twenty-four hours, p_H 6.83; after thirty-one hours, p_H 6.25; after forty-eight hours, p_H 5.23.

EXPERIMENT 5.—Double distilled water, flask sealed with paraffined cotton plug, p_H 6.80; after twenty hours, p_H 6.90; after twenty-seven hours, p_H 6.50; after forty-eight hours, p_H 5.32.

EXPERIMENT 6.—Double distilled water, flask stoppered with clean cork, p_H 6.80; after twenty-four hours, p_H 7.05; after thirty-one hours, p_H 6.14; after forty-eight hours, p_H 5.60.

Comment.—These tests were made to duplicate common methods of storing distilled water for clinical use. The increased acidity with age, even in well stoppered containers, is noted.

The following tests were made to determine the influence of proximity to bottles containing fuming chemicals:

EXPERIMENT 7.—Double distilled water, flask stoppered with cotton plug and kept away from chemical fumes, p_H 6.8; after twenty-four hours, p_H 7.07; after thirty-one hours, p_H 6.41; after forty-eight hours, p_H 5.75.

EXPERIMENT 8.—Double distilled water, flask stoppered with clean cork and kept near bottle of concentrated hydrochloric acid, p_H 6.80; after twenty-two hours, p_H 6.98; after twenty-nine hours, p_H 6.19; after forty-six hours, p_H 6.04.

EXPERIMENT 9.—Double distilled water, flask stoppered with clean cork and kept near bottle of concentrated ammonium hydrate, p_H 6.80; after twenty-two hours, p_H 6.60; after twenty-nine hours, p_H 7.02; after forty-six hours, p_H 6.12.

This experiment was repeated, using flask stoppered with cotton plug. The results were virtually identical.

Comment.—It will be observed that distilled water subjected to different storage conditions becomes acid to about the same degree in a given time. Proximity to bottles containing fuming acid or alkali had no appreciable influence. As stated before, the acidity of distilled water is due to the absorption of carbonic acid from the atmosphere, which has a high degree of penetrability. We feel, therefore, that the practical preparation of distilled water at the theoretical hydrogen ion concentration of 7.0 is difficult, and to store or keep it for any length of time by ordinary means is quite impossible. Old stock distilled water is quite likely to be very acid. Its use for the preparation of medicines or chemicals for intravenous injection is very questionable, if not dangerous.

STUDIES ON GLUCOSE

Glucose solutions are now commonly used in hospitals in the treatment of pneumonia, in the shock and prostration following serious surgical operations, in obstetric practice and so on. Clinicians are familiar with the reactions which frequently follow its use. The method of preparation formerly employed in this hospital was to dissolve 100 gm. of glucose in 1,000 c.c of stock distilled water, and autoclave at 15 pounds pressure for 20 minutes. A three or four days' supply was usually prepared. A number of samples of this stock glucose solution were tested on different occasions and found to have a p_H of less than 5. The following tests were made to determine the cause of this acidity:

EXPERIMENT 10.—Glucose solution, 10 per cent. stock distilled water, fresh, unheated, p_H 6.20; after boiling ten minutes, p_H 5.47; after boiling twenty minutes, p_H 5.17; after boiling thirty minutes, p_H 5.00.

Comment.—Repeated tests have shown that boiling definitely lowers the p_H of glucose solutions.

EXPERIMENT 11.—Glucose solution, 10 per cent. stock distilled water, fresh, unheated, p_H 6.20; after standing at room temperature in laboratory twenty-four hours, p_H 5.15; after standing at room temperature in laboratory forty-eight hours, p_H 4.15.

Comment.—Repeated tests show that glucose, when unheated, becomes rapidly acid with age so that after twenty-four hours it is quite unsafe for therapeutic purposes. The glucose used in the hospital and in the preceding tests was manufactured by the American Corn Refining Company. A comparative study of other well known brands was made, as is shown in Table 1.

EXPERIMENT 12.—Glucose solutions, 10 per cent (prepared with stock distilled water, p_H 5.15). The results are given in Table 1.

Comment.—Two other brands of glucose of unknown manufacture were tested with similar results. It is evident from the foregoing that acid production occurs in autoclaved solutions from several well known brands in common use in American hospitals and laboratories. In practice, distilled water is used in preference to tap water because a clearer solution results. The autoclaved product, even with alkaline tap water, is far too acid for safe clinical use. We have attempted to learn the nature of the acid present with the following results: No traces of sulphuric, nitric, acetic or phosphoric acid were dicovered. A well marked reaction for hydrochloric acid was obtained. The hydrolysis of starch to glucose by means of hydrochloric acid is a standard method of glucose manufacture.

TABLE 1.—FINDINGS IN EXPERIMENT 12

Manufacturer	Fresh Unheated Solution p_H	After Autoclaving p_H	24 Hours After Autoclaving p_H
Merck, C. P.	6.35	4.59	4.56
Digestive Ferments Co. (Bacto-Dextrose)	6.65	4.53	4.53
Amer. Corn Ref. Co.	6.59	4.51	4.50
Experiment repeated, using tap water p_H 8.27 as solvent.			
Merck	8.58	4.90	4.82
Digestive Ferments Co. (Bacto-Dextrose)	8.24	5.08	5.01
Amer. Corn Ref. Co.	8.20	5.84	5.35
Experiment repeated using tap water with barium hydrate in suspension distilled through glass, p_H of distilled water 7.48.			
Merck	7.50	4.65	4.60
Digestive Ferments Co. (Bacto-Dextrose)	7.42	5.15	5.07
Amer. Corn Ref. Co.	7.12	4.73	4.59

The attempt was then made to prepare sterile glucose solutions which would have a hydrogen ion concentration approximating that of the body (p_H 7.4). Solutions with a p_H below 6.5 are likely to produce reactions, and those below 5.5 must be regarded as quite toxic when given at a rate or in an amount in excess of the capacity of the blood to buffer.

EXPERIMENT 13.—*To show the effect of buffers in correcting the acidity which is produced in autoclaved glucose solutions.* Buffer tablets composed of monopotassium and dipotassium phosphate salts, each weighing approximately 0.1 gm. of the indicated p_H, were used for this purpose.

Glucose solution, stock 10 per cent., autoclaved, p_H 4.82; 20 c.c. buffered with one p_H 6.96 tablet, p_H 6.35; 20 c.c. buffered with two p_H 6.96 tablets, p_H 6.50; 20 c.c. buffered with one p_H 7.94 tablet, p_H 7.16; 20 c.c. buffered with two p_H 7.94 tablets, p_H 7.00.

Comment.—The acidity of glucose solutions may be corrected by the addition of sterile nontoxic buffers. The use of buffer tablets makes it a very simple procedure. One must be sure, however, that a solution is sufficiently buffered to counteract any additional acid formation which may take place before the solution is used. This is illustrated by the following experiments:

EXPERIMENT 14.—*To show the quantitative effect of buffers in the correction of acid production in glucose solutions.*

TABLE 2.—FINDINGS IN EXPERIMENT 14

Amount of Solution C.c.	Number of Tablets Added p_H 7.94	p_H of Solution After Adding Buffer p_H	20 Hours Later p_H	44 Hours Later p_H
100	1	7.02	6.79	6.51
100	2	7.12	7.06	6.96
100	3	7.23	7.20	7.16
100	4	7.43	7.40	7.35

Stock 10 per cent. glucose solution, p_H 4.53, autoclaved, 24 hours old at beginning of tests. Buffer tablets, p_H 7.94 (Table 2).

Comment.—We have had no reactions following intravenous use of glucose solutions buffered properly.

In preparing a glucose solution for use it should be thoroughly dissolved, filtered and autoclaved. The sterile buffer tablets should then be added. If added before autoclaving, they are likely to be precipitated out of solution with the result that the solution again becomes acid.

EXPERIMENT 15.—*To show the effect of autoclaving on buffered glucose solutions.*

(*a*) Control test solution not buffered: Glucose solution, 10 per cent., freshly prepared, p_H 7.01; after autoclaving, p_H 4.63; twenty-one hours after autoclaving, p_H 4.59.

(*b*) Glucose solution, stock, p_H 7.01; 50 c.c. buffered with one p_H 7.94 tablet, p_H 7.04; after autoclaving, p_H 5.45; twenty-one hour after outoclaving, p_H 5.39.

Boiling at atmospheric pressure also leads to acid development in buffered glucose solutions, as shown by the following tests:

EXPERIMENT 16.—Glucose solution, stock 10 per cent., autoclaved, p_H 4.97; 20 c.c. buffered with one p_H 7.94 tablet, p_H 7.35; boiled for one minute, p_H 7.25; boiled for five minutes, p_H 7.00; boiled for ten minutes, p_H 6.66.

HYDROGEN ION CONCENTRATION STUDIES ON PHYSIOLOGIC SODIUM CHLORID SOLUTIONS

EXPERIMENT 17.—Physiologic sodium chlorid solution prepared from compressed tablets (Parke, Davis & Co.), one tablet, 16.4 grains, dissolved in 4 fluidounces of stock distilled water and autoclaved for twenty minutes at 15 pounds pressure, as used in surgery.

Physiologic sodium chlorid solution, as prepared above, fresh, p_H 6.4; after twenty-five days, p_H 6.4; 20 c.c. buffered with one p_H 7.4 tablet, p_H 7.3.

EXPERIMENT 18.—Physiologic sodium chlorid solution, prepared in laboratory, salt of unknown manufacture. Dissolved in tap water, not sterilized, p_H 8.27; dissolved in stock distilled water, not sterilized, p_H 6.6.

EXPERIMENT 19.—(*a*) Physiologic sodium chlorid solution, not sterilized; prepared by serologic laboratory for Wassermann technic, 8.5 gm. of sodium chlorid (Baker and Adamson C. P.) dissolved in 1,000 c.c. of stock distilled water, p_H 4.96.

(*b*) This test was repeated, using stock distilled water and autoclaved, p_H 4.95.

(*c*) A third physiologic sodium chlorid solution was prepared, using sodium chlorid obtained from the Will Corporation, manufacturer unknown, p_H 5.5.

(*d*) A fourth physiologic sodium chlorid solution was prepared from sodium chlorid (Baker and Adamson C. P.) and stock distilled water, p_H 4.95.

(*e*) A fifth physiologic sodium chlorid solution put up in ampules, prepared by the Intra Products Company, p_H 4.95.

EXPERIMENT 20.—Three different makes of sodium chlorid were dissolved in the same lot of stock distilled water on the same day and the solutions sterilized.

Physiologic sodium chlorid (Baker C. P.), p_H 7.9; (Bausch and Lomb C. P.), p_H 5.64; (Baker and Adamson C. P.) p_H 6.4.

Comment.—It is evident from the foregoing tests that when the common method of making physiologic sodium chlorid solution is employed, namely, dissolving so-called chemically pure sodium chlorid in stock distilled water, a highly acid solution may result which might prove harmful in clinical use. This acidity may be due to the salt or to the distilled water or to both. It is obvious that a salt solution which is physiologically normal for the body must not only be correct in salt content but also in hydrogen ion concentration. In making this, tap water is much to be preferred to distilled water. This acid saline was also found to interfere in colloidal gold tests. Physiologic sodium chlorid solution may easily be rendered safe for therapeusis by proper buffering.

CONCLUSIONS

1. The hydrogen ion method of determining the reactions of fluids used for therapeusis or clinical investigation is of great importance.

2. When fluids that have a higher or lower hydrogen ion concentration than that of the blood are injected into the circulation at a rate or in an amount that the blood cannot neutralize or buffer, reactions characterized by chills and prostration follow.

3. By the hydrogen ion method we have determined that distilled water, if not carefully prepared or when stored as a stock solution, becomes highly acid so that when used as a solvent it may produce a solution with a much higher hydrogen ion concentration than that of the body.

4. Glucose solutions become highly acid when boiled, autoclaved or when permitted to stand for a few hours. Stock glucose solutions as used clinically are highly acid.

5. Physiologic sodium chlorid solution, when prepared with stock distilled water or impure salt, may be very acid. A normal or physiologic salt solution should not only contain that amount of salt which will make it isotonic with the blood, but it should also have the same hydrogen ion concentration.

6. These solutions may be easily corrected as to hydrogen ion concentration by the addition of buffer salts. The buffering of glucose and physiologic sodium chlorid solutions in our experience has served to prevent reactions.

7. We have studied and will report in a succeeding paper the hydrogen ion concentration of sodium citrate solutions, serums, vaccines and antitoxins, arsphenamin preparations, neo-arsphenamin and hypodermic medication in both tablet and ampule form.

THE PRACTICAL APPLICATION OF "BUFFERS"

IN THE REGULATION OF THE HYDROGEN ION CONCENTRATION OF INTRAVENOUS SOLUTIONS *

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The paper of Williams and Swett [1] which appears elsewhere in this issue, directs attention to the variations existing in the hydrogen ion concentration, p_H, of solutions which modern internal medicine has found necessary to introduce directly into the tissues. The well known severe reactions often attending such medications, together with their etiologic obscurity in many cases, has led us to consider seriously the p_H factor, which heretofore has been the subject of little if any inquiry in this connection. It is our purpose only to discuss, in its fundamental and practical aspects, how this factor can be controlled by the use of buffers, leaving to the writers mentioned above the results of the clinical application of the procedures.

It is our intention, therefore, not to make positive statements regarding the efficacy of these procedures, but to call attention to the reasonableness of imitating as closely as possible the p_H of the blood, when it is desired to inject foreign materials into this important tissue. Particularly is this impressive when one realizes that the blood under normal conditions maintains a quite constant reaction, and this by means of the same sort of "buffers" that, in imitation, we have employed with these solutions.

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[1] Williams, J. R., and Swett, Madeleine: Hydrogen Ion Concentration Studies on Distilled Water, Physiologic Sodium Chlorid, Glucose and Other Solutions Used for Intravenous Medication, J. A. M. A., this issue, p. 1024.

The term "buffer" has in recent years come into such general use in this connection that it is desirable for those associated with practical medicine to know exactly what is implied by the term, and to be intelligent regarding the practical aspects of the process. Perhaps a rather homely illustration will be helpful. The springs of an automobile obviously absorb, or "soak up," the shocks that would otherwise be transferred to the occupants of the car. Now, if we regard as shocks the hydrogen ion, which is the cause of acidity, and the hydroxyl ion, a cause of alkalinity, we may fairly regard as buffers any substances which will absorb such ions into their molecules.

The phosphates and carbonates are familiar examples of such substances, because they are salts of weak acids. Just why are the salts of weak acids good buffers? It is necessary to remember that weak acids are weak, and strong acids, strong, just in proportion as their hydrogen is capable of being dissociated or split off from the molecule when the latter substance is dissolved in water. Thus it becomes possible for sodium acetate, which is a salt of a weak acid, practically to neutralize a strong corrosive, such as hydrochloric or muriatic acid; for when these substances are mixed, the "strong" hydrogen ion of the hydrochloric replaces the sodium in the acetate, forming acetic acid. In other words, the same hydrogen, which was so corrosive when united with chlorin, becomes almost inactive when incorporated in the acetic acid molecule, because of the fact that, in acetic acid, the hydrogen is free only to a slight extent to split off or dissociate, while in hydrochloric acid it is for the most part split off or ionized. Similarly, the sodium of the acetate, when replaced by the hydrogen, in turn combines with the chlorin of the hydrochloric acid, and the harmless common salt is the result. Such changes take place according to the formula:

$$\text{Sodium acetate} + \text{hydrochloric acid} \rightleftarrows \text{sodium chlorid} + \text{acetic acid}$$

$$\mathrm{CH_3COO}\boxed{\mathrm{Na} + \quad \mathrm{Cl}}\mathrm{H} \rightleftarrows \mathrm{NaCl} + \mathrm{CH_3COOH}$$

If, for example, a living cell could survive in a medium containing sodium acetate, it can readily be seen how a comparatively large amount of hydrochloric acid could be added to that medium without killing the cell. The sodium acetate protects or buffers the cell from attack by the acid just as, in a political sense, neutral or buffer states separate the belligerent ones. The phosphates and carbonates of the blood in diabetes protect the body cells from acid by the mechanism just discussed; and it is only when these salts are exhausted that the concentration of acid (hydrogen ions) increases to the point at which the clinical complex of acidosis results. Although it may be reasoned that acid or alkaline solutions injected into the blood will be automatically cared for in the same way, the rate at which they are injected may necessitate readjustments so sudden as to upset, temporarily, interdependent colloidal mechanisms of delicate balance. Such subversions may be an important factor in the untoward reactions mentioned above, reactions often spoken of as anaphylactoid.

Studies by us [2] leading up to the buffering of intravenous solution were started in this laboratory two years ago, being applied at first only to bacteriologic mediums. It was while searching for the cause of the spontaneous deterioration of certain indicators that we were led to study their purity as measured by their p_H value. These observations revealed a high acid point for some of these dyes, particularly phenolsulphonephthalein, which is so extensively used in kidney efficiency tests. As we had been told previously by Dr. Williams of the apparent toxicity of certain batches of this dye in the marketed product, it occurred to us that there might be a correlation between the p_H and the toxicity.

Recent literature has directed considerable suspicion toward the employment of sodium citrate for transfusion purposes. As the result of untoward and even fatal reactions which he observed, Bernheim [3] says: "In the light of our more mature experience, it is utterly ridiculous to pretend any longer that the reactions that follow the giving of citrated blood are harmless and susceptible of being ignored."

Unger,[4] who quotes Bernheim, concurs in his opinion and surmises that certain of these results may be connected with the action of sodium citrate on the red blood cells and its deteriorating effect on the complement of the serum. A very severe result was observed by J. R. Williams in his service at this hospital. An electrometric test of the sample of citrate used showed a p_H of 10.5. As the tribasic sodium salt of citric acid has a p_H of about 8, it is obvious that free alkali was present in this sample of a product marketed especially for transfusion work. Neutralization of this alkali with acid made it possible to give the same patient a transfusion from the same donor without untoward incident. In the interest aroused by this occurrence, one of our laboratory assistants rashly subjected herself to a reinjection of her own blood drawn into the unbuffered citrate. Her reaction was similar to that of the patient, although by no means so severe. Whether there is any relation between that experience and the fact that this young woman was afflicted with recurrent boils for more than a year following this (quite unauthorized) experiment can only be conjectured.

To our knowledge, the p_H factor in sodium citrate has not heretofore been adduced as a possible explanation of its toxic action; but in light of the foregoing result, the possible bearing of this factor has been made the subject of studies to be presented later.

Our attention was first directed to the wide range in reaction of sodium citrate by Miss Evans of the Hygienic Laboratory, Washington, at the meeting of the Society of American Bacteriologists in December, 1920, where she reported on the deleterious influence of acidity on phagocytosis. In three market samples obtained by her the range varied between p_H 5 and 8. In light of her work, which is as yet unpublished, it seems highly probable that Unger's [4] conclusions as to the vulnerability of the white cells to citrate are not well grounded, as he gives no evidence of taking into consideration this important factor of the p_H of his solution. To what extent this factor may be of importance in the anticomplementary action of citrate is also a subject of study in this laboratory.

In one of our published studies [5] dealing with the buffering of bacteriologic mediums with glycerophosphates, mention is made of the desirability of employing compressed tablets of the buffer salt, previously sterilized. It is well known, of course, that phosphates readily precipitate out of solution on heating, especially in neutral or slightly alkaline solutions. Yet it is obviously desirable to use the phosphates in injection fluids whenever possible. For this reason it was thought feasible to sterilize the salt dry and dissolve it in the cold.

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[2] Mellon, R. R.; Acree, S. F.; Avery, Pauline M., and Slagle, E. A.: The Ionization Constants of Glycerophosphoric Acid and Their Use as Buffers, Especially in Culture Mediums, J. Infect. Dis. **29**: 1-6 (July) 1921; A Stable Single Buffer Solution, p_H 1 to p_H 12, ibid. **29**: 7-10 (July) 1921.

[3] Bernheim, B. M.: Whole Blood Transfusion and Citrated Blood Transfusion, J. A. M. A. **77**: 275 (July 23) 1921.

[4] Unger, L. J.: The Deleterious Effect of Sodium Citrate Employed in Blood Transfusion, J. A. M. A. **77**: 2107 (Dec. 31) 1921.

[5] Mellon, Acree, Avery and Slagle, Footnote 2, first reference.

The general plan of procedure followed in the preparation of these buffer tablets, so-called, is described by Prideaux.[6] Dipotassium hydrogen phosphate, for example, can be mixed with potassium dihydrogen phosphate in various proportions of each, such that a p_H may be obtained at any point between 4.49 and 10.

THE PHOSPHATE STANDARDS

C.c. N/15 Na_2HPO_4	C.c. N/15 KH_2PO_4	— log [H]
0	10	4.49
0.1	9.9	4.94
0.25	etc.	5.29
0.5		5.59
1.0		5.91
2		6.24
3		6.47
4		6.64
5		6.81
6		6.98
7		7.17
8		7.38
9		7.73
9.5		8.04
9.75		8.34
9.9		8.68
10.0		9.18

It should be mentioned that pelleting and dry sterilizing of salts introduce technical difficulties that do not come within the scope of this paper.

In a previous paper[7] describing a single standard buffer solution for colorimetric use, 20 c.c. was the quantity decided on for use as a standard. Accordingly, the buffer tablets of any p_H value which could also be employed for a single standard were made so that one of them dissolved in 20 c.c. of distilled water gave the desired p_H. As the result of experiment, it was found that for buffering purposes it was desirable to make the tablets of such concentration that dilution to four or five times the standard dilution of 20 c.c. could be effected without materially altering the p_H. From the practical standpoint this reserve buffer capacity on the part of the tablet has been deemed advisable. Its actual application to buffering such a solution as glucose, for example, is adequately set forth in the paper by Williams and Swett in this issue.

They have also shown that our so-called "pure" water, as usually distilled, is by no means neutral in reaction. This can only mean that impurities are still present, if only in small amount, for perfectly pure water is our standard of neutrality. Even perfectly pure water is thought to be slightly dissociable into its component hydrogen cations and hydroxyl anions. The point of neutrality has a p_H of 7.12 at 18 C.

Since the symbol p_H, or, as it is often written, p-H, is so commonly used, perhaps its definition will be of value. It is used to express the concentration of hydrogen ions, or the absolute acidity, in contrast to what is known as titratable acidity. For example: tenth normal hydrochloric acid and tenth normal acetic acid will both require the same amount of alkali by titration, since each contains the same chemical equivalent of acid. Yet the p_H of the former is 1 and of the latter, about 3, simply because, as has been mentioned before, hydrochloric acid, being a strong acid, is dissociated to the extent of about 91 per cent., while acetic acid is dissociated only to the extent of 1.3 per cent.

Since we think readily in terms of normality, the actual amount of acid represented by a certain p_H is best appreciated if its relation to the normality of a solution is defined. For example, a tenth normal hydrochloric acid has a p_H of 1, and a hundredth normal (N/100) has a p_H of 2, a thousandth normal a p_H of 3, etc. These numerals, 1, 2 and 3, really represent the logarithms, respectively, of 10, 100 and 1,000, using the system of logarithms having a base of 10. Under this system, the logarithm of 10 is made to equal 1; hence the logarithm of anything under 10 would be a minus quantity, which is not always convenient. To obviate working with minus quantities, when computing the logarithm of a tenth normal solution, for example, the logarithm of the denominator, 10, is taken. In other words, the reciprocal (which is 1 divided by the number) is employed; and it is for this reason that the p_H is defined as the logarithm of the reciprocal of the hydrogen ion concentration—a rather disconcerting phrase to the average reader of medical literature. For this reason, also, it must be kept in mind that a p_H of 1 represents a stronger hydrogen ion concentration than a p_H of 2. In other words, the acidity decreases as the numerical value of the p_H increases.

We will now return to the subject of buffering solutions for injection. As already stated, we noticed the spontaneous degeneration of so many samples of dry indicator dyes that we decided to study their p_H, since their chemistry makes phenol (carbolic acid) a likely impurity.

For buffering phenolsulphonephthalein, phosphates, carbonates and sodium chlorids are employed. The result is a physiologic standard solution of the phenolsulphonephthalein having a p_H of 7.2. For a 0.6 per cent. solution of the monosodium salt of phenolsulphonephthalein, we use 6 gm. per liter, which represents 0.016 molar, its molecular weight being 376.164. One gram per liter of sodium bicarbonate is used. Its molecular weight being 84.008, such a solution is 0.0119 molar. Of disodium hydrogen phosphate, whose molecular weight is 142.05, 0.6 gm. per liter is used, giving a 0.0042 molar solution.

The molecular weight of the pure phenolsulphonephthalein is 353; of the monosodium salt, 376. Employing 6 gm. per liter of the salt is equivalent to 5.633 gm. of the pure dye, which will require 16 c.c. of normal sodium hydroxid to yield the monosodium salt.

An equivalent quantity of sodium chlorid is added, considering 0.85 per cent as physiologic. In terms of the molecular weight of sodium chlorid, the equivalent quantity of 0.0119 molar sodium bicarbonate (as above employed) is 0.696, and of disodium acid phosphate, 0.246 and of phenolsulphonephthalein, 0.936. The total, 1.88, subtracted from 8.5 sodium chlorid per liter, leaves 6.62 gm. of sodium chlorid. A mixture of these four salts and alkali in 1 liter of distilled water completes the process.

Less complicated is the employment for this purpose of what is practically the Ringer-Tyrode mixture: sodium chlorid, 0.8 per cent.; potassium chlorid, 0.02 per cent.; anhydrous calcium chlorid, 0.02 per cent.; anhydrous magnesium chlorid, 0.01 per cent.;

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[6] Prideaux, E. B. R.: The Theory and Use of Indicators, New York, D. Van Nostrand Company, 1917, Chapter V.

[7] Mellon, Acree, Avery and Slagle, Footnote 2, second reference.

anhydrous sodium dihydrogen phosphate, 0.005 per cent., and sodium bicarbonate, 0.1 per cent. The p_{H} of this mixture depends on the purity of the materials. Our solutions gave from 8.1 to 8.4. This can readily be adjusted to 7.5 by the addition of a small amount of potassium or sodium dihydrogen phosphate.

The physiologic value of the Ringer solutions or its modification lies in the antagonistic action of the calcium and magnesium ions on the sodium which, taken alone, is well known to be toxic for certain living protoplasm. When combined with calcium or magnesium, or both, a sodium chlorid solution is said to be physiologically "balanced." Such solutions are not really buffered, but are "adjusted" and, because they contain bicarbonate, are unstable. Owing to the increased carbon dioxid tension of bicarbonate over the carbon dioxid tension of the air, the bicarbonate of such solutions on exposure to the air undergoes a change to carbonate, with a corresponding increase of alkalinity. We have found also a pure sodium bicarbonate solution having a p_{H} of 7.64 will, after ten minutes' aeration with hydrogen, have a p_{H} of 8.82. Furthermore, the Ringer-Tyrode and Locke solutions cannot readily be sterilized by heating, owing to the precipitation of calcium and perhaps magnesium salts. Such considerations are disadvantageous to the employment of these solutions practically, although it must be admitted that the p_{H} changes taking place in them are not of wide range.

The only other alternative at present is to buffer the sodium chlorid in a manner that disturbs the physiologic "balance" as little as possible. Virtually all of the market samples of sodium chlorid, even the chemically pure product, have a p_{H} well under 7, and it is often as low as 5. As mentioned above, our distilled water is similar. It has been found that a sodium chlorid solution of p_{H} 7.4 can readily be prepared by employing the following mixture: sodium chlorid, 80 parts; dipotassium hydrogen phosphate, 12 parts; potassium dihydrogen phosphate, 2.7 parts. It is obvious that there is still room for improvement in the preparation of a theoretically ideal saline solution for injection.

In this connection, it is worth noting that Bayliss,[8] in discussing surgical shock, has advocated the incorporation of a colloid of the same viscosity as the blood, preferring gum. He goes so far as to deprecate the use of salts alone in shock, noting that the rise in blood pressure is not permanent. Such observations serve to emphasize the complexity of factors involved, and for this reason we are content to await the practical results of these procedures. It is only fair, however, to state that during the year or so in which they have been employed clinically in this hospital, a distinct impression of their benefit has been created among the clinicians.

If such procedures finally justify their clinical adoption in hospitals, a word of caution even at this time may be in order. It is probable that many substances cannot be buffered satisfactorily, owing broadly to the fact that their therapeutic properties may function only at a certain p_{H}. For example, we found that arsphenamin could not be buffered below about 10. With this drug there are two molecules of hydrochloric acid to be neutralized, as well as two hydroxyl groups from which the disodium salt must be formed. It is well known that the incompletely neutralized product is very toxic, and for that reason a slight excess of alkali is recommended, making the process a crude one.

CONCLUSION

We wish to make it clear that the purpose of this paper is to bring clearly into view the scientific reasons for buffering injection fluids, and the possibility that untoward reactions may thus be diminished in number, in severity, or in both. We do not wish, however, to be understood as having reached any final conclusion on the subject. An evaluation can be reached only when such solutions are thoroughly tested clinically and experimentally. However, the clinical impressions have been so favorable to date that there seems to be justification for this presentation as a companion paper to the one by Williams and Swett, dealing with the clinical applications of these laboratory developments, which some time ago were turned over to the internal medicine department.

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[8] Bayliss, W. M.: Intravenous Injections to Replace Blood, Great Britain Medical Research Committee, Special Investigation Concerning Surgical Shock, No. 1, London, 1917.

SYPHILIS AND TRAUMA

THE WORKMEN'S COMPENSATION ACT, THE INDUSTRIAL PHYSICIAN AND THE SYPHILITIC EMPLOYEE *

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A latent syphilitic infection may in some cases play an important rôle as a factor in the immediate and late consequences of trauma. Although the relation of trauma to syphilitic lesions has long been recognized, recent laws governing workmen's compensation has made this of considerable importance. Injuries by syphilitic soldiers during the recent war brought up important questions regarding pension, retirement and compensation for such individuals.

The relationship is of particular importance to physicians engaged in industrial medicine. However, he alone does not share in its interest. The surgeon is cognizant of syphilis as a factor in the nonhealing of wounds, the nonunion of fractures. The ophthalmologist has observed interstitial keratitis appearing after trauma incident to a foreign body in the cornea of a syphilitic. The laryngologist is reluctant to perform a septum operation on a syphilitic. The internist is aware of the rôle that trauma plays in the cause of aneurysm. The psychiatrist realizes that it is not syphilis alone that causes paresis, but syphilis plus something else. Head trauma can be ascribed as a determining factor in the production of paresis in a certain number of syphilitics. In short, trauma in a syphilitic may determine the site of syphilitic lesions in almost all organs of the body.

The relation of trauma to the development of syphilitic lesions can be considered from two views—the medicinal and the medicolegal. The medical aspect will first be considered, and then the medicolegal.

The influence that trauma exerts in the localization of syphilitic lesions is not confined to this disease.

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Trauma may determine the site of tuberculous lesions, particularly of the bones and joints. Some dermatoses, for instance, psoriasis, have a predilection for such regions as are exposed to mechanical irritation and pressure; in patients with psoriasis or lichen planus or xanthoma tuberosum, new lesions may appear on places that had been subjected to some irritation. Indeed, Kaposi has expressed it as almost a law governing some skin affections that the skin reacts against irritants with a sort of specific energy in the sense of the original disease. The study of syphilis offers many occasions for just such observations.

Cazenave,[1] in 1843, was perhaps the first to point out the relationship between syphilis and trauma. Ricord mentions it in his lessons on the chancre, as do many of the older writers. The relationship is frequently seen by the dermatologist in the frequency of mucous patches and of syphilitic glossitis in excessive smokers; in condylomas resulting from irritation of secretions and excretions; in the squamous syphilids of the palms in those engaged in laborious occupations; in syphilitic lesions developing after tatooing, and in the observation that a gumma, as seen cutaneously, not infrequently appears at the site of previous trauma. Consistent with the latter statement are the interesting observations of Lacapère and Laurent,[2] who record the frequency of gumma of the frontal bone in Mohammedans, who during religious worship frequently strike and rest their foreheads for long periods on the marble floor in the mosque. An instance of a cutaneous gumma of the forehead which appeared after this area was traumatized is shown in Figure 1.

In 1877, Tarnowsky,[3] starting from the well-established fact that syphilitic manifestations are likely to appear after some traumatism and after a series of experiments, improvised a cutaneous test for the diagnosis of latent syphilis. This test consisted of an application to the skin of a caustic paste, and involved the characteristic manner in which syphilitic tissue reacted to its presence. A positive result was called "cauterisatio provocatoria." This test was found to be unreliable, but it is interesting to contrast it with the modern cutaneous test for the diagnosis of syphilis, namely, the luetin reaction. Although the luetin reaction has for its basis the phenomenon allergy, yet it is a singular fact that the control inoculations consisting of culture mediums without *Spirochaeta pallida* frequently react positively, which is in line with the cauterisatio provocatoria of Tarnowsky, and doubtless manifests the influence that trauma exerts on syphilized tissue.

POSSIBLE RESULTS OF TRAUMATIZING SYPHILIZED TISSUE, AS SEEN CLINICALLY

When syphilitic tissue is subjected to trauma inflicted in various ways, including that resulting from a surgical operation, healing of the wound may be delayed; in this event, antisyphilitic treatment facilitates or causes healing to take place. The wound may gradually assume the appearance which is characteristic of the different forms of tertiary syphilitic lesions; such an instance is recorded in Case 1, in which a man sustained an extensive laceration of the leg, one part of which involved the scar of a healed syphilid. The wound healed uneventfully, except the portion involving the scar. This portion gradually assumed the appearance of an ulcerating gumma (Fig. 2 *A*), which aroused the suspicion of syphilis. The Wassermann test then made was four plus. The administration of antisyphilitic treatment resulted in complete healing of the wound (Fig. 2 *B*).

Case 1.—*Gummatous ulceration, developing at site of laceration, involving scar of a healed syphilid.* P., a man, aged 26, single, had had a chancre about six years before, at which time treatment consisted only of mercury pills taken for a short time. About two years before I saw him, an ulceration appeared on two different areas of the left leg. The Wassermann test at this time was positive, and he received a few injections of arsphenamin, which healed the ulceration. Since that time no further treatment was received and he remained in good health.

Recently, the patient was thrown from a motorcycle, sustaining an extensive laceration of the left leg, part of which involved scars of the former syphilid. The wound healed uneventfully except for the portion involving the scars; this part gradually assumed the appearance of a gummatous ulceration. The edges were sharply defined, slightly raised and thickened. The inner portion was perpendicular. The floor had suppurated, and dirty gray. The ulceration was of a low grade inflammation. Figure 2 *A* shows the ulceration as it appeared about three months after the accident. The wound at this time greatly resembled a gummatous ulceration. For this reason a Wassermann test was made, which was four plus.

Arsphenamin was then administered, which resulted in a complete healing of the ulceration. Figure 2 *B* shows the ulceration after five intravenous injections of arsphenamin.

After healing has taken place, a syphilid may develop in the scar. In Muller's[4] case a large node, a gumma, developed in the healed abdominal incision. In Coues'[5] case the wound separated after the stitches were removed, and later took on the appearance of an ulcerating gumma.

The influence of repeated and long continued trauma is seen in Case 2 (Fig. 3). This man drove a wagon, the brake of which constantly knocked against his arm. At this site, a gumma appeared. After this lesion was healed, another similar lesion developed at the site of pressure resulting from resting his arm on the frame of the wagon seat.

Case 2.—*Cutaneous gumma developing at site of repeated and long continued trauma.* C. C., a negro man, aged 28, had had a chancre, for which he took medicine by mouth for a brief period. He had been a driver for the last twelve years. Almost daily for a number of years the releasing of the brake of the wagon would knock against the lower inner aspect of the right arm. Three years before I saw him, an ulceration developed at this site. At this time the Wassermann reaction was four plus. After four or five intravenous injections of arsphenamin the ulceration was entirely cured. Subsequent to this he changed his place of employment and had driven in a different wagon. The frame of the seat of this wagon was so arranged that the inner part of the right arm rested on it above the scar of the former ulceration. At this point of pressure a gumma recently developed. On the internal lower aspect of the right arm below the biceps and above the elbow there was a scar presenting the features of one resulting from a syphilid. Above this area there was an oval indurated mass—a gumma (Fig. 3). Clinical examination otherwise was negative. The Wassermann test was four plus. After arsphenamin administration, the tumor disappeared.

A chancre redux—virtually a gumma—is doubtless an expression of the influence that trauma exerts on syphilized tissue.

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[1] Cazenave: Traité des syphilides, Paris, 1843.

[2] Lacapère and Laurent: Influence du traumatisme sur les localisations de la syphilis, Paris méd. **8**: 94 (Feb. 2) 1918.

[3] Tarnowsky, B.: Syphilis und Reizung, Vtljahr. f. Dermat. u. Syph. **4**: 19-42, 1877.

[4] Muller, G. P.: Personal communication to the author.

[5] Coues, W. P.: Syphilis and Trauma, Interstate M. J. **23**: 603-615 (Aug.) 1916.

The literature emanating from military experiences during the recent war contains many reports in which injuries sustained by persons with syphilis were a determining factor in the production of syphilitic lesions. Particular mention may be made of the article of Gougerot and Clara,[6] who report divers tertiary lesions developing in the skin, muscles and bones at the site of wounds and contusions inflicted during warfare. In one of their cases a soldier sustained a compound fracture of the femur. The wound, twenty-three months after the injury, was unhealed, at which time it assumed the appearance of an ulcerating gumma. Antisyphilitic treatment was then administered, which healed the wound in eighteen days. In most of their cases, syphilitic manifestations appeared within a short time of trauma, and in all cases antisyphilitic treatment promptly healed the wound which previously had resisted all surgical and medical treatment to bring about healing.

Not only may syphilitic manifestations develop in the skin and muscles when these are subjected to trauma, as is shown in the foregoing reports, but other organs—the osseous system, viscera and nervous system—as will later be shown, may similarly react after the infliction of trauma.

In the exhaustive report of Stolper,[7] cases are cited which clearly show the rôle that trauma may play in the causation of visceral syphilitic lesions. Ramond and Postina[8] report the case of a soldier, aged 28, who after experiencing front line service for three years was thrown some distance by the explosion of a shell. He sustained contusions of the chest and abdomen. Soon after he developed symptoms of cardiac decompensation, and clinical evidences of an aortic aneurysm were discovered. The patient died, and necropsy revealed an aortic aneurysm.

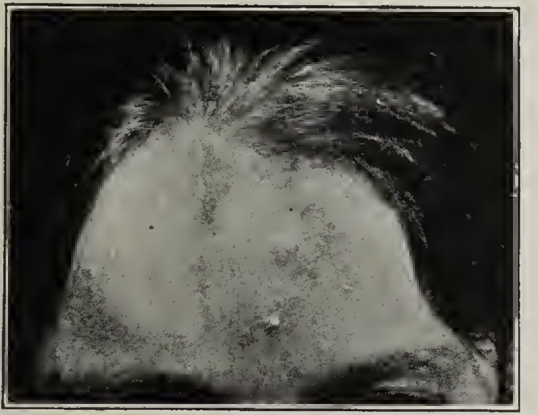

Fig. 1.—Nodular syphilid appearing after trauma: The patient, while walking in the dark, knocked her forehead against a door; the forehead was severely contused; the lesion appeared one month later; the patient was unaware of a syphilitic infection and was untreated; the Wassermann test was four plus.

The development of gumma of the testicle after trauma to this organ is reported in Case 3.

Case 3.—*Gumma of testicle developing after trauma.* H. M. L., a man, aged 21, single, denied having been exposed to venereal infection. His father and mother, who were killed in a railroad accident, were in good health prior to the accident. One sister was living and in good health. The family history was otherwise negative. The patient had always enjoyed good health until the onset of the present trouble. About one month before I saw him he fell, injuring the testicles, since which time there had been considerable pain and swelling. The patient thought that for the last two years the right side of the scrotum had been slightly larger than the left; but pain had been absent. The right testicle was enlarged, nodular, indurated and tender. The epididymis and vas deferens were normal to the touch. The prostate and seminal vesicles were normal to palpation. In a mistaken diagnosis the right testicle was removed. Grossly the testicle was moderately and irregularly enlarged and firm in consistency. Small nodes were scattered throughout the organ. The histologic examination disclosed a picture characteristic of gumma. The Wassermann reaction was subsequently reported as positive, four plus.

SYPHILIS AS A FACTOR IN DELAYED UNION AND NONUNION OF FRACTURES; QUESTION OF FRAGILITY OF BONES IN SYPHILIS

Among the general causes of delayed and nonunion of fractures, syphilis is a factor in preventing normal union.

The susceptibility of bone marrow to spirochetal invasion has been demonstrated in experimental syphilology. Clinically, we know that syphilis not uncommonly involves the osseous system, particularly in hereditary syphilis. This involvement frequently exists without producing any symptoms. The truthfulness of this is manifested in the procedure of roentgenographing the skeleton for diagnostic evidence of latent syphilis. These considerations are consistent with the baneful influence that syphilis may exert on the reparative processes after fracture.

In Estes'[9] analysis of the causes of delayed union in fractures of the long bones, sixty-four cases were studied. Of this number, three cases of compound, comminuted fracture of the tibia were found to be syphilitic. No manifestations of the disease were apparent, and infection was not definitely admitted, but the Wassermann test, taken on suspicion, was four plus. Specific treatment seemed in two cases to hasten definitely the bony union.

There are many fractures of the bones sustained by syphilitic patients which unite uneventfully. On the other hand, convincing cases have been reported to show that in some instances syphilis has had a great effect in the delayed union and nonunion of fractures. Gellé[10] reports a number of such cases. In one, a man, aged 30, experienced an oblique fracture of the tibia. There was no evidence of union at the end of seven months, at which time there were symptoms of tertiary syphilis. Antisyphilitic treatment was administered. At the end of one month, union had occurred. In another case, a man, aged 25, with secondary syphilis, sustained a fracture of the tibia, which failed to unite after appropriate treatment for fifty-five days. Antisyphilitic treatment was administered for fourteen days, at which time there was evidence of beginning union. The treatment was purposely discontinued. Gellé states that, for the next fifteen days, careful observation showed no more progress toward union. Mercurial treatment was again resumed, which resulted in complete union during the following three weeks.

In all cases of fractures with long delayed or fibrous union, the patient should be examined for syphilis. The examination should include not only a Wassermann test but a roentgenographic study of other bones of the body. Such patients, if syphilitic, are usually in the tertiary period of the disease, presenting no obvious manifestation of the infection.

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6. Gougerot and Clara: Syphilis post traumatiques, J. med. franç. **7**: 216-218, 1918.

7. Stolper, Paul: Ueber die Beziehungen zwischen Syphilis und Trauma, insbesondere in gerichtlich- und versicherungsrechtlich-medicinischer Hensicht, Deutsch. Ztschr. f. Chir. **65**: 118-198, 1902 (review of literature).

8. Ramond, F., and Postina, L.: Aneurysme et insuffisance aortiques traumatiques chez un syphilitique, Bull. et mém. Soc. méd. d. Hôp. de Paris, February, 1918, p. 132.

9. Estes, W. L.: A Study of the Causes of Delayed Union and Non-Union in Fractures of the Long Bones, Ann. Surg. **71**: 40-47 (Jan.) 1920.

10. Gellé, L.: Sur les fractures chez les syphilitiques, Thèse de Paris, No. 328, pp. 1-130, 1884 (review of literature).

Syphilis may at times cause fragility of the bones which predisposes them to fracture. Charpy [11] points out that spontaneous fractures in syphilitics can be attributed to two causes: (1) a local syphilitic lesion, simple osteitis, or gummatous lesion which, rarifying the bony structure, diminishes its resistance, and (2) a general lesion involving the whole skeleton, but not to the extent that any one bone appears outwardly changed.

Charpy made certain experiments in regard to the question of the fragility of bones in tertiary syphilis. The fibula from a person, aged 61, fractured at 200 kg. (441 pounds) pressure. In another experiment, a grossly normal fibula from a syphilitic patient was fractured with 175 kg. (385 pounds) of pressure. Subsequent examination of the medulla of this bone revealed no pathologic condition. Fibulae from nonsyphilitic patients were again tested, and were found to fracture at 300 kg. (661 pounds) pressure. From these experiments Charpy estimated a reduction of 50 per cent. in the solidity of the skeleton of patients with tertiary syphilis.

Fractures occurring spontaneously or after an insignificant trauma have been reported. Space forbids a citation of such cases, reported notably by Vernot,[12] Fulda [13] and Meriel.[14]

In many cases gummatous bursitis or syphilitic bursopathy of Verneuil, traumatism is an important exciting cause. Indeed, the bursae involved in this condition are those mostly exposed to trauma.

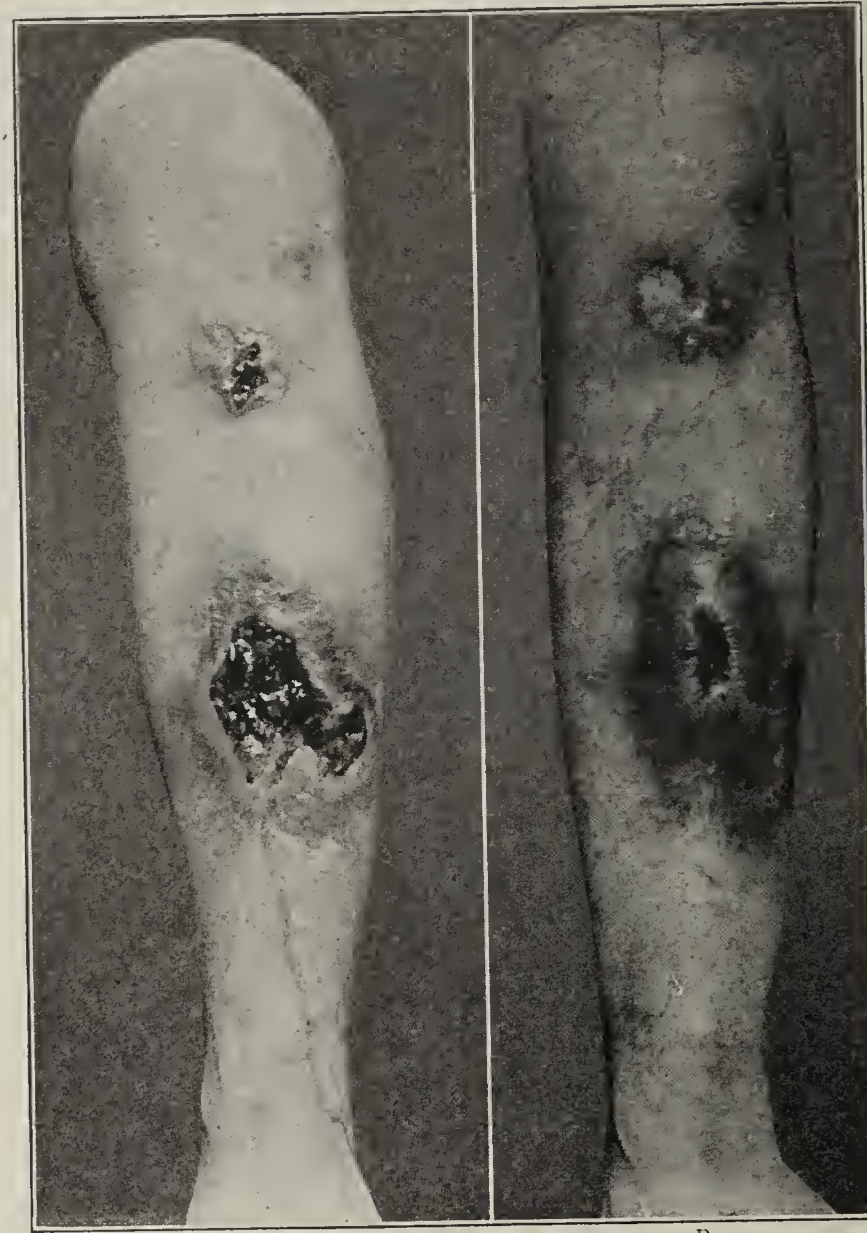

Fig. 2 (Case 1).—*A,* ulceration presenting the appearance of a gumma appearing at the site of a laceration involving the scar of a former syphilid; the wound gradually assumed the appearance shown here, about three months after the original laceration sustained in an accident. *B,* ulceration almost healed after five intravenous injections of arsphenamin.

RESULTS OF TRAUMATIZING SYPHILITIC RABBITS [15]

In this study, in an endeavor to produce syphilitic lesions at the site of trauma, twenty-five syphilitic rabbits were utilized. All of these rabbits were successfully inoculated intratesticularly. In none was generalized syphilis produced. The age of the infection varied from a few weeks to ten months. Some were in the acute phase of an intratesticular inoculation with *Spirochaeta pallida.* The scrotum was considerably enlarged and edematous; the testes were likewise enlarged and nodular. The fluid obtained from an intratesticular puncture contained many motile spirochetes. Other rabbits were in the latent or quiescent phase; the organs were normal in size, and one or two small nodes were present, the aspirated fluid from which contained a few nonmotile spirochetes.

The following methods of inflicting trauma was carried out on one or more rabbits. The experiments were conducted under local or general anesthesia.

An incision about 3 inches (7.5 cm.) in length was made through the skin of the back; the incision was sutured. Over a small area, the skin was pinched with a hemostat and pricked with a scalpel; this was done in a number of places in the same area. The foregoing trauma was inflicted at variable intervals, but always at the same place, every day for a week with a week intervening, or at weekly intervals. The total duration of this traumatization extended over a period of from three to five months.

In other rabbits the cornea was scratched sufficiently deep to involve Descemet's membrane. In others the anterior chamber was punctured with a small needle, the aqueous fluid evacuated, and the iris pricked with the needle. This procedure was not repeated; the former procedure, however, was repeated at varying intervals.

The results of these experiments were entirely negative. After the completion of all traumatization experiments, the wound healed uneventfully and no untoward reaction developed.

Consistent with these negative results is the fact that we have never observed a syphilitic lesion develop at the site of incision made through the scrotum in removing the syphilized testicle for transplanting into other rabbits, in conducting studies on experimental syphilis in rabbits.

POSSIBLE EXPLANATION OF APPEARANCE OF SYPHILITIC LESIONS AT A PREVIOUSLY TRAUMATIZED AREA

It is not definitely known why syphilitic lesions are likely to appear at the site of trauma. The following considerations may serve to explain this phenomenon. The infliction of trauma may produce a locus minoris resistentiae and serve to activate dormant spirochetes. This view is sustained by the following observations. Warthin has demonstrated the spirochete in many organs of latent syphilitics coming to necropsy. *Spirochaeta pallida* has been found in atrophic and pigmentary remains of syphilids, long after their involution. These organisms may be found in the scar of chancre long after the sore has healed. Neisser found spirochetes in the skin of syphilitic patients in which there was no local tissue reaction.

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[11] Charpy, M.: De la fragilité des os chez les syphilitiques, Ann. de dermat. et de syph. **6**: 269-272, 1885.

[12] Vernot: Tr. M. Soc. Dept. of Indre and Somme, p. 39, 1846.

[13] Fulda: Centralbl. f. Chir. **37**: 691, 1887.

[14] Meriel, T.: Bull. et mém. Soc. anat. de Paris, June, 1901, p. 417.

[15] Attempts were made to traumatize the nervous system of rabbits, but the means improvised were found unsatisfactory and the attempt was abandoned.

Before the spirochete had been discovered, Neumann[16] recorded the persistance of perivascular cell infiltration of the papillary blood vessels long after the disappearance of syphilitic papules.[17]

Spirochetes from the blood may be deposited at the site traumatized. Although it is exceptional for these organisms to be recovered from the blood of patients with tertiary syphilis, cases have been reported in which the organisms were demonstrated in such instances. Uhlenhuth and Mulzer[18] report such findings.

The phenomenon allergy, or the hypersensitive state of syphilized tissue, doubtless plays a rôle in the influence that trauma exerts in causing syphilitic lesions. Neisser employed the term *Umstimmung* to designate the pathologic state of the skin in chronic syphilitic patients, to which phenomenon he attributed the appearance of a positive reaction at the site of the control employed in the luetin reaction.

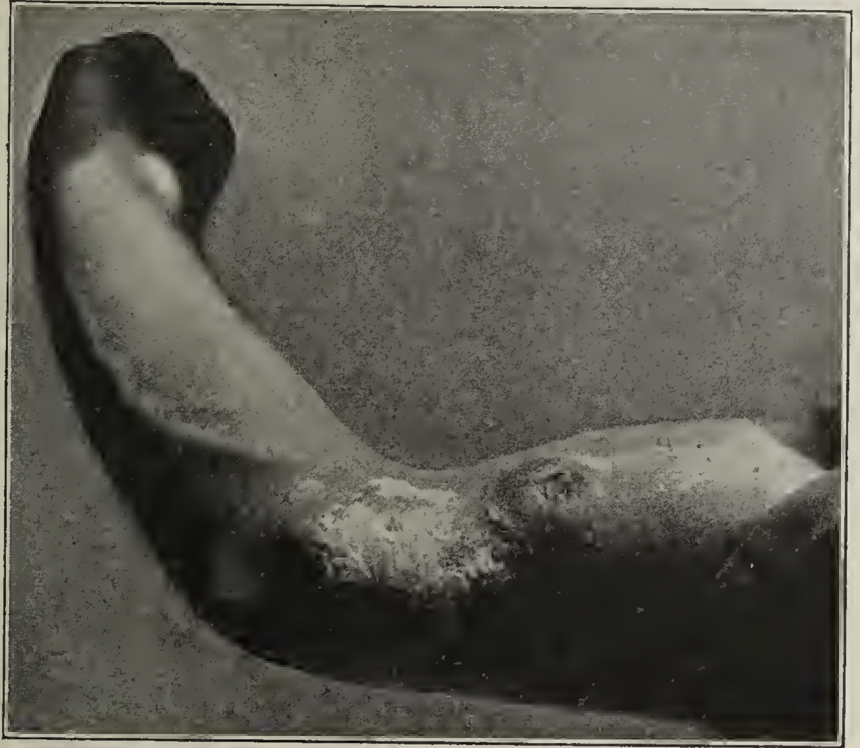

Fig. 3 (Case 2.—Gumma above scar of syphilid.

Because of the allergic state of syphilized tissue, it is perhaps possible that trauma, a nonspecific irritant, acts as a stimulant to this tissue, causing it to react in a characteristic manner in the absence of the specific irritant, namely, *Spirochaeta pallida.*

Osnato,[19] after reviewing our knowledge regarding the pathologic effect of trauma on the cerebrum, comes to the conclusion that:

> There are undoubted acute and chronic pathological lesions of the brain ascribed to trauma of the head with or without injury to the vault or base of the skull. The early results of injury are due to hemorrhage and laceration or destruction and edema of brain tissue; the later results are due to gliosis and sclerosis of nerve cells. The latter pathological changes produce the so-called traumatic insanity. The earlier symptoms produce focal paralytic lesions or simple concussion. It appears from the evidence submitted that the cerebral symptoms of the paretic type develop when something happens to change the permeability of the blood vessels of the brain, thus allowing the spirochetes and their toxins access to brain tissue. Trauma of the brain may, therefore, by causing vascular injury or brain destruction, be followed later by gliosis and nerve cell sclerosis, allowing first the spirochetal invasion, and later adding to the gliosis and sclerosis of nerve cells which are also an integral part of the paretic brain pathology.

PROVOCATIVE INFLUENCE OF TRAUMA ON THE WASSERMANN TEST

Since trauma may activate a latent syphilitic infection and determine the site of a syphilitic lesion, there is reason to suppose, *a priori,* that the same may occur in the Wassermann test.[20] My attention has been called to such a phenomenon by Dr. P. S. Pelouze of Philadelphia, to whom I am indebted for the histories of Cases 4 and 5, which show how previous negative Wassermann tests, in known syphilitics, became positive (four plus) after these patients sustained trauma inflicted in one way or another.

Case 4.—W. E., a man, aged 29, had a chancre of the lip. In May, 1918, the Wassermann test was four plus. During the following year he received twenty-four injections of neoarsphenamin and twenty-four mercurial rubs. During this time three negative Wassermann tests were obtained, and the test was again negative in October, 1919. The following month he experienced an infection of the leg which confined him to bed and which necessitated a minor surgical operation. In February, 1920, the Wassermann test was four plus; repeated later, it was again four plus.

Case 5.—L. K., a man, aged 33, had a chancre in August, 1919. The Wassermann test was four plus. Arsphenamin and mercury were administered at intervals until November, 1919, at which time the test was negative and was again negative in January, 1920. In February he was shot in the arm; the bullet was extracted and tetanus antitoxin, 1,500 units, was administered. Two weeks after this injury the test yielded a four plus reaction.

THE WORKMEN'S COMPENSATION ACT AND THE SYPHILITIC PATIENT

The burden of proof rests upon a claimant for compensation made under the workmen's compensation act to show, by competent testimony, not only the fact of the injury, but also that it arose out of and in the course of the employment of the claimant,[21] and such proof must be based on something more than a mere guess, conjecture or surmise.

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[16] Neumann, I.: Neuere Untersuchungen über die histologischen Veränderungen der Hautsyphilide, deren Verlauf und über das induirte Dorsallymphgefäss, Vtljahr. Dermat. u. Syph. **2**: 209-240, 1885.

[17] These observations, which were confirmed by Hjelmman (Arch. f. Dermat. u. Syph. **45**: 57, 1898) lend a strong support to Hutchinson's doctrine that residues of the early period of syphilis form the starting point of later lesions.

[18] Uhlenhuth, P., and Mulzer, P.: Weitere Mittheilungen über die Infectiosität des Blutes und anderer Körperflussigkeiten syphilitischer Menschen für das Kaninchen, Berl. klin. Wchnschr. **1**: 769, 1913.

[19] Osnato, Michael: Trauma and Other Nonluctic Influences in Paresis, J. Nerv. & Ment. Dis. **52**: 112-133 (Aug.) 1920.

[20] In the explanation of a traumatic provocative Wassermann test, the following consideration should be borne in mind. The Wassermann test in the light of present knowledge may be defined as a reaction of a physiochemical nature in which there occurs a precipitation of the globulin of the syphilitic serum by the lipoidal colloids of the antigen, with absorption of the complement by this precipitate. We do not definitely know whether this test fluctuates from day to day or week to week, although there is evidence that it does fluctuate in the absence of treatment over longer periods of time. Is this fluctuation dependent on the absence or presence of spirochetal activity, or on some metabolic change which directly influences the test? We know that an acute infectious disease may provoke a positive Wassermann reaction in a syphilitic patient; yet it is not known whether this is due to stimulation of the dormant spirochetes or through a direct influence on the test. It will be noted that, in Case 8, tetanus antitoxin was administered. This injection, a foreign protein, may have been a direct factor in changing the test. There are perhaps other factors beside spirochetal activity which, by an interplay of metabolic changes, directly influence the complex underlying basis of the Wassermann test: for example, reports obtaining negative Wassermann tests in syphilitics by the injection of milk. According to M. L. Menten (Am. J. Obst. **78**: 514 [Oct.] 1918), the blood of pregnant women giving an antepartum positive Wassermann reaction, in the absence of treatment, frequently gives a negative reaction when the postpartum blood is examined.

[21] This part of the workman's compensation is variably phrased in different states. In some states the injury should "arise out of and in the course of employment"; in other states the injury should originate in the "course of employment," and in a few states the injury should originate "of employment."

When a workman dies from a preexisting disease, if the disease is aggravated or accelerated under certain circumstances which can be said to be accidental, his death results from injury by accident.

VERDICTS RENDERED IN INJURIES SUSTAINED BY SYPHILITIC WORKMEN

Case 6.—*Aneurysm developing suddenly after violent physical effort in the course of employment.* In this case, *Haskell and Barker Car Co.* v. *Brown,* Ind. App. 117 N. F. 555 (1917), the decedent was in the defendant's employ unloading steel sheets from cars by means of a derrick which was attached to the sheets through a chain and hook. The work required considerable physical effort. When the decedent was at work he was seen by another employee to stagger and to hold his hand to his throat as if he was choking. On later examination a physician found him suffering from an aneurysm.

In affirming an award in favor of the applicants, the court held that the word accident as appearing in the compensation acts was to be used in its popular sense, and meant any unlooked for mishap or untoward event, not expected or designed. The court held, further, that these accidents "arose out of" the decedent's employ, as he was doing that which was expected of him at a time and place required by such duties.

Case 7.—*Disease condition (syphilis) retarding recovery.* In *Hills* v. *Oval Wood Dish Co.,* 191 Mich. 411, 158 N. W. 214 (1916), it appeared that an employee's arm was injured with extensive lacerations. An award for compensation was made and affirmed by the board. At the expiration of the period for which compensation was agreed on, the defendant sought to be relieved from further payments on the ground that the disability due to the injury had ceased and that such disability as continued was the result of syphilis.

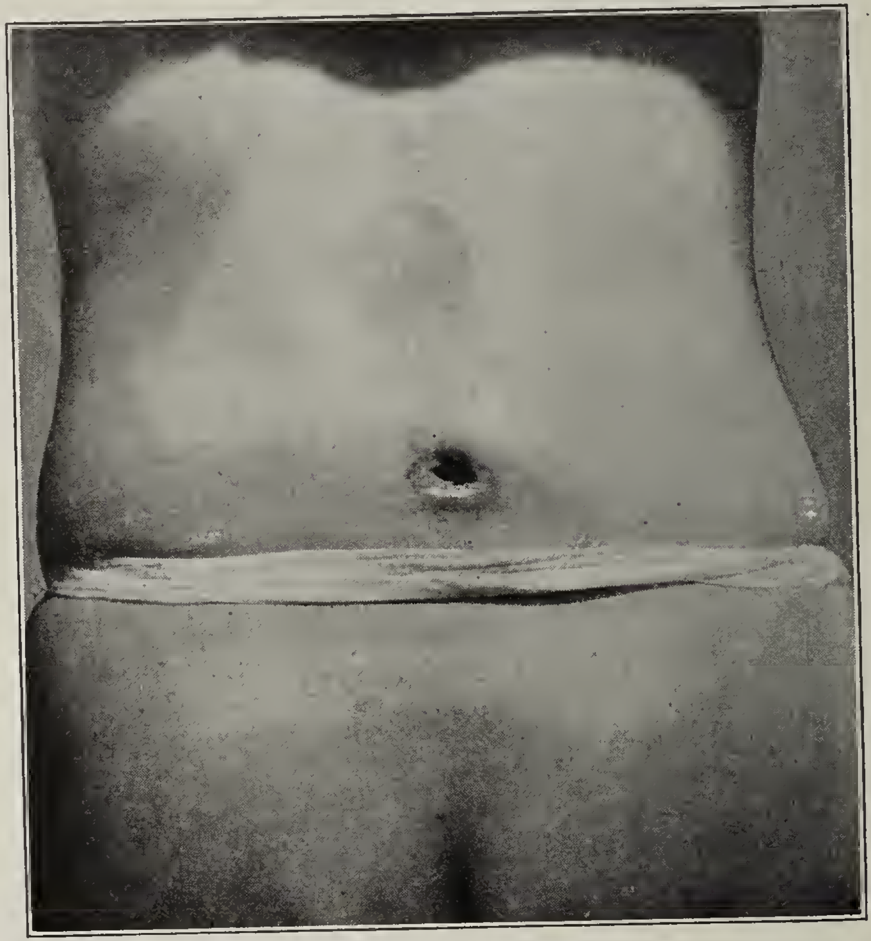

Fig. 4.—Ulceration on a patient with neurosyphilis, developing after many lumbar punctures performed in the course of intraspinal therapy. It greatly resembled a gummatous ulceration; the ulceration was of a low grade inflammation and presented a "punched" out appearance. The Wassermann test at the time of its development was four plus. Healing was protracted. Arsphenamin intravenously, and in addition local treatment of the ulceration, was used to bring about healing.

In affirming the determination of the board in refusing to relieve the defendant from further payment of compensation, the court said:

> Assuming that such disability is being prolonged by the disease, there is yet no point at which the consequences of the injury cease to operate. It is the theory of respondents, not that the consequences of the injury cease, but that they are prolonged and extended. There is no part of the disability that would have happened, or would have continued, except for the injury extended through the entire period, and so long as the incapacity of the employee for work results from the injury, it comes within the statute, even when prolonged by preexisting disease.

Case 8.—*Compensation award for paresis following injury to head* (in re: *Crowley,* 223 Mass. 288, 111 N. E. 786, 1916).

In affirming a decree confirming an award of compensation, the court said:

> The material evidence before the committee on arbitration warranted the findings that the employee had a preexisting constitutional disease known as syphilis, which, being dormant left his ability to perform the arduous work for which he was hired unimparied, and that because of the nature of the accident arising out of and in the course of employment, his nervous system suffered a shock sufficiently severe to aggravate and accelerate his condition, until general paresis or insanity resulted, depriving him of all capacity for work in the future. The statute prescribes no standard of fitness to which the employee must conform, and compensation is not based on any implied warranty of perfect health, or immunity from latent and unknown tendencies to disease, which may develop into positive ailments, if incited to activity through any cause originating in the performance of the work for which he is hired.
>
> What the legislature might have said is one thing, what it has said is quite another thing, and in the application of the statute the course of partial or total incapacity may spring from and be attributed to the injury just as much where undeveloped and dangerous physical conditions are set in motion producing such results, as where it follows directly from dislocation, or dismemberments, or from internal organic changes capable of being exactly located.

POST-TRAUMATIC PARESIS

Much has been written, particularly by the older writers, concerning the influence of head injuries in the development of paresis. One sees occasionally cases of paresis in adults, the symptoms of which definitely followed trauma. There is no doubt that trauma can be ascribed as a precipitating cause of paresis. It therefore becomes a matter of considerable importance in connection with the liability of employees to decide how far an injury to the head may be the cause of general paresis.

Mott[22] estimates that 10 per cent. of cases of paresis admitted to the asylums have a history of head injury. However, in many cases of paresis apparently following trauma the disease in all likelihood started before the injury.

The industrial physician should realize that trauma not only is a precipitating cause of paresis, but may exacerbate it and may also precipitate a relapse. This is of particular importance, since the early symptoms of paresis may be insidious and may for some time remain undetected. In this way false claims for compensation may arise.

A case is recorded by Mott in which a patient at one of the London county asylums died of general paralysis; his wife claimed damages from the railway company in whose service her husband had been many years a guard. It appeared that the man himself had not felt fit for his work, and stated that in shunting the train he had received an injury to his head; it was possible that he had had a seizure and fallen. He was seen by the medical officer of the company, who gave it as his opinion that there was nothing organically wrong with him and that he was fit for work. Subsequent inquiries from fellow officials disclosed that for some time before the accident this man had been strange in his manner and not like himself.

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[22] Mott, F. W.: Syphilis of the Nervous System, System of Syphilis Power, D'Arcy and Murphy, Ed. 2, London 4: 240, 1914.

In connection with the Workmen's Compensation Act and the liability of the employer, other precipitating causes of paresis which may arise out of and in the course of employment become a matter of importance.

To determine some of the precipitating causes of paresis, I analyzed sixty-one cases of paresis among the admissions to the Boston Psychopathic Hospital. Of the sixty-one cases, no precipitating cause could be determined in thirty-seven. In three cases, symptoms followed a very recent trauma. Two of these cases are here reported:

Case 9.—*Symptoms of paresis following severe head injury.* H. L., a man, aged 36, was not sufficiently oriented to give a history. For this reason it was not determined whether or not he had had previous syphilitic treatment. His wife started that they had been married seven years; she had never been pregnant. The patient was apparently well; no mental symptoms whatever were noted until after an accident which occurred in December, 1918. While he was engaged in his work, a heavy iron tray fell on his head. He was unconscious for about four hours. Since this accident until the time he was admitted, April, 1919, he had been incapacitated. In this interval he complained of dizzy spells and pain in his head, and he felt "all in." He had difficulty in sleeping, and his wife noticed that at times he was confused and talked strangely. Finally, his speech became impaired. As a result of wandering away from home in his underclothes, he was admitted to the Boston Psychopathic Hospital, at which place he came under my observation.

On admission, he was disoriented in all phases, confused and incoherent. There was marked memory defect for recent and remote events. He was euphoric, lacked insight, fabricated, and was suggestible. Ideation and cerebration were decreased. The general physical examination was essentially negative. The pupils were unequal and irregular; the right pupil reacted sluggishly to light; the left pupil did not react to light. All the deep reflexes were exaggerated. There was no ankle clonus or ataxia. Speech defect and tremor of the tongue were marked. The blood Wassermann reaction was four plus. Examination of the spinal fluid was positive for globulin; the colloidal gold test was 5555541000; the Wassermann test was four plus with 1, 0.8, 0.6, 0.4 and 0.3, c.c.

Case 10.—*Symptoms of paresis appearing immediately after an accident.* J. H., a man, aged 41, married, was infected twenty years before admission to the hospital, and was treated by a druggist; he received no further treatment. He was a driver of a motor truck. April 17, 1917, while driving his truck in a narrow street and about to pass another vehicle, an iron beam projecting from the truck he was driving struck a telegraph pole. The impact swerved the machine, throwing his helper, who was seated with the patient, to the street. The patient retained his seat, but it appears that he was jolted and thrown against the frame of the seat. However, he was able to drive the truck to his home. When he entered the house, his wife said that he looked strange and white. The only response to her questions were "Here, here." This he repeated many times. After sitting down to supper he put his hands in the soup. He left the table without eating, left the house and drove his truck to the garage. His wife, not knowing what had happened, thought her husband was drunk. He was brought home from the garage by a friend; after entering the house he did not recognize his mother. A physician failed to find any evidence of bodily injury. That night he slept but little. The following day he was "dazed," and talked incoherently. April 20, three days after the accident, he was admitted to the Boston Psychopathic Hospital. The patient's wife stated that, prior to the accident, he worked every day and that he acted normal in every way.

On admission, he was oriented. Speech and memory defect were present. He was euphoric, but delusions were not present. There was tremor of the tongue and lips. The pupils were unequal and irregular, and did not react to light. All the deep reflexes were exaggerated. The blood Wassermann reaction was four plus. Examination of the spinal fluid revealed 26 lymphocytes per cubic millimeter; globulin was positive; the colloidal gold test was 5554443321. The Wassermann test was four plus with 1, 0.7, 0.5, 0.3 and 0.1 c.c.

Dr. Harry C. Solomon states that since May, 1917, the patient has received ninety injections of arsphenamin, of 0.3 gm. average dose, and five intraspinal injections of arsphenamized serum. There has been no particular change in the blood and spinal fluid. The last lumbar puncture, performed in November, 1921, gave a Wassermann positive in 0.1 c.c., globulin positive, 7 lymphocytes per cubic millimeter, and the colloidal gold test was 5555553300. On several previous tests the colloidal gold test had been somewhat weaker. The patient has had about five seizures since the onset of his difficulty. Following each of these he is confused and disoriented, and frequently shows aphasia, all symptoms clearing up after a comparatively short period. He has been able to work at intervals, but shows a slowly progressive deterioration.

The remaining patient was a passenger in a subway trolley when an explosion occurred. He was thrown to the floor of the car and slightly injured. A history of remote trauma was present in three cases, and was in all probability incidental to the development of paresis. In one case, symptoms appeared immediately after physical exhaustion. This patient worked incessantly for two days and two nights in zero weather on a dredging boat. At the end of this time he became excited and confused, presenting the first symptoms of paresis.

One patient developed initial symptoms after sunstroke. In another case, initial symptoms followed soon after an attack of lead poisoning. This patient was a painter.[23]

It should be noted that, in Case 10, initial symptoms of paresis appeared immediately after an accident. The patient, the driver of a motor truck, was jolted and thrown against the frame of the seat. There was no evidence of injury. Prior to the accident, no history of any unusual behavior on the part of the patient could be obtained.

In this case the employer is doubtless liable for compensation, since the accident—the precipitating cause of the paresis—"arose out of and in the course of employment," as the employee "was doing that which was expected of him at a time and place required by such duties."

Just how long an interval may elapse between trauma and paretic symptoms and shall entitle the case to be regarded as one of traumatic paresis is not definitely known. It is, however, a matter of considerable medicolegal importance.

Mott states that the symptoms of a post-traumatic paresis must not develop until after a week's interval of freedom from symptoms, since he believes that time is required to destroy or irritate the brain to the point of producing the paretic picture.

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[23] Other precipitating causes were: acute infectious disease, three cases in which initial symptoms of paresis appeared within one month after an attack of influenza; two cases in which initial symptoms appeared between one month and five months of an attack of influenza, and one case in which initial symptoms appeared six weeks after acute rheumatic fever. Mental overwork was ascribed as the immediate cause in one case; mental stress and strain in six cases; alcoholic debauch in one case, and childbearing in one case.

A number of cases of post-traumatic paresis have recently been reported by Osnato.[19] In these, symptoms appeared soon after the trauma: a few days in most instances, and not more than a few weeks in any of the cases.

Southard and Solomon[24] state "that it would seem, however, on general grounds that three months is the longest period in which the post-traumatic effects are likely to be delayed."

PROPER COURSE FOR INDUSTRIAL PHYSICIAN TO PURSUE WITH SYPHILITIC WORKMEN

It is apparent from the foregoing verdicts that if a syphilitic workman, while in the performance of his work, sustains, under certain circumstances, an injury which causes an aneurysm or paresis or any of the possible results of traumatizing syphilized tissue pointed out in this paper, his employer is liable for compensation, provided it can be shown that the injury arose out of and in the course of employment. The fact that the workman had a preexisting disease—syphilis—does not alleviate the responsibility of his employer for compensation for injury, disability or death indirectly due to syphilis. The statute prescribes "no standard of fitness to which the employee must conform, and compensation is not based on any implied warranty of perfect health, or immunity from latent and unknown tendencies to disease which may develop into positive ailments, if incited to activity through any cause originating in the performance of the work for which he is hired."

In view of the foregoing considerations, what should be the attitude of the industrial physician in the examination of applicants for work in which injury is likely to result? Should he have a Wassermann test performed as a routine, and refuse work to those showing a four plus reaction? This procedure would defeat workmen's compensation so far as the syphilitic patient is concerned, and would be unfair to most syphilitic patients and expensive to the employer. This procedure is unpractical; moreover, it is wrong sociologically, since it would discriminate against all syphilitic persons, and syphilis is by no means an uncommon disease.

Yet it is incumbent on the industrial physician to be fair both to the employee and the employer. What, then, should be his attitude toward the syphilitic workman? As a matter of fact, the risk the employer incurs through employing a syphilitic person is a very small one. There are scores of syphilitic workmen who have sustained injuries with no untoward result. When I was stationed at a base hospital in one of our army camps during the discharge of men returning from oversea service, Wassermann tests were made on hundreds of men, all of whom had seen oversea service; many were in front line service and sustained injuries from one or the other implements of warfare. None of those showing a positive reaction (the infection in many was of long duration) experienced, so far as could be determined, any untoward results of their injuries.

The risk to the employer of employing a neurosyphilitic employee is much greater than employing a syphilitic without a neuraxis involvement. White,[25] some time ago, referring to naval officers, stated that no officer with a positive Wassermann reaction should be in a position of command. From the standpoint of the industrial physician it is equally important to formulate the rule that no employee with neurosyphilis should be placed or retained in a position of great responsibility, such as locomotive engineer, or in a position of a hazardous nature. The potential danger of paresis is too great.

It is not possible for the industrial physician to examine the spinal fluid of all the syphilitic workmen, nor is it necessary.

The most important and perhaps the first objective sign of neurosyphilis is pupillary abnormality,[26] that is, irregularity of outline, which is almost always associated with sluggish reaction to light, stiff pupils, or the Argyll Robertson pupil. These abnormalities are equivocal and not an infallible symptom of neurosyphilis, since the latter may exist with normal pupils and other conditions may give rise to them. It is not uncommon to observe one or the other of these abnormalities, more particularly irregular pupils, in patients with tertiary syphilis who present no other evidence of neurosyphilis. It is of importance in the clinical examination of syphilitic patients to realize that isolated pupillary abnormality is not necessarily an expression of an existing neurosyphilitic process. From 30 to 40 per cent. of these patients with isolated pupillary abnormality have a negative spinal fluid. In these instances, if the infection has been untreated, the pupillary symptom is doubtless a scar of a spontaneously cured neurosyphilis.[27] It is not definitely known whether in these cases the spinal fluid again becomes positive and clinical symptoms of neurosyphilis appear. I am inclined to believe, however, that this occurrence is the exception rather than the rule. As a result of treatment of neurosyphilis, the spinal fluid may become negative; but pupillary as well as other neurologic abnormalities may remain indefinitely.

On the other hand, isolated pupillary abnormalities may be a forerunner for a long time of the development of frank symptoms of one or the other form of neurosyphilis. However, in these cases it is thought that the spinal fluid always yields a degree of positive reaction to the different laboratory tests. If the spinal fluid in these instances gives a positive reaction characteristic of that seen in paresis, it is believed that it represents the preparetic stage of paresis. It is this type of case that Southard and Solomon style paresis sine paresi, and it doubtless represents that type of syphilitic patient who, after experiencing a severe head injury such as is seen in Cases 6 and 7 or other precipitating cases of paresis, develops frank symptoms of paresis.

The exact significance, therefore, of an isolated pupillary abnormality in a syphilitic patient cannot be stated definitely unless the spinal fluid is examined.

A syphilitic workman with pupillary abnormalities on the clinical side, and a positive spinal fluid on the laboratory side, is a potential candidate for paresis if he is retained in a position of a hazardous nature in which he may sustain trauma. Such an employee should be given other work.

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[24] Southard, E. E., and Solomon, H. C.: Neurosyphilis, Boston, W. M. Leonard, 1917, p. 309.

[25] White, W. A.: Lecture at Naval War College, 1914.

[26] In 275 cases of neurosyphilis, Lowery and Benedict (Pupillary and Reflex Disturbance in Neurosyphilis, J. Nerv. & Ment. Dis. **52**: 106-111 [Aug.] 1920) found in 70 per cent. of the cases some type of abnormal pupillary reaction: in 50 per cent. a stiff pupil, and in 40 per cent. the Argyll Robertson pupil. Bumke's study, "Die Pupillenstörungen bei Geistes- und Nerven-Krankheiten," Jena, 1911, may also be consulted.

[27] Solomon, H. C., and Klauder, J. V.: Neurosyphilis with Negative Spinal Fluid, J. A. M. A. **77**: 701-706 (Nov. 26) 1921.

When an employee sustains an injury, it should be a routine procedure on the part of the industrial physician to have the Wassermann test made. If positive, antisyphilitic treatment should at once be administered. In this way untoward results of the injury will doubtless be prevented.

If a syphilitic workman has sustained severe head trauma and possibly cerebral injury, prolonged rest with intensive antisyphilitic treatment should be carried out. In this circumstance, the wisdom of performing a lumbar puncture for diagnostic purposes soon after the injury can be questioned in view of the disturbance of the meningeal-choroidal mechanism caused by lumbar puncture. In this way it is possible experimentally to infect the neuraxis from the blood.

1922 Spruce Street.

PROGRESSIVE LIPODYSTROPHY

REPORT OF CASE

AUGUST STRAUCH, M.D.
CHICAGO

The affection described by Simons[1] in 1911 is clinically characterized by a symmetrical atrophy of the subcutaneous fat tissue of the upper parts of the body, beginning insiduously, as a rule, at the age of from 6 to 7 years, and sometimes about puberty or later. It affects at first the face and extends gradually to the neck, chest, upper extremities and upper region of the abdomen or even down to the iliac crests, until after a number of years it becomes stationary. The atrophy may become complete in intensity and impart to the face a repulsive "cadaverous" character; but it may be arrested spontaneously at any stage and locality, remaining, for instance, limited to the face and neck or spreading from here only to the thorax.

It does not extend to the lower parts of the body; within a few years or possibly less after the onset, in most cases, there takes place an abnormal, excessive accumulation of adipose tissue in the gluteal region, on the thighs and also on the rest of the legs; sometimes also in the lower region of the abdomen. Aside from the fat dystrophy there are no objective or subjective symptoms of any concern in cases without complications, and the patients enjoy good health and are able to do ordinary work.

In addition to the extreme and typical forms there exist incomplete cases, those observed by Laignel-Lavastine and Viard and by Cautley. Perhaps these cases are more frequent than is realized, and would be detected if the attention were more generally directed to this anomaly and to the subject of distribution of fat tissue under physiologic and pathologic conditions, and its clinical significance. It is noteworthy that among the twenty-one cases so far reported, only females have been affected, with the exception of two cases in boys reported by Husler and one recently by Klien.[2] In one case of Husler the fat atrophy was limited to the face, and in none was there hypertrophy of fat, so that the classification has been questioned.

In only one case was there regrowth of adipose tissue in the atrophic areas. In Osler's patient the meagerness of the face in a 10 year old girl had somewhat diminished eight years later. In the case reported here, an improvement on the arms during the last year is reported by the patient.

The histologic examination by Simons of skin of the subcutaneous tissue taken from the affected region of his patient revealed the absence of any trace of adipose tissue, and Feer found little fat.

REPORT OF CASE

History.—Mrs. C. S., aged 27, born in this country, had scarlatina, measles, chickenpox and diphtheria, but was otherwise a healthy child of normal body configuration. Her mother, born in a goiter region, of German descent, has a large goiter and is very obese, weighing 220 pounds (99.8 kg.). The sister weighs 125 pounds (56.7 kg.).

Between the ages of 11 and 17, the figure of the patient was rather full, the face "blooming," and the cheeks rosy; she was the picture of health. The lower extremities were then rather stout. The body weight at 17 was 150 pounds (68 kg.), and remained about the same until the age of 19. At this time her face and neck became progressively emaciated, and the rosy color disappeared, though her appetite was very good and she felt well. At 20 also the chest, her arms and the upper part of the abdomen had lost markedly in fulness. On the other hand, the lower part of the body, especially the lower extremities, had lost very little, thereby being so proportionately voluminous that friends commented on the fact. The patient's flesh had always been somewhat sagging, never firm and solid.

Menstruation began at 14, lasted from four to five days, occurred every four weeks, was very scanty, and was sometimes painful. There was no tendency to chilliness; on the contrary, to the touch of others she appeared always warm; the perspiration was perhaps of a lesser degree generally, though occurring profusely on the hands and feet, if she became excited.

A year before I saw her, when the patient married, her body weight was 133 pounds (60 kg.), but had increased since to 149 pounds (67.6 kg.). The increase of adipose tissue involved virtually only the lower part of the body, especially the lower limbs, the arms very little, and the face, neck and upper chest not at all; the mammae grew larger. The patient was sexually frigid.

Physical Examination.—The height was 161.5 cm. (5 feet, 3½ inches). The face was of healthy color, oblong and thin, though not at all haggard; the region of the fossae caninae was somewhat sunken. The scalp was covered with an abundant growth of fine, dark brown hair, of a normal luster. Beneath the chin was a small area in which the panniculus adiposus was well developed; otherwise the whole neck was strikingly lean. The contour of the sternocleidomastoid muscles was obvious; the jugular, supraclavicular and infraclavicular fossae were conspicuous. In the lower portion of the right lobe of the thyroid gland, a hard tumor the size of a walnut was palpable.

On the thorax the panniculus adiposus was very little, and on the upper extremities moderately, developed. The hands were small. The mammae were soft, pendulous and large, owing to well developed glandular tissue; the skin, with the subcutaneous tissue, was thin, flabby, and very mobile.

In striking contrast with the thinness of the upper parts of the body was the enormous development of the adipose tissue from the level of the hips downward, attaining on the nates and thighs almost monstrous proportions. Inspection gave the impression that all the fat had dropped from the upper to the lower portions of the body. The illustrations demonstrate this; especially if one compares the lean arms with the fat legs, or if one alternatingly covers the upper and lower half, one receives the impression that the halves belong to two different individuals. The feet were small; the size of the shoe was 4½. The maximum circumference of the upper arm was 25 cm. (10 inches); elbow, 22 cm. (9 inches); neck, 29.5 cm. (11⅝ inches); the chest at the level of the third rib, 79 cm. (31 inches); the waistline, 63 cm. (24¾ inches); the hips, 90 cm. (35½ inches); at the level of the crurogluteal fold, 100.8 cm. (39⅝ inches); the thigh at the level of the juncture, 63 cm. (24¾ inches; the calf, 42 cm. (16½ inches); the right knee, 45 cm. (17¾ inches); left knee, 41.5 cm. (16⅝ inches); the ankle, 24 cm. (9½ inches). The lower body length was 77.5 cm. (30½ inches); the upper body length, 84 cm. (33 inches); span, 163 cm. (64 3/16 inches). The distance of the shoulders (acromia) was 35.5 cm. (14 inches). The pelvimetric measurements were: 25.5, 29 and 32.5 cm. (10, 11⅜ and 12⅞ inches).

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[1] Simons, A.: Lipodystrophia progressiva, Ztschr. f. ges. Neurol. u. Psychiat. 5: 29-38, 1911; ibid., 1913, pp. 277-397.

[2] Klien, H.: München. med. Wchnschr., 1921, pp. 206-209.

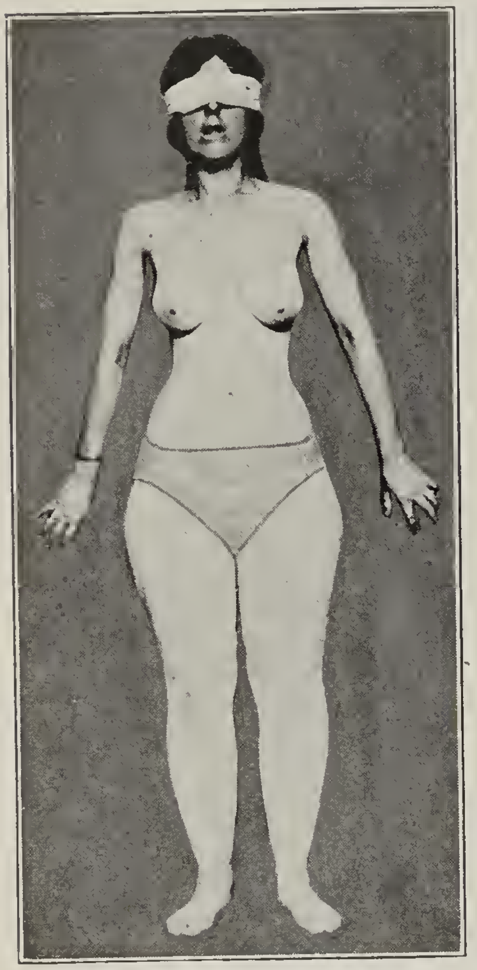

Fig. 1.—Anterior view of patient.

The measures of the thickness of folds of skin and subcutaneous tissue raised at the various areas correspond to the great differences of fat distribution; they are: on the neck anteriorly, 2 mm. (1/12 inch); above the clavicles, 2 mm.; below the clavicles, from 3 to 4 mm. (⅛ to ⅙ inch); over the sternum, 6 mm. (¼ inch); the tissue covering the breasts, from 3 to 4 mm.; in the region of the spinae scapulae and between the scapulae, from 5 to 8 mm. (3/16 to 5/16 inch); the anterior aspect of the upper arms, 10 mm. (⅜ inch); lower part of the abdomen, from 20 to 25 mm. (¾ to 1 inch); anterior aspect of the thigh in its median portion, 95 mm. (3¾ inches); dorsum pedis, 3 mm. (⅛ inch). The fat tissue of the gluteal region, the trochanters and the calves was too abundant or too firm or not sufficiently movable to allow of a correct application of the calipers.

The skin was normal, and showed in some areas of the lower regions of the body the fine lobulations of the underlying fat tissue. The hair of the genitalia and in the axillae was well developed. So were the external genitals. The heart was somewhat enlarged; the uterus, rather small and soft. The muscles and nerves gave no evidence of any disturbance. In the urine there was no albumin or sugar. Circumstances rendered it impossible to test the sugar tolerance or other functions of the endocrine glands. The roentgenologic examination of the head, chest, shoulders, spine, pelvis and femurs revealed no anomalies in the osseous structures.

COMMENT

The diagnosis rests on the history of wasting of the adipose tissue in the upper and its excessive increase in the lower regions of the body, and on the corresponding objective findings. The actual measurements of the patient allow comparison with those reported by other authors. The adipose tissue in the upper part is thereby revealed as considerably reduced, really hypotrophic and atrophic, and in the lower regions much increased, really hypertrophic in comparison with measures obtained in various types of normal women. That the circumference of the waist line and the thigh is the same demonstrates strikingly the anomaly of proportions; likewise the situation of the maximum width of the middle portion of the body at the level below the intertrochanteric line. It is noteworthy that the abundant adiposity of the lower limbs was present early, as in the patients of Laignel-Lavastine and Viard and Cautley, and became more manifest during the last year, when the patient had regained the body weight of nine years before. In the case of Herrman,[3] the only one reported in this country, atrophy began in the face at the age of 6 and spread gradually to the neck, thorax and arms; the hypertrophy of fat in the lower regions did not set in until after the marriage of the patient, at 22.

ETIOLOGY AND PATHOGENESIS

The cause and nature of the affection are obscure. Whether a hereditary factor, adiposity, thinness, lipomatous growths and unusual distribution of fatty tissue in the ancestors plays any rôle is not known. Simons considers the affection as a trophoneurosis, a "sister of muscular dystrophy," the limitation of the fat atrophy to the upper parts of the body militating in his view against the assumption of an endocrine disturbance. The supposition of a derangement of hypophysial function or hyperthyroidism (Feer) fails to explain the clinical picture. Since the disease affects principally women and leads to a localized augmentation of fat tissue at sites normally accentuated in the female sex, some authors believe that a disturbance of the ovaries is the responsible factor in the pathogenesis of the disease. Yet the distribution of adipose tissue in ovarian hypofunction is somewhat different; and the good development of mammae and other sexual characteristics, the normal proportions of the skeleton and likewise the appearance of the atrophy of fat in childhood as the initial symptom argue against this theory. Klien believes in a connection of the atrophic complex with abnormal involutionary processes or other affections of the pineal gland, while the hypertrophic complex observed in the female may be explained by the hormones of the ovaries. The latter not only have an inhibitory effect on the fat tissue in general, but, on the other hand, promote also fat accumulation at the hips and in the gluteal region during puberty and the period of sexual activity as secondary sexual characteristics. Thus one may understand that these accumulations should be especially marked if in lipodystrophy the building material for adipose tissue circulating in the blood is especially abundant on account of its being unavailable for the upper parts of the body. So far no therapeutic measures have proved useful. In the case of Jalowicz, all dietary measures were followed by an augmentation of the fat tissue in the pelvic region only.

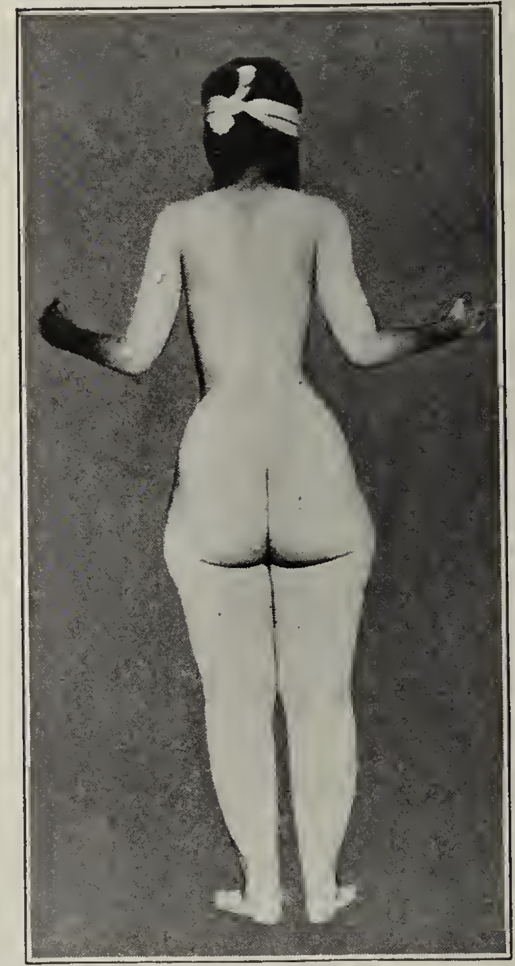

Fig. 2.—Posterior view of patient.

4557 Broadway.

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[3] Herrman, Charles: Progressive Lipodystrophy, Arch. Int. Med. **17**: 516-534 (April) 1916.

CONGENITAL OBSTRUCTION OF THE DUODENUM

REPORT OF CASE

CHARLES H. SCHRODER, M.D.
DULUTH, MINN.

This case of a rare congenital anomaly is of such clinical interest that it will well bear a somewhat detailed report.

REPORT OF CASE

Robert P., a boy, aged 5 weeks, first seen by me, Sept. 4, 1921, was the second child, the first baby having died of cerebral hemorrhage, shortly after birth. His weight at birth was 7½ pounds (3.4 kg.). He had not been breast fed. During the first two weeks he was markedly jaundiced, and this condition still persisted slightly. He had a tendency to vomit after his feedings, but this had not been considered as very marked. His weight progress had not been recorded. His formula at the date of my first visit was: whole milk, 8 ounces (236 c.c.); water, 10 ounces (295 c.c.); dextrimaltose, 1 tablespoon (4 fluidrams, 15 c.c.); five feedings a day, from 3 to 4 ounces (89 to 118 c.c.) at a time. The stools were said to be normal. The present weight was 8 pounds (3.4 kg.). He was very frail in appearance; he was pale, with a yellowish tinge; the superficial veins were marked. The helix of the ear was abnormally long, thin and infolded. There was a decided slant to the eyes, and an epicanthus was present. However, careful examination failed to demonstrate any other evidence of mongolism. The head measured 13⅞ inches (35.5 cm.) in circumference; the chest, 12⅞ inches (33 cm.), and the abdomen, 12½ inches (32 cm.). Examination of the chest was negative. The liver was 2 or 3 cm. (from ¾ inch to 1⅛ inches) below the costal margin; the spleen could not be felt. The epigastrium was prominent, and slight gastric peristaltic waves were noted. An indefinite mass was palpable in the region of the pylorus. Inquiry developed the fact that the patient had vomited forcibly on the morning of this day. He was given atropin, and a slight change in the formula was made.

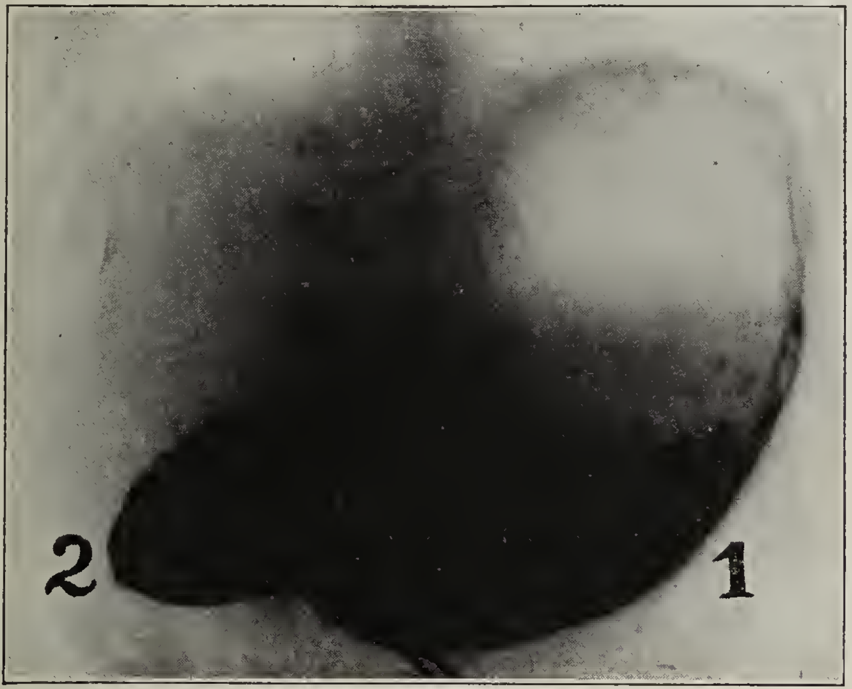

Fig. 1.—Stomach (1) and dilated portion of duodenum (2) partially obscured by stomach, forty minutes after barium meal.

A few days later, when seen again, he was vomiting forcibly after every feeding, and had lost 8 ounces (225 gm.) in weight. There seemed to be no question of the presence of a pyloric tumor at this examination. The formula was changed to a farina paste followed by breast milk. Atropin was continued. His weight continued to drop for a few days and then a satisfactory rise began, the baby gaining 12 ounces (340 gm.) in fifteen days. September 25, the weight was again at 8 pounds (3.4 kg.). However, daily vomiting continued to some extent. Constipation was the rule. The weight continued to rise, and on October 2 was at 8 pounds 8 ounces (3.9 kg.). The general condition of the baby, however, was not satisfactory. The bones of the head were soft, and all sutures were palpable. The abdomen was greatly distended. Gastric peristaltic waves were well marked. A Wassermann test taken at this time was negative; hemoglobin, 102; erythrocytes, 5,120,000; leukocytes, 14,500. The feedings were breast milk and a farina paste made of breast milk.

Following a change to a mother's milk higher in fat content, his condition changed for the worse; vomiting became more frequent and the weight remained at a standstill for two weeks. October 13, it was 8 pounds 7 ounces (3.6 kg.) After this, in spite of the most painstaking care in the feedings, the weight declined until, by October 18, it was back at 8 pounds (3.4 kg.).

Several men saw the baby in consultation, one of whom confirmed the presence of pyloric tumor. This, however, was always somewhat in doubt. Visible peristalsis, however, could be demonstrated without difficulty at almost any time, and typical projectile vomiting was frequent. On this date (October 18) it was felt that the limit of safety without interference had been reached, and the baby was removed to the hospital for a Rammstedt operation.

The operation, under local anesthesia, supplemented by light ether, was performed by Dr. W. A. Coventry. No pyloric tumor was found. The operator did not consider the muscular ring unduly thickened, while the lumen of the pylorus was exaggerated. The duodenum presented a grossly dilated condition, which ended abruptly about at the juncture of the second and third part. Nothing, however, could be found to explain this, and the incision was rapidly closed. The temperature rose to 106 after the operation, but following a sinus injection of dextrose solution the condition improved and immediate recovery was uneventful. But the local condition did not improve. Four-hourly stomach irrigations and tube feedings of breast milk were resorted to. It was soon found that the stomach did not empty, and that after four hours more could be washed from the viscus than had previously been inserted. On one occasion, after thoroughly emptying the stomach, a gush of bile-stained curds followed on turning the baby on its abdomen.

A barium meal was given and a fluoroscopic examination made as soon as possible, in consultation with Dr. L. L. Merriman. This disclosed that the stomach was moderately dilated but emptied promptly, with vigorous peristalsis, through an easily patent pylorus. The duodenum filled up promptly, but did not empty. In forty minutes nothing passed into the jejunum. The end of the duodenum was rounded, and the amount of barium in the duodenum was apparently about half the amount introduced. A diagnosis of obstruction (due perhaps to hernia at the fossa of Treitz) was made, although the diagnosis of congenital diverticulum was also considered.

The weight in spite of intraperitoneal fluid, frequently given, and in spite of transfusion with the father's blood, etc., continued to decline. A jejunostomy was decided on as offering a possibility of building up the baby as a preliminary to a permanent short-circuiting. This was done by Dr. Coventry, and was well borne. However, it was of no avail, as food was not well tolerated. It was surprising to note that the fixation of the jejunum to the abdominal wall seemed to permit the duodenum to empty and it was possible to feed breast milk again by stomach. However, the weight steadily declined, and the fatal ending came, November 8, at the age of 14 weeks.

The necropsy, performed by Dr. Benjamin F. Davis, disclosed the stomach one-third larger than normal, and its walls between 4 and 5 mm. (about 3/16 inch) in thickness. The pylorus was patent and admitted the first joint of the index finger readily. The pyloric sphincter was moderately hypertrophic. The duodenum immediately beyond the pyloric sphincter was enormously dilated in the first portion, the dilation ceasing abruptly 1 cm. (⅜ inch) proximal to the ampulla of Vater. Here the lumen of the bowel was reduced to an oval opening (2 by 3 mm. [1/12 by ⅛ inch] in diameter) by a diaphragm of mucous membrane 1.5 mm. (1/37 inch) in thickness. Distal to this diaphragm the duodenum was normal. The dilated portion of the duodenum was nearly spherical, and measured 5.5 cm. (2⅛ inches) in its greatest diameter. The wall of this dilated sac was definitely hypertrophied to about one-half the thickness of the thickened stomach wall. There were no anomalies of the bile ducts. Histologic examination of this diaphragm revealed that it contained all the coats of the bowel wall.

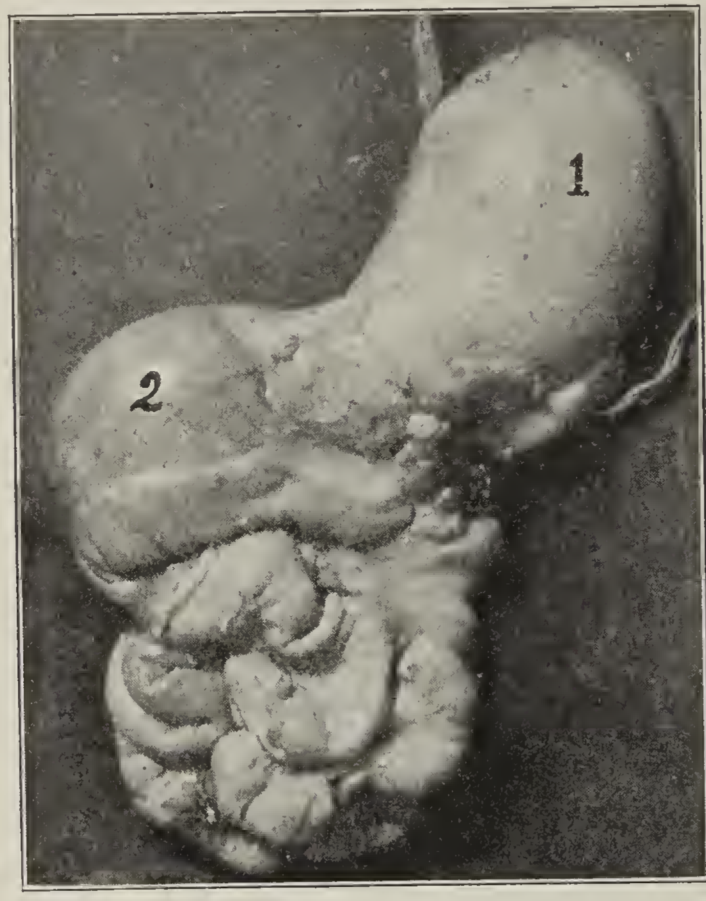

Fig. 2.—Stomach (1) and dilated portion of duodenum (2).

The illustrations, for which I am indebted to Dr. L. L. Merriman, give an accurate idea of the pathologic findings. Figure 1 hardly portrays the fluoroscopic picture as described, for the reason that the duodenum has regurgitated part of the barium and is also partly obscured behind the stomach.

COMMENT

The credit of reporting the first case of congenital duodenal obstruction probably belongs to Calder, with his case report of 1752. Although this subject has attracted the interest of many able writers, Cautley,[1] in the latest compilation I have seen (1919), estimates the number of reported cases as only about 100. Cordes [2] reviews the earlier literature, and his case (reported in 1901) was interesting in that there existed, besides atresia of the duodenum, an anomaly of the common bile duct, a branch of which entered the dilated sac above the atresia. Most of the discussion in the various papers concerns itself with the postmortem findings. The defect is usually in the neighborhood of the papilla of Vater, most often slightly above it, sometimes opposite, and occasionally below. A less common site of obstruction is at the duodenojejunal juncture. Atresia is more frequent than stenosis. Death usually occurs in the first ten days. Buchanan reports a case, similar to mine, with a partial duodenal septum (aperture, 2.5 mm. [3/32 inch]) in a child that lived eighteen months. Those cases in which the obstruction is due to a complete or perforated diaphragm which contains the usual coats of bowel wall are rare. It is more usual to find an upper segment ending blindly and connected by a band of varying thickness with the lower segment. Rarely this connection is by mesentery only.

Cockayne [3] reports a rare case with complete interruption in continuity of the two portions. Little and Helmholz's [4] case (occurring with a complete situs transversus) is unique in that there was complete absence of the pylorus and duodenum as far as the papilla of Vater.

In stenosis, the length and degree are variable. Cautley's patient lived between twelve and thirteen months, although the stenosed second part of the duodenum admitted only a probe.

In regard to etiology, recent writers accept the idea of a primary developmental defect. This was suggested by Bland Sutton in 1889. He stressed the importance of the observation that malformations occur at the sites of "embryological events." Thus, liver and pancreas appear as outgrowths from the primitive duodenum, and it is conceivable that an excess of closure might occur. Cordes suggests that the malformation in some way may be bound up with defective formation of the common duct. A common site of intestinal atresia also is in the ileum, either at the ileocecal juncture or at Meckel's diverticulum. This idea of Bland Sutton's, while failing to explain a minority of cases, is strongly supported by the work of Tandler [5] and Ager.[6] Tandler showed that the duodenum, in its vaterian segment, is completely occluded by epithelial proliferation during the second month of fetal life, and atresia may be due to failure of this obstruction to break down. It would be conceivable that the multiple occlusions described could thus occur, or that stenosis could result from a partial canalization. Ager also states that in embryos of 12 mm. (15/32 inch, fifth week) the duodenal lumen is temporarily obliterated.

Various other suggestions have been made, mostly unsupported. Volvulus with secondary peritonitis, primary syphilitic or tuberculous peritonitis, embolism of the superior mesenteric artery, or circulatory changes due to disease or to congenital absence of normal vessels have all been suggested as etiologic factors. The case of Little and Helmholz (the only one of its type, I believe, on record), indeed, presented marked vascular anomalies, but was a very unusual case in many respects.

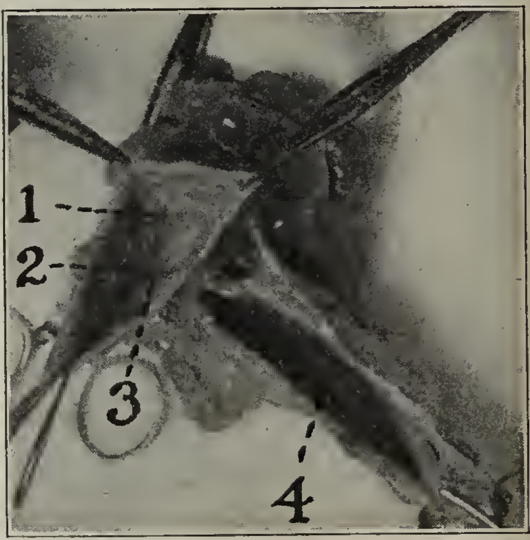

Fig. 3.—1, obstruction of duodenum; 2, dilated portion of duodenum; 3, pylorus; 4, stomach.

Clinically, of course, interest centers in diagnosis and treatment. The confusing thing in most case reports is the differential diagnosis from pyloric stenosis. Forcible vomiting, gastric peristaltic waves, presence in the stomach of the entire previous feeding, and absence of milk stools will occur in both conditions. Bile in the vomitus may be absent in duodenal obstruction if the obstruction is above the duct (as usually occurs). A tumor may be felt in both conditions, the dilated and hypertrophied muscle in the ring and wall giving the sensation. This was my experience, and Cautley and others speak of it also.

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[1] Cautley, E. Brit. J. Child Dis. **16**: 65 (April-June) 1919.

[2] Cordes: Arch. Pediat. **17**: 401, 1901.

[3] Cockayne, E. A.: Brit. J. Child. Dis. **14**: 188 (July-Sept.) 1917.

[4] Little and Helmholz: Bull. Johns Hopkins Hosp. **16**, No. 172, 1905.

[5] Tandler: Anat. Anz. **18**: 42, 1900.

[6] Ager: Arch. Pediat. **27**: 135, 1910.

But if the precaution is taken of using the barium meal and fluoroscope to supplement the clinical findings, an early diagnosis becomes possible, and timely operation will save some of these infants. I think that at present there are only one or two successful operations on record (the case of Abel's in an 8 weeks old child and the case of Ernst's in a 10 days old child). There may be more recent successes that I have not come across. An early gastro-enterostomy is the operation of choice, although Ernst succeeded with a duodeno-entero-anastomosis, the ideal operation, if possible. The fixation of the duodenum makes it a difficult proceeding, especially in the infant. In this case the diagnosis could not be made from external inspection of the bowel at the time of the first operation. The jejunostomy was a logical procedure for temporary purposes, and would have been of great benefit in an older child. Probably leakage from the wound contributed to the poor result. Had the diagnosis been made before the first operation, the chance for success with a gastro-enterostomy would have been fair.

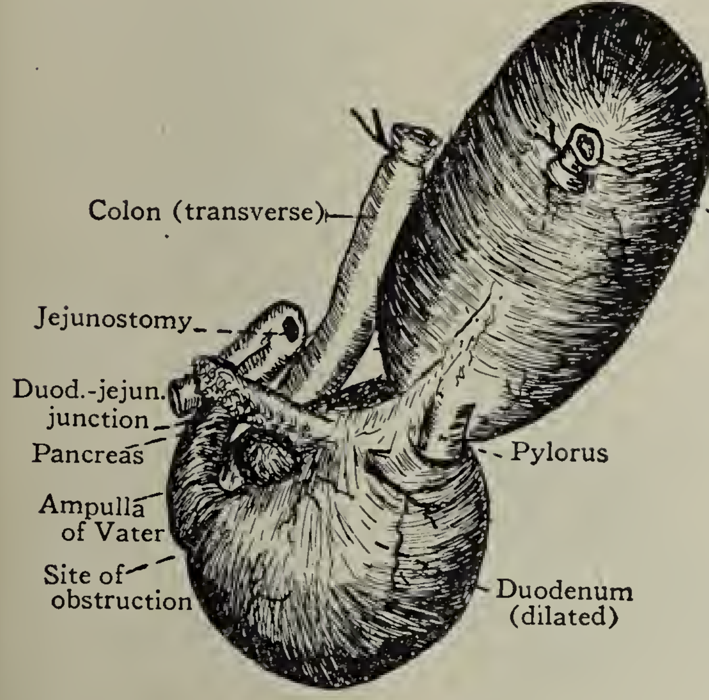

Fig. 4.—Posterior aspect of stomach and duodenum, showing relative size of duodenum proximal and distal to obstruction.

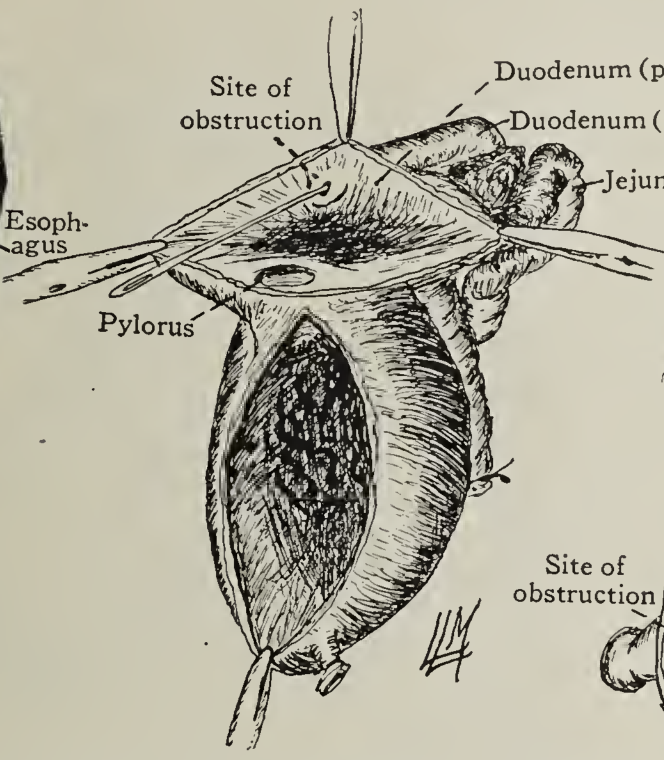

Fig. 5.—Anterior aspect of stomach and duodenum. The probe passes through the small orifice in the obstructing membrane.

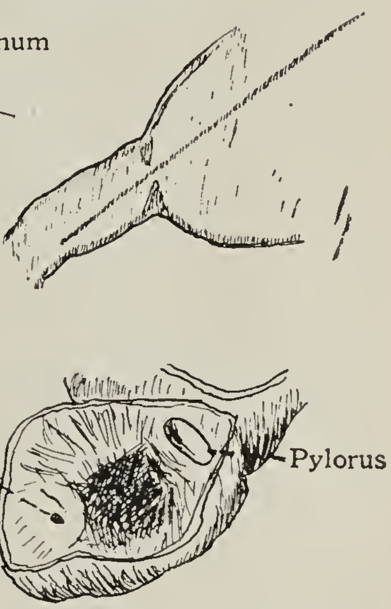

Fig. 6.—Above, transillumination of site of obstruction, with probe in situ; below, relative size of pylorus and orifice at site of obstruction.

Typhus in Russia.—Data received from Russia indicate an increase of typhus, particularly marked in the northeastern and northern parts of the country. Similar important increases are noted in all governments in the Ural region and in Petrograd and Moscow relapsing fever is increasing markedly, particularly in the Ural region, where 3,493 cases were reported during the first two weeks of November. In the same region 2,200 cases of enteric fever were reported in November, although some of these may be due to confusion with typhus. For the week ending December 3, 195 cases of typhus were reported in Moscow, seventy-three in Petrograd and 590 cases in Perm.—*Bull. League of Nations Health Section.*

A NEW METHOD FOR THE DETERMINATION OF CALCIUM AND THROMBIN IN SERUM *

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Assisted by John Bauer and Kathryn Barnickol
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Many methods have been put forth, some simple and some very elaborate, to give correct coagulation time. They are all so untrustworthy that most clinical workers are content to take the coagulation time of 5 or 6 c.c. of blood, withdrawn in a Keidal tube, and compared with the mean time of normals taken under the same conditions.

When one has decided that a coagulation time is too slow, one does not know which factor is at fault. Three factors are involved—serum calcium, prothrombin and fibrinogen. Heretofore, the estimation of serum calcium could be made only chemically, a long and tedious proposition. The result was total calcium, i. e., ionizable and nonionizable, so that one was really no wiser than before; for a total calcium may be normal with a subnormal ionizable or available calcium. Nor have we any accurate method of determination of either thrombin or its precursor.

It is the purpose here to advance a method of determination of available calcium in fresh serum, and at the same time to express in terms of calcium the amount of thrombin present. It will readily be seen that the calcium determination is accurate, simple and rapid, involving no calculations and using only the plasma centrifuged from the citrated blood taken for the Wassermann work, and calcium controls. Thrombin, of course, depends on two factors, available calcium and prothrombin. If, then, a thrombin result is low when the calcium is normal, it follows that prothrombin is deficient. If both are normal and still the coagulation time is slow and the clot weak, fibrinogen must have been deficient.

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* From the Laboratories of the Howard A. Kelly Hospital.

METHOD

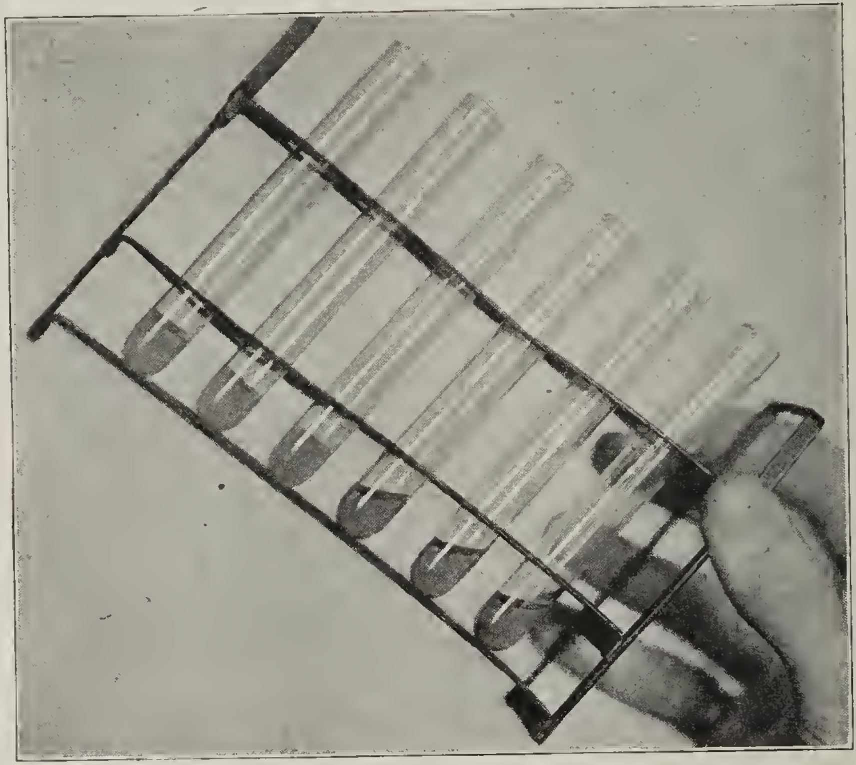
Reagents.—1. Citrated plasma. Sheep's blood is used in all our work. A bottle is half filled with 2.38 per cent. sodium citrate, i. e., a tenth normal solution, and filled up with blood at the abattoir. This is then centrifuged, and the plasma is pipetted off and kept in an icebox for this test. The cells are washed and kept for the Wassermann work. The plasma should be fairly free from hemolysis and can be used for a week if kept cold.

2. Fiftieth normal calcium chlorid solution, i. e., a solution containing 0.219 mg. of calcium chlorid per hundred cubic centimeters of water. This is made from chemically pure calcium chlorid crystallized with six molecules of water.

Crystalline calcium chlorid, being deliquescent, is usually covered with a liquid layer. In our work this is removed, the stoppered bottle allowed to stand in hot water until the contents are melted, cooled, and, just before crystallization, pipetted out and weighed in a beaker. This obviates tedious drying of crystals, to say nothing of the difficulty of digging out the crystalline mass.

3. Standard calcium chlorid solutions, containing 5, 7, 9, 11, 13, 15, 17, 19 and 21 mg. of calcium element per cent. Five and four hundred and seventy-five thousandths grams of $CaCl_2.6H_2O$ in 1 liter of water contains 100 mg. of calcium element per cent. The foregoing dilutions are made from this standard solution.

4. Patient's serum. Blood is taken as for the Wassermann test. Clots should be allowed to stand at least one hour before the serum is separated, and it is much more accurate to separate all serums after the same interval of time. We prefer a two hour period after clotting. The serum is removed and one portion kept unheated for the thrombin factor; the other portion is heated for thirty minutes at 58 C. to destroy the thrombin. This heated material is used for the calcium determination. Raising to 58 C. does not affect the clotting power of ionizable calcium.



Method of observing degree of coagulation during test.

Preliminary Test.—Serum calcium is too low in concentration to coagulate plasma containing the foregoing amount of citrate. This difficulty is overcome by adding calcium chlorid to the plasma until the coagulation point is approached. The best results are obtained when the treated plasma will not coagulate for several hours. A preliminary test to determine the quantity of fiftieth normal calcium chlorid required to produce coagulation in the plasma in thirty minutes without the addition of any serum calcium is set up as in Table 1, using small test tubes such as are used for Wassermann work.

TABLE 1.—PRELIMINARY TEST *

Tube	N/50 $CaCl_2$ C.c.	Plasma, C.c.	Coagulation Time at Room Temperature 5′	10′	15′	20′	25′	30′
1	0.1	0.5	...	...	...	...	—	—
2	0.2	0.5	...	...	...	...	—	2+
3	0.2	0.5	...	...	...	...	2+	3+
4	0.4	0.5	...	...	...	2+	3+	
5	0.5	0.5	...	...	2+	3+		

* In the tables, + indicates weak jell; 2+ (++) fair clot; 3+ (+++) firm clot (can be inverted).

In this sample test 0.3 c.c. added to 0.5 c.c. of plasma coagulates in thirty minutes. This is too fast a system. Tube 2, with 0.2 c.c., will give the ideal system. Immediately before the actual test, a calcium treated plasma is prepared by adding 0.2 c.c. of fiftieth normal calcium chlorid to each 0.5 c.c. of the original plasma used. Thus, to 10 c.c. of plasma, 4 c.c. of fiftieth normal calcium chlorid is added and mixed thoroughly. These figures, of course, apply only to the foregoing case in which 0.2 c.c. of calcium chlorid produces no coagulation in thirty minutes.

Technic of Test.—Into consecutive test tubes are introduced 0.5 c.c. of 5, 7, 9, 11, 13, 15, 17, 19 and 21 mg. per cent. of calcium chlorid. This requires nine tubes. If the same pipet is used, it is essential to proceed from the weak dilution to the strong. Into Tube 10 is introduced 0.5 c.c. of the patient's serum unheated, and into Tube 11, 0.5 c.c. of the heated serum. At this point the requisite amount of calcium chlorid, as determined by the preliminary test, is added to 10 c.c. of the plasma and thoroughly mixed. Into all the tubes, 0.5 c.c. of the treated plasma is introduced rapidly and mixed with a whirling motion so as to avoid the formation of bubbles. The tubes are kept at room temperature, and the coagulation time of each tube is noted. (The coagulation times of the calcium dilutions will usually be from three to six minutes apart.) The extent of clotting is described by one, two or three plus signs. Unnecessary handling is avoided and the individual tubes are not touched. The whole rack is tilted for each reading. This insures equal treatment to all uncoagulated tubes.

Readings should be taken every few minutes until the last serum tube is coagulated. The 21 mg. per cent. of calcium chlorid should be coagulated in about ten minutes. Any great variation from this time means that too much or too little calcium chlorid was added to the plasma before the test.

Interpretation of Readings.—It will readily be seen that two tubes with the same coagulation time contain the same amount of calcium, if calcium is the only clotting agent present. Thus, if the coagulation time of the heated serum coincides with the 9 mg. per cent. calcium tube, it necessarily contains 9 mg. per cent. of calcium, as any thrombin which it had was destroyed by heat. If the coagulation time falls half way between 7 and 9 mg. per cent., the serum contains 8 mg. per cent. of calcium. Thus, the calcium content is read directly. Again, if the unheated serum coagulates with the 19 mg. per cent. calcium tube, it contains the clotting equivalent of 19 mg. per cent. of calcium. But if we know from the heated serum tube that it contains only 9 mg. per cent. of calcium, by simple subtraction we can state that its thrombin content is equivalent to $19-9=10$ mg. per cent. of calcium.

This may not be an absolutely logical method of expressing thrombin value, but it gives us a definite figure and consequently comparative values.

The method of recording results is illustrated in the cases presented in Table 2. These particular cases were chosen to illustrate the three types of cases, namely, normal, low calcium and low thrombin.

COMMENT

In a series of normal cases, we found that the average normal figure is from 9 to 10 mg. per cent. for calcium and about 20 mg. per cent. for calcium and thrombin. Subtracting the calcium, we have a figure of from 10 to 11 for thrombin. We do not presume to interpret results at this stage or to say what the high and low limits may be, but very little variation from these figures is found in the normal cases so far worked out. We hope, with the collaboration of other workers, that exact limits will be defined and the interpretation of results put on a sound basis. This method opens a way to test results of feeding calcium, and also to find the calcium variations in different pathologic conditions. When any of the commercial thrombin preparations are used, it affords a method of comparing their actual values in vivo.

TABLE 2.—EXAMPLES OF CASES

Case 1, normal.

Tube	CaCl₂		Serum	Plasma,	Coagulation Time								
	C.c.	Mg.%		C.c.	12′	15′	18′	21′	24′	27′	30′	33′	36′
1	0.5	5	Nil	0.5	...	...	...	...	...	...	...	...	2+
2	0.5	7	Nil	0.5	...	...	...	...	...	...	...	2+	3+
3	0.5	9	Nil	0.5	...	...	...	...	...	...	2+	3+	
4	0.5	11	Nil	0.5	...	...	...	...	...	2+	3+		
5	0.5	13	Nil	0.5	...	...	...	...	2+	3+			
6	0.5	15	Nil	0.5	...	...	...	2+	3+				
7	0.5	17	Nil	0.5	...	...	2+	3+					
8	0.5	19	Nil	0.5	...	2+	3+						
9	0.5	21	Nil	0.5	2+	3+							
10	Nil		0.5 c.c. (heated)	0.5	...	...	...	...	...	...	2+	3+	
11	Nil		0.5 c.c. (unheated)	0.5	2+	3+							

Calcium content (heated). 9 mg. %.
Thrombin content (unheated — heated), 21 — 9 = 11 mg. %.

Case 2 thrombin shortage (purpura hemorrhagica).

Tube	CaCl₂		Serum	Plasma,	Coagulation Time						
	C.c.	Mg.%		C c	8′	12′	16′	20′	24′	28′	32′
1	0.5	5	Nil	0.5	...	...	...	...	...	...	...
2	0.5	7	Nil	0.5	...	...	...	...	...	...	+
3	0.5	9	Nil	0.5	...	...	...	...	...	+	3+
4	0.5	11	Nil	0.5	...	...	...	...	+	3+	
5	0 5	13	Nil	0.5	...	...	..	+	3+		
6	0.5	15	Nil	0.5	...	...	+	3+			
7	0.5	17	Nil	0.5	...	+	3+				
8	0.5	19	Nil	0.5	+	3+					
9	0.5	21	Nil	0.5	3+						
10	Nil		0.5 c.c. (heated)	0.5	...	...	...	...	+?	2+	3+
11	Nil		0.5 c.c. (unheated)	0.5	...	...	+	3+			

Calcium content (heated), 10 mg. %.
Thrombin content (unheated — heated), 15 — 10 = 5 mg. %.

Case 3. calcium shortage (neurotic patient, hypersensitive).

Tube	CaCl₂		Serum	Plasma,	Coagulation Time								
	C.c.	Mg.%		C.c.	10′	14′	18′	22′	26′	30′	34′	28′	42′
1	0.5	5	Nil	0.5	...	...	...	...	...	...	...	2+	3+
2	0.5	7	Nil	0.5	...	...	...	...	...	...	2+	3+	
3	0.5	9	Nil	0.5	...	...	...	...	...	2+	3+		
4	0.5	11	Nil	0.5	...	...	...	...	2+	3+			
5	0.5	13	Nil	0.5	...	...	...	2+	3+				
6	0.5	15	Nil	0.5	...	...	2+	3+					
7	0.5	17	Nil	0.5	...	2+	3+						
8	0.5	19	Nil	0.5	2+	3+							
9	0.5	21	Nil	0.5	3+								
10	Nil		0.5 c.c. (heated)	0.5	...	...	...	...	...	...	...	2+	3+
11	Nil		0.5 c.c. (unheated)	0.5	...	2+	3+						

Calcium content (heated), 5 mg. %.
Thrombin content (unheated — heated), 17 — 5 = 12 mg. %.

Chemical calcium determinations were made by one of us (Bauer), and were found to parallel our ionizable calcium figures closely in the normal cases. Halverson and Bergeim's [1] modification of the McCrudden method was used. In all cases the chemical analyses yielded higher results than the coagulation method. We are inclined to place the available calcium as from 70 to 75 per cent. of the total in normal cases. Von Meysenbug, Pappenheimer, Zucker and Murray [2] give a figure of from 60 to 70 per cent. for their diffusion method. The colloidal calcium may be obtained from the chemical and the coagulation figures by subtraction, e. g.:

	Chemical Ca (Total)	—	Ionizable Ca	=	Colloidal Ca
Normal............	12.4 mg. %	—	9 mg. %	=	3.4 mg. %
Asthmatic.........	13.4 mg. %	—	7 mg. %	=	6.4 mg. %

SUMMARY

A new clinical test gives definite and accurate figures on the coagulation factors, ionizable calcium and thrombin.

The amount of serum required is 1 c.c. The blood is taken as for the Wassermann test.

The test involves no calculations, and the technic is very simple, requiring no special apparatus, and calling for no chemical procedures.

The time required for a serum calcium determination, with titrated plasma on hand, is approximately one hour.

1418 Eutaw Place.

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[1] Halverson, J. O., and Bergeim, Olaf: J. Biol. Chem. **32**: 159 (Nov.) 1917.

[2] Von Meysenbug, L.; Pappenheimer, A. M.; Zucker, T. F., and Murray, Marjorie, F.: J. Biol. Chem. **47**: 529 (Aug.) 1921.

CHRONIC OSTEO-ARTHROPATHY

REPORT OF A CASE IN A CHILD AGED TWENTY-EIGHT MONTHS

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AND
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Since Marie [1] described the disease now known as chronic pulmonary osteo-arthropathy, additional cases have been frequently reported. However, comparatively few of these reports appear with roentgenograms, and sufficient evidence of their being true cases of osteo-arthropathy is lacking in many cases.

The name "chronic hypertrophic pulmonary osteo-arthropathy" is a cumbersome one and, as has been pointed out by several writers, and as is borne out by the case here reported, is a misnomer. Although all early cases reported appeared as secondary to a chronic pulmonary disease, notably in tuberculosis, bronchiectasis and empyema, it has since been found that the same changes, i. e., clubbing of the fingers and toes, together with the bone changes, sometimes occur when there is no demonstrable disease of the lungs or pleura. Thayer compiled forty-three instances secondary to lung disease and twelve to other causes. Congenital heart disease,[2] chronic valvular heart disease, cystitis, pyelonephritis, syphilis and other diseases have been reported as the primary disease.[3] Brooks,[4] however, in a study of these reports, does not consider these typical cases.

There can be no doubt that suppuration is not necessary to be present as a cause. Unquestionable cases have been reported as occurring with neoplasms of the lungs. The view now generally accepted is that the clubbing of the fingers and toes, together with the bone changes occurring at the distal ends of the long bones, is due to a long-standing passive hyperemia or a venous stasis, and not as a result of the absorption of toxins from a chronic suppurative process. The changes noted are where one would expect them if due to a passive congestion, namely, the distal ends of the extremities; the more marked the congestion, the more proximally the changes extend. Pulmonary tuberculosis or lung abscess does cause circulatory changes, while chronic heart disease or a sarcoma of the lung are not suppurative. It is also noted that many cases show a thickening of the subcutaneous tissues of the malar regions probably of a similar etiology to that of club fingers.

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[1] Marie: Rev. de méd. **10**: 1, 1890.

[2] Shaw and Cooper: Lancet **1**: 880, 1907.

[3] Miller: Arch. Pediat. **22**: 161, 1905.

[4] Brooks: New York M. J. **98**: 608, 1913.

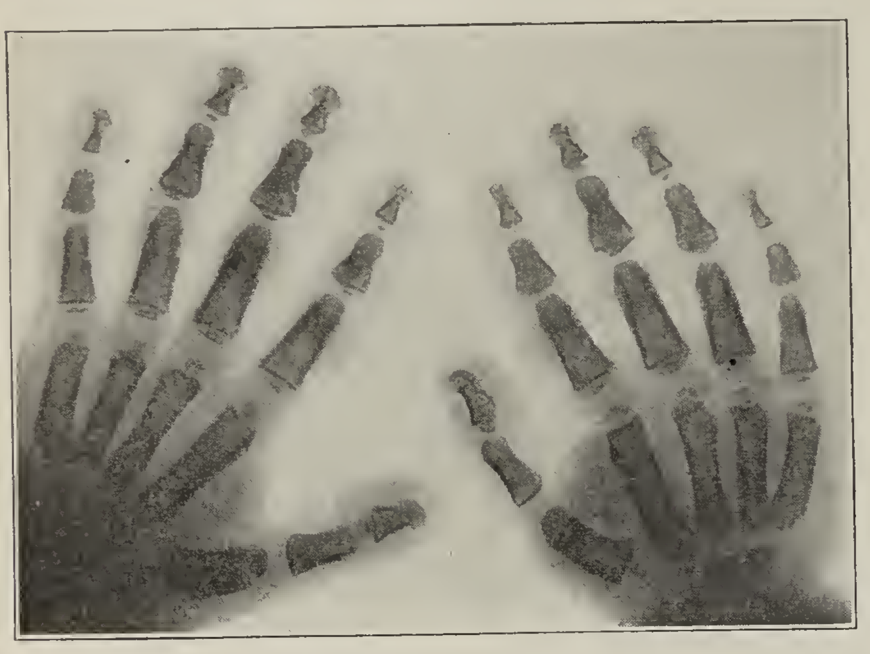

Fig. 1.—Burrlike expansion of tips of distal phalanges of fingers. Periosteal thickening of proximal phalanges and metacarpals. The flesh shadows show typical clubbing of the fingers. An identical condition was present in the roentgenogram of the feet.

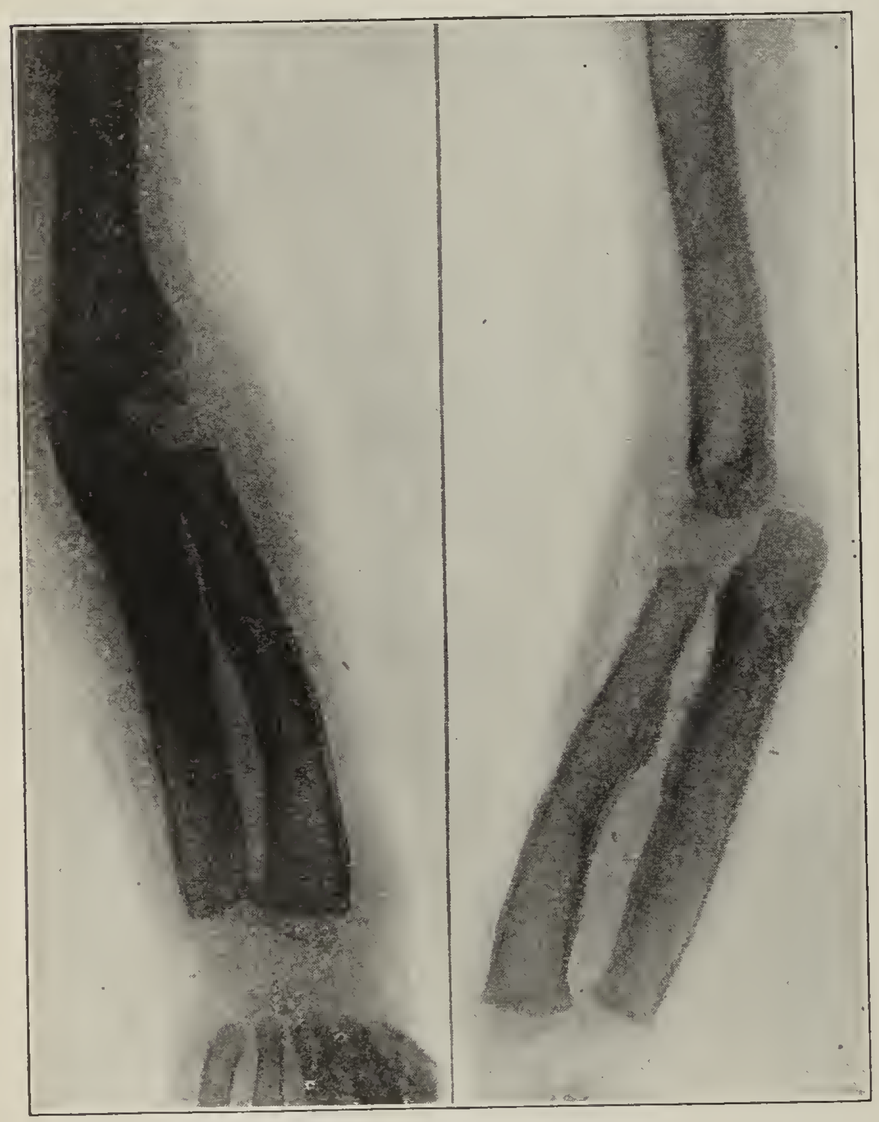

Fig. 2.—Marked periosteal thickening of radius and ulna; absence of thickening at upper end of humeri.

The age of the patient appears to have an important influence. Periosteal reactions are more easily stimulated in a child, and the cases reported in which there has been marked bone changes have been in children.

Janeway [5] and Locke [6] recognize different stages of the disease, and consider clubbing of the fingers and toes with no bone changes the same process but occurring at an early stage. This stage may not necessarily proceed to later stages. Contrary to the prevailing opinion, Locke finds changes by roentgenogram in the distal phalanges which he describes as a burr-like expansion. Baetjer and Waters describe the changes as a periostitis with the calcified periosteum raised, with a clear space between it and the bone. Locke, however, adds that later the line of demarcation of old and new bone may not be present, and that the bone may be enormously thickened. In the later stages there may be a thickening of the periarticular tissues, the presence of an effusion and erosion of the cartilage causing the joint symptoms of swelling, pain and stiffness.

The case here reported is of interest because of the age of the patient, the extent of the bone involvement, and the absence of any physical or laboratory findings that would indicate the presence of a primary disease. Neither do former observations nor past history account for the findings. The only clue found was that on both physical and roentgenographic examination the heart was found to be definitely enlarged.

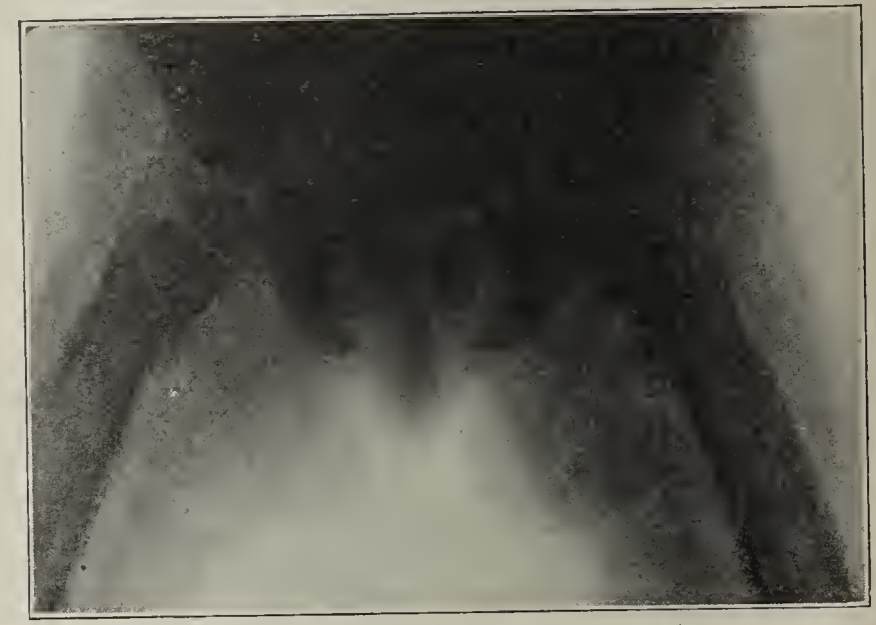

Fig. 3.—Marked thickening of femurs; no pathologic condition in pelvis.

No attempt at an exhaustive review of the literature has been made. The few most important references quoted are representative of the various discussions.

REPORT OF CASE

L. B., a girl, aged 28 months, whose family history was negative and whose mother had had no miscarriages, was normal at birth. She was breast fed eight months, and then fed on a Mellin's food formula until 1 year old, when cereals and whole milk were started. Teeth appeared at 6 months, and she apparently developed normally except that she was slow in learning to talk and walk. There was no history of any bone or joint tenderness, stomatitis or bleeding. She began walking at 19 months, and when 22 months old was taken to the Mount Sinai Hospital outpatient department. At that time enlarged wrists, rosary and open fontanel were noted, and a diagnosis of rickets was made. Nothing abnormal was detected in the heart. Orange juice and a general correction of the diet were prescribed. The Wassermann test was negative. There was no change noted in her condition until June, 1921, when she was accidentally burned and was admitted to the hospital. At that time clubbed fingers were noted, a roentgenogram of which did not disclose any pathologic condition of the bone in the phalanges or metacarpals. In July the diagnosis of rickets was reaffirmed, and the child was sent to Rainbow Hospital for the advantages of fresh air and sunlight. A careful search was made to find some condition present that would account for the clubbed fingers and toes. A definite enlargement of the heart was confirmed by several observers. The right border of dulness was 1.5 cm., the left border, 9 cm. from the midline. No murmur was definitely made out, and no thrill. Repeated examination failed to disclose cyanosis on crying or at any other time. The lungs were clear to percussion and auscultation. Roentgen-ray examination confirmed enlargement of the heart. The Wassermann test was negative. There was no general glandular enlargement, no scars about the mouth or any other clinical evidence of syphilis. The most remarkable thing on examination of the extremities was the marked thickening of all the long bones and the clubbed fingers and toes.

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[5] Janeway: Am. J. M. Sc. **126**: 563, 1903.

[6] Locke, E. A.: Secondary Hypertrophic Osteo-Arthropathy and Its Relation to Simple Club-Fingers, Arch. Int. Med. **15**: 659 (May) 1915.

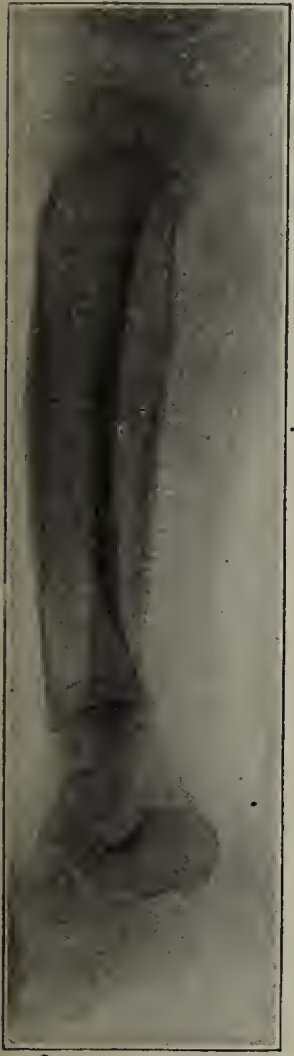

Fig. 4.—Extensive periosteal reaction of shafts of tibia and fibula. The epiphyses are not flaring or saucer shaped. The tarsal bones show normal development. Line of increased density just above lower epiphysis.

DIFFERENTIAL DIAGNOSIS

Congenital syphilis may be ruled out by the absence of any suggestive family or past history, two negative Wassermann tests, and the absence of any clinical evidence of syphilis. One would not expect the extensive thickening of the shafts of the long bones as due to rickets when the appearance of the epiphyses is not that of rickets. In many respects the roentgenographic appearance was similar to that of infantile scurvy, particularly a suggestive Trümmer zone at the lower ends of the tibiae. Scurvy, however, will not explain the clubbed fingers and toes, and the bone changes of the metacarpals and distal phalanges in this case. A careful history revealed nothing even suggestive of there being a scurvy present during the first twenty-two months of life, and from that time on the diet of the child has been under constant supervision. It is likely that the line of increased density just above the epiphysis of the lower end of each tibia is due to some metabolic disturbance other than scurvy. Of interest is the fact that the periosteal thickening in the phalanges and metacarpals took place during the last four months of observation. Good roentgenograms of both hands four months before were negative.

821 Schofield Building—Rainbow Hospital.

Fees Based on Patient's Income.—The collection of professional fees consistent with the income of the patient is not at the pleasure of any physician whose privilege it may be to attend such a case. The freedom to make such a just charge must reside within the physician himself. It is not so much the service rendered as the position of the physician who renders it, his reputation, his experience, his age, his availability, in other words his inherent power to back up this charge.—P. J. Flagg, *Hosp. Prog.* **3**:143 (April) 1922.

THE TREATMENT OF LUPUS VULGARIS WITH SOLUTION OF MERCURIC NITRATE *

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CHICAGO

The many methods of treatment that have been advocated for lupus vulgaris testify to the peculiar stubbornness of this disorder. Fortunately, it is rather rare in this country, whereas the large number of sufferers in continental countries has resulted in the development of special lupus institutes. On account of the lack of a true Finsen light apparatus in this country, many patients have gone to London or Copenhagen to get the benefit of the Finsen treatment. Undoubtedly the latter gives the most perfect cosmetic results, but the treatment is prolonged and time-consuming, and is impracticable in extensive cases of lupus involving the nose and adjacent tissues and in ulcerated lesions. Tuberculin as an adjunct to the therapy of tuberculosis of the skin has not come up to expectations.

Regarding the value of roentgen-ray therapy, MacKee[1] has given us a conservative estimate. The results in the hypertrophic and ulcerated types are excellent, but the common atrophic type is exceedingly resistant, especially in the older eruptions with deep-seated nodules. Furthermore, the prolonged use of the roentgen ray favors the development of epithelioma in the lupus scar. I have seen a very malignant type of epithelioma develop in a woman, aged 24, who had been irradiated for two years for lupus of the face. A severe roentgen-ray reaction should always

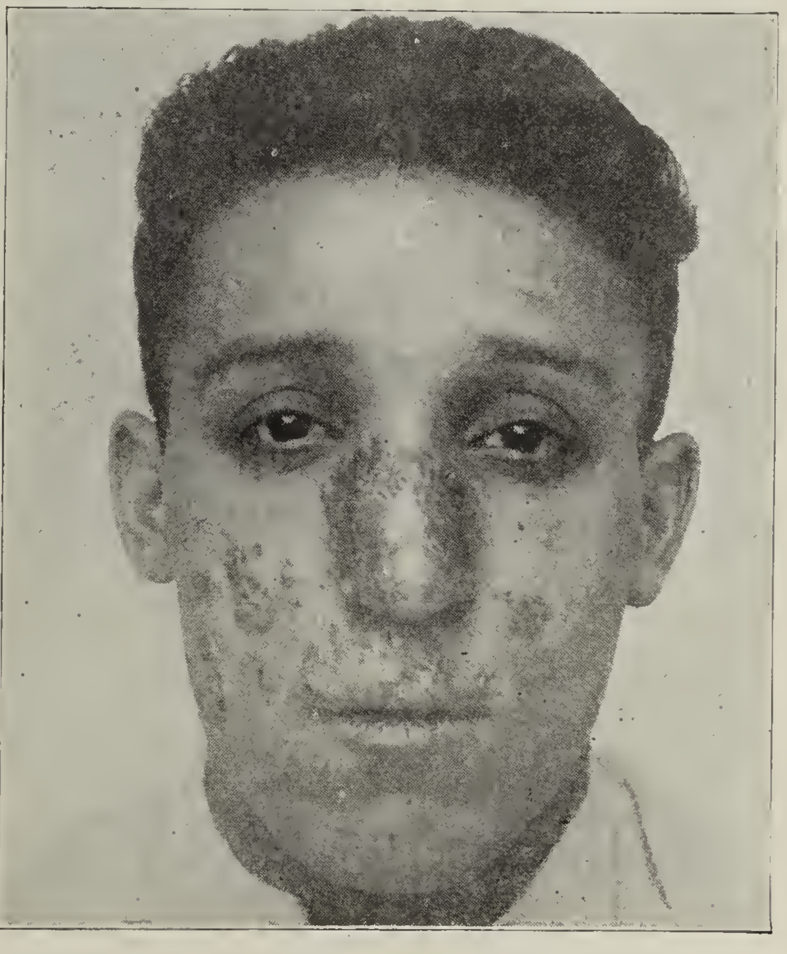

Fig. 1.—Appearance of patient on admission to the hospital.

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* From the department of dermatology, Northwestern University Medical School, and the skin and venereal service, Cook County Hospital.

[1] MacKee: X-Rays and Radium in the Treatment of Diseases of the Skin, 1921, p. 443.

be avoided and other methods instituted if improvement has not taken place. The effect of radium has been favorably commented on by a number of observers, but it has the same potential dangers as the roentgen ray, namely, subsequent atrophy and telangiectasia. The so-called selective caustics used alone or preceded by curettage have been used for many years by dermatologists. Heidingsfeld [2] reported favorably on the use of trichloracetic acid. To Adamson [3] of England belongs the credit for advocating the use of the solution of acid nitrate of mercury (Solution of Mercuric Nitrate, N. F., liquor hydrargyri nitratis) in the treatment of lupus vulgaris. After using such caustics as zinc chlorid and pyrogallic acid for many years, he found solution of mercuric nitrate superior in efficacy and rapidity of action to all other caustics. During the last year I have been able to corroborate Adamson's findings in six cases of long standing lupus. These had all received preliminary roentgen-ray therapy (usually ½ skin unit every two weeks for three or four doses) without definite improvement, and a successful result was obtained only after applying solution of mercuric nitrate to the individual lesions. The most striking case was the following:

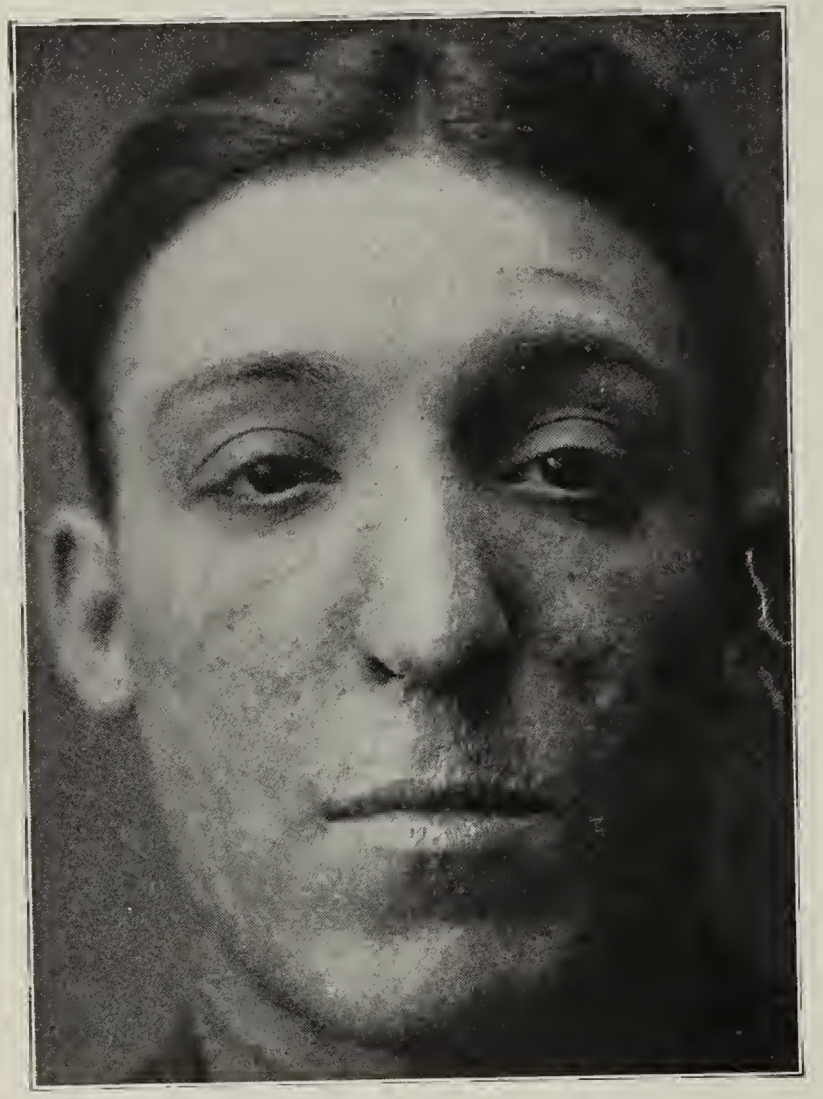

Fig. 2.—Condition at close of treatment.

An Italian, aged 21, entered the Cook County Hospital in February, 1921, with an extensive lupus vulgaris involving the tip and alae nasi, the upper lip and lacrimal region with scattered patches on the cheek. The disease began in 1910 on the nose, and gradually spread to the other regions. He was treated in the London Hospital with Finsen light in 1914 for one year, with partial clearing up of the lesions. Two years later there was a recurrence, and since then he had been under treatment in various dispensaries around Chicago. At one time a positive Wassermann reaction was obtained, and antisyphilitic treatment given over a long period, without improvement. In 1917, an injection of tuberculin caused a severe exacerbation.

The condition on admission to the County Hospital is shown in Figure 1. For several months he was given fractional doses of roentgen ray and tuberculin, without improvement. In May, 1921, the local application of solution of mercuric nitrate was begun, the other treatment being discontinued, and after four months the present excellent cosmetic result was attained. When shown at the annual meeting of the Chicago Dermatological Society in January, 1922, there had been no recurrence, and there were no "apple-jelly" nodules visible.

The method of using solution of mercuric nitrate is very simple. By means of a cotton applicator it is painted on the nodules for one to two minutes with firm pressure and allowed to dry. The pain of the application is not severe, and the effect is to change the soft, yellowish nodules to a white opaque appearance. The acid should not be neutralized, and no dressing is necessary. A crust forms which falls off after a week or ten days, leaving the area either healed or with a superficial ulcer which heals rapidly. The remaining scars are smooth and healthy looking. It is best not to use the acid on too large an area at one sitting, and if isolated nodules remain they should be treated again. According to Adamson, the method can also be used in ulcerated lupus and in mucous membrane lesions under local anesthesia. I have found it of particular value in the atrophic type with recurring nodules, of which most of the cases I have treated were examples. In spite of MacKee's warning not to use irritating applications on areas that have been irradiated with roentgen rays, I have not found that unfavorable results take place if an interval of a month is allowed to intervene before applying the acid.

CONCLUSIONS

1. Solution of mercuric nitrate is a simple and effective agent in the treatment of lupus vulgaris.
2. The action of the acid is enhanced by a preliminary course of roentgen-ray therapy.

30 North Michigan Avenue.

A NEGLECTED FEATURE OF THE MECHANICS OF MITRAL STENOSIS *

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The auscultatory phenomena of mitral stenosis, particularly the crescendo murmur and so-called presystolic thrill, are so striking that their explanation has long provoked special interest and discussion. There has been a division of opinion as to whether this murmur and thrill are of auricular or ventricular origin. Thomas Lewis,[1] among others, has attempted to show that the time of occurrence is prior to ventricular systole, and that the sounds must therefore be due to auricular systole. In his records, while most of the sound is diastolic, a part of it—a very forcible part—appears, to my eyes, to come in early systole. But no adherent of this view seems to have given an adequate explanation of the mechanics involved, or to have shown how the auricular contraction acting on a stenosed valve produces such a sound and vibration. Hirschfelder's[2] conception of the snap seems to be most nearly mechanically feasible, if it is valid chronologically.

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[2] Heidingsfeld, M. L.: A New Method of Treatment of Lupus Vulgaris, J. A. M. A. **63**: 1352 (Oct. 17) 1914.

[3] Adamson, H. G.: Brit. M. J. **2**: 123 (July 24) 1920.

* From the Laboratory of Applied Physiology, Yale University.

[1] Lewis, Thomas: Heart **4**: 221, 1913.

On the contrary, a number of writers, of whom Hart[3] and Reid[4] may be mentioned as bringing forward evidence and conceptions germane to the topic of this paper, have held that the impression gained by the ear of the listener, that the event in question is prior to ventricular systole, is misleading. They hold that it occurs "before the systolic sound but not before the beginning of (ventricular) contraction," as Reid puts it. If this view is justified clinically, there is still a need for a mechanically feasible conception of how ventricular contraction acting on a stenosed mitral valve may produce the characteristic murmur and thrill.

It happens that about ten years ago I had an opportunity to make observations by a special method which show a factor in the mechanics of a stenosed mitral valve not usually considered. The observations may help toward an explanation of the thrill. Unfortunately, no opportunity to repeat the observations has occurred, or is likely now to occur; but even this single observation may be reported, since it conforms closely to the general view which Hart, Reid and other adherents of the ventricular origin of the sound, and particularly the thrill, have developed, and since this laboratory observation is complementary to their clinical data. The description of the method employed, it is to be hoped, may stimulate others to repeat, or at least to test the correctness and generality of my observations.

MOVEMENTS OF NORMAL VALVES

Dr. F. E. Johnson and I[5] were then studying the movements of normal heart valves. In particular, we cut out preparations of the mitral and tricuspid valves from ox hearts and mounted them so that the ostium and the supporting ring of the valve were held against the end of a wide glass tube. The papillary muscles were stitched to a wire frame, 2 or 3 cm. from the end of the tube, so that the valve flaps were supported in practically normal relation and working position. The lower end of the glass tube bearing this preparation was immersed in a glass jar of clear water. A stream of water was allowed to flow down through the tube, then stopped; and a backpressure induced.

The movements of the flaps were meanwhile photographed, and showed clearly the features of the normal valvular movements. These consisted in an inrolling of the flaps to a position of approximation whenever the onflow of the current ceased with some suddenness. We showed that this movement was due to the lateral inflow back of the "breaking jet," as we expressed it. Accordingly, when a back pressure was developed a moment later, as it would be during ventricular systole, it merely completed the closure of the already approximated flaps, but caused no appreciable back lash or throw of the valve. This was natural enough in the tricuspid, in which the three main flaps are nearly alike and are equally supported on the muscular ring of the ostium. But in the mitral valve the larger flap forms an extension of the nonmuscular partition between the auricle and the part of the ventricule leading up to the semilunar valves and aorta. This flap is so large that a certain amount of sag and consequent back lash would almost be expected to occur at the onset of ventricular systole. However, we were led to the conclusion that in the normal heart, owing to the action of the "breaking jet" and the inrolling movement thus induced at the end of auricular systole, even this large flap is swung so nearly into position that when ventricular systole occurs no slack exists to allow back lash toward the auricle under the force of the ventricular impulse. These results have been checked by Dean,[6] working with Wiggers.[7] They draw a distinction between "approximation" of the flaps and "closure." But this seems so much a play on words that this formal criticism is virtually confirmation; and in order to avoid merely verbal disagreement, I have here virtually adopted their phraseology.

MOVEMENTS OF A STENOSED VALVE

If, however, the flaps along the greater part of their edges were attached to each other, leaving only a small orifice, the breaking jet and inrolling action of the flaps could not occur. Under such conditions the valve, and particularly the large flap of the mitral valve, forms a baggy funnel which, after being pushed down toward the ventricle during auricular systole, must inevitably be subject to a considerable back lash or upthrow toward the auricle, at the onset of ventricular contraction. Since the valve must be brought taut before any pressure in the ventricle sufficient to allow a discharge of blood into the aorta can occur, this throw and terminal jerk of the baggy funnel as it comes taut must produce a snapping or rumbling sound. When a small paper bag is held over one's mouth and inflated with the breath, it produces such a sound as the walls come taut. If this is correct, the crescendo murmur would occur exactly at the instant that Reid, Hart and others holding similar views have placed it. These considerations will be seen to be in accord with the following observations.

REPORT OF CASE

A woman, aged 40, of medium size, presented a quite typical case of mitral stenosis. Over the apex of the heart in the fourth intercostal space a distinct thrill could be felt. As judged by the radial or carotid pulse, it was presystolic. On auscultation a harsh, loud thud was heard at this time. At necropsy the heart weighed 360 gm. It was fortunately obtained before all of those cuts had been made by which a heart from necropsy is usually rendered useless for any study of valvular mechanics. The pulmonic orifice measured 7 cm. in circumference, the aortic 7 and the tricuspid 12.5, while the mitral was a mere slit 1 cm. in diameter and less than 3 cm. along its edges. It barely admitted the tip of the little finger. The calculated area of the opening was only a tenth of the normal. For the opportunity to make this report and the following observations, I am indebted to Dr. C. J. Bartlett.

In preparation for our observations, the left auricle was opened so that it could be tied over the end of a glass tube 5 cm. in diameter, as in our experiments with valves from ox hearts. The ventricle was opened, so that the entire mitral valve could be clearly seen, but the papillary muscles were not cut. The chordae tendineae were intact, and the valve could function virtually as during life. The preparation was immersed in a jar of water exactly as in our previous experiments.

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[2] Hirschfelder, A. D.: Bull. Johns Hopkins Hosp. **19**: 319, 1908; Diseases of the Heart and Aorta, Ed. 1, Philadelphia, J. B. Lippincott Company, 1910, pp. 341-359.

[3] Hart, T. S.: M. Rec. **80**: 2 (July 1) 1911.

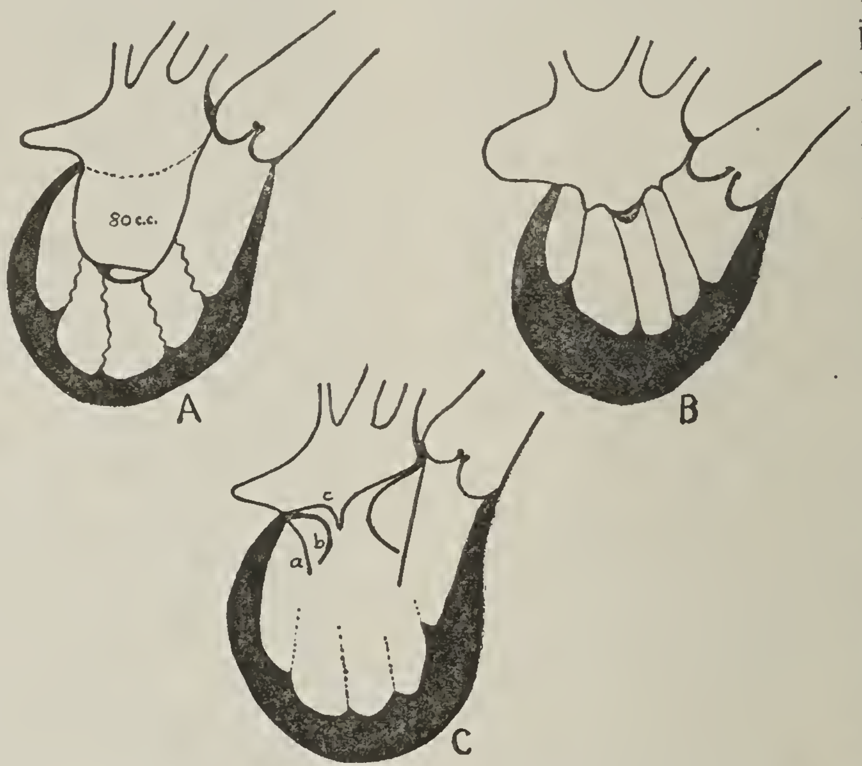
[4] Reid, W. D.: The First Heart Sound and the Presystolic Murmur, J. A. M. A. **76**: 432 (Feb. 12) 1921; The Auricular Heart Sounds, ibid. **76**: 928 (April 2) 1921; The So-Called Presystolic Murmur, ibid. **77**: 1648 (Nov. 19) 1921.

[5] Henderson, Yandell, and Johnson, F. E.: Heart **4**: 69, 1912.

[6] Dean, A. L.: Am. J. Physiol. **40**: 206 (April) 1916.

[7] Wiggers, C. J.: Present Status of Cardiodynamic Studies on Normal and Pathologic Hearts, Arch. Int. Med. **27**: 475 (April) 1921.

The mitral flaps had adhered at their edges so that the larger flap formed a partition with a great amount of sag or slack between the auricle and ventricle. In order to measure the amount of this sag, the opening of the valve was stoppered with a bit of absorbent cotton coated with petrolatum. Only a slight additional deformation was thus induced. Water was then poured into the large glass tube on which the preparation was mounted until it stood 2 or 3 cm. higher within the tube than in the tank in which the valve was immersed. This was a sufficient auricular pressure to cause the fused mitral flaps to bulge downward. The level of the water within the tube was marked on its side by a scratch with a diamond point. Then the tube and preparation were lowered 10 or 15 cm. into the tank. The mitral partition was thus subjected to a sufficient ventricular pressure to cause it to bulge upward. As a result of this change in the position of the partition, the water within the tube now stood considerably above the diamond scratch, although, of course, below the level of the water in the tank. The new level within the tube was also marked with a diamond scratch. The tube was then calibrated so as to give the volume which would fill it from one mark to the other. This proved to be 80 c.c.



A, Heart in diastole, with the baggy mitral funnel extending downward into the ventricular chamber. *B*, A ventricular contraction of 80 c.c. has merely pushed the valve taut, without as yet causing any discharge into the aorta; at the onset of the succeeding diastole, the ventricle must relax by 80 c.c., and allow the bag to move downward by this volume, before any appreciable inflow from the auricle can occur. *C*, A heart with a normal mitral valve; (*a*) in the diastolic position; (*b*) inrolling of flaps during the interval after auricular and before ventricular systole; (*c*) systolic position of valve.

The meaning of this measurement is that the left ventricle of this heart had to expand in diastole 80 c.c. before any blood would enter its chamber. Until it had expanded to this amount, no difference of pressure sufficient to cause blood to pass through the mitral orifice could occur. The valve would merely move downward until brought taut. In the same way at the onset of systole, the ventricle would have to contract by 80 c.c. before the valve was pushed upward and made taut. Until it had been brought into this position, the contraction of the ventricle could not produce any pressure that would be adequate to cause a discharge of blood through the semilunar valves into the aorta. Thus, for the left ventricle to make a systolic discharge into the arterial system of *A* c.c. of blood, whatever the amount *A* might be, 20, 40 or 60 c.c., it would have to make a stroke of *A* plus 80, or of respectively $20 + 80 = 100$, or $40 + 80 = 120$, or $60 + 80 = 140$. Obviously, the loss of efficiency in the pumping action of the left ventricle, through the wasted motion of the baggy valve swinging back and forth with each alternation of phase, would be very large. Indeed, in this particular heart, it may well have been the principal mechanical defect. These points are illustrated by the accompanying (diagrammatic) representations of a heart (*A*) with a stenosed and funnel shaped mitral valve in the diastolic position, and (*B*) in the systolic position, compared with (*C*) the positions and movements of a normal valve.

DECREASED VOLUME OF STROKE

An attempt was made to estimate what the volume represented above by *A*, that is, the tidal volume or systolic discharge, might have been. It certainly could not have been more than the amount of blood which would flow through the constricted mitral orifice during the period of a diastole under a head equal to the difference between the pressures in the auricle and ventricle. Normally this pressure is not much greater than that of a column of blood, or water, 5 cm. high. For experimental purposes and as a basis for a rough estimate, it was assumed that in this heart, owing to the obstruction of the stenosis, the blood was dammed back in the auricle and pulmonary veins to the relatively enormous pressure of 15 cm. Accordingly, with the valve mounted as described, a stream of water was allowed to flow into the glass tube tied into the left auricle until the level of water in the tube was just maintained 15 cm. higher than in the tank in which the preparation was immersed. It was found that a stream of only 52 c.c. per second was necessary to maintain this difference in level. In other words, 52 c.c. per second flowed through the stenosed valve under a head of 15 cm.

Taking the duration of diastole as 0.5 second, it follows that 26 c.c. would, on this assumption, be the utmost volume that could enter the ventricle during each period of refilling. This would then be all that on the average could be discharged by a systole. Indeed, it is probable that the amount was actually somewhat less, for blood is more viscid than water, and a head of 15 cm. of water or blood may have been more than the pressure in the pulmonary veins.

In a normal human being of the size of this woman, the systolic discharge of the left ventricle at each heart beat is probably about 60 c.c. In this case, however, on the foregoing showing it was reduced to less than 26 c.c. In the normal subject the greater part of the ventricular refilling takes place in the first 0.2 second of diastole. In this subject, however, the passage of blood through the stenosed valve was necessarily so slow that it would require the whole of a ventricular diastole of 0.5 second for 26 c.c. to enter the left ventricle. In such a heart, if the rate of beat were increased by any physical exertion, the shortening of diastole would reduce proportionately the volume of blood which the ventricle could receive during each diastole or discharge during the succeeding systole. At each beat, in order to make a discharge of this amount, it would have to employ an amplitude of stroke 80 c.c. greater, or a total of 106 c.c. in order to take up the slack and lost motion of the baggy mitral funnel.

PRODUCTION OF THRILL AND RUMBLE

Particular attention was paid to the production of sounds by this valve working as described above under fairly realistic mechanical conditions. It was found that a very distinct thud or rumble was produced whenever the valve was suddenly and forcibly brought taut. This was particularly the case when the valve was thrown into the systolic position.

This fact may have a bearing on the so-called presystolic occurrence of the crescendo murmur. In the normal heart it is well established that there is a very brief interval at the onset of ventricular contraction during which all four valves of the heart are closed. The mitral and tricuspid are firmly shut at the very first instant of ventricular systole, but pressures equal to those in the pulmonary artery and the aorta must be developed by the contracting muscle before the semilunar valves are thrown open. The perfection of action of the normal valves is such that no appreciable back lash or lost motion occurs, and this interval is therefore extremely brief. During this period the intraventricular curve, as all observers have found, rises very steeply.

In the heart under consideration, however, it was necessary for the musculature of the left ventricle to effect a contraction corresponding to 80 c.c. during this period, and this would necessarily occupy a certain amount of time. The whole of the interval would properly be counted as falling within the systolic period; but it would not be appreciated by the clinical observer as being systolic, since none of the ordinary signs of systole would as yet have occurred. It is true that the bringing taut of the mitral valve and its rumble would occur toward the end of this abnormal period; but the left ventricle would require an appreciable further (normal) period to develop the pressure that is necessary to induce the discharge of blood into the aorta.

In technical physiologic terms, the ventricle normally contracts at first isometrically, and then isotonically; but this heart, owing to the slack of the mitral valve, contracted at first almost without load or resistance, that is, isotonically, then isometrically, and finally at the end, during the discharge into the aorta, isotonically.

Even if no real leak occurred—as is believed common under this condition—the mechanical effect of the back throw of the bag and its contents, in this case 80 c.c. of blood, is similar to that of a regurgitation of this volume.

SUMMARY

Observations by in vitro experimentation on the heart of a patient with mitral stenosis disclosed that the back lash of the baggy funnel formed of the fused flaps amounted to 80 c.c. This lost motion was probably an important factor in diminishing the mechanical efficiency of this heart. Its effect, combined with the comparatively small amount of blood that could pass through the stenosed orifice during diastole, is calculated to have been such that, in order to discharge (say) 26 c.c. of blood into the aorta, the left ventricle would have to make a stroke of an amplitude greater than 100 c.c.

Before ventricular systole could effect any discharge into the aorta, the baggy funnel had to be made taut. It is suggested that this sudden throw and tightening of the previously slack partition is the cause of the thrill and rumble characteristic of mitral stenosis.

Clinical Notes, Suggestions, and New Instruments

ACUTE DEGENERATION OF A UTERINE LEIOMYOFIBROMA COMPLICATING THE PUERPERIUM

A. F. SPURNEY, M.D., AND PAUL M. SPURNEY, M.D., CLEVELAND

Interest in the acute degeneration of uterine fibroids, complicating pregnancy and the puerperium, was aroused by the following case:

Mrs. A. B. S., aged 31, primipara, who entered St. Luke's Hospital, May 23, 1921, pregnant, full term, and in labor, was delivered, May 24, by Dr. A. J. Skeel, of a healthy boy in a normal labor. The patient was known to have had a small tumor the size of a walnut in the uterine funds at the beginning of pregnancy, which had enlarged to the size of a grapefruit at term. The tumor caused no difficulty during labor.

Ten days after delivery, and without previous discomfort, the patient complained of severe low abdominal pain, and low backache. There was no elevation of temperature; the pulse was slightly accelerated; the white blood corpuscles numbered 16,850. The urine was practically normal. Examination of the pelvis revealed the tumor of the uterine fundus enlarged and very tender; no other pathologic condition was demonstrable.

Pain became more severe during the day and night, with a slight elevation of temperature. The pulse was slightly accelerated. As the patient's condition was not improved the next morning, operation was decided on. A questionable preoperative diagnosis of degeneration of the fibroid was made.

June 4, a low midline, abdominal incision was made. Examination revealed nothing abnormal except a puerperal uterus with a large intramural fibroid in the posterior fundus. Supravaginal hysterectomy was performed, and the abdomen was closed. The patient was put to bed in good condition. Convalescence was normal; the patient was discharged, June 21. At present she is in perfect health.

PATHOLOGY

The large, soft uterus, of the early days of the puerperium, contained a large, discrete, intramural tumor the size of a grapefruit in the posterior wall of the fundus, with two small nodules, the size of marbles, on the anterior wall. The cut surface of the small tumors showed leiomyofibromas of no special pathologic interest. The cut surface of the large tumor had a diffuse red color, in marked contrast to the lighter color of the uterus; the cut edge bulged and appeared very edematous.

Microscopically, the tumor proved to be a leiomyofibroma; it showed bundles of interlacing fibers, with a play of shades owing to the various planes at which the strands of cells were cut. There were foci of early degeneration and necrosis, with diffuse edema and hemorrhage into the tumor; inflammatory reaction was shown by the presence of lymphocytic cells. Many well formed blood vessels were seen showing thrombosis.

This pathologic picture is undoubtedly at that particular stage called "red degeneration" of fibroids. "Red degeneration" is aptly defined in the literature as an aseptic, necrobiotic process with hemolysis and autolysis of tissue. But it should be rembered that this condition may proceed to marked necrosis, gangrene and even suppuration, the latter being due to the invasion of organisms from the blood stream. The term "red degeneration" is misleading, being but a very gross term of the condition, and only a step in the pathologic process.

The cause of this condition is undoubtedly, as expressed in a personal communication from Dr. A. S. Warthin: "The condition is undoubtedly due to pressure on the in and out flowing vessels of the tumor, or to the thrombosis in these vessels. Such a thrombosis could be secondary to such a pressure. This could be brought about by a contraction of the uterus itself following labor, or may take place as a result of contractions of the uterus, secondary to the presence of the tumor. The blood supply of uterine fibromas is often very limited, particularly when they are well encapsulated from the surrounding uterine wall, so that the nutrition of the growth could be easily disturbed by compression of these vessels."

One article in the literature may assist in explaining this view. The article states that uterine fibroids during pregnancy lie very loosely in their capsules, and so a slight shift in the position of the tumor may cut off of the ingoing and outgoing vessels. Such mechanical causes seem much more rational than to ascribe the pathologic condition to the various toxins, such as lipoids, for which there is no sound basis.

The diagnosis of such a condition should be simple, provided a growing fibroid is recognized during pregnancy. A severe, acute, lower abdominal pain, often extending to the back, without marked rise in temperature, and with moderate acceleration of pulse, is symptomatic. Examination will reveal the presence of an enlarged, tender mass in the uterine body. The leukocyte count at this time is of no importance.

403 Osborn Building.

INFESTATION BY BROAD TAPEWORM

J. C. Wallace, M.D., and Margaret Grant, M.D., Fort Wayne, Ind.

Calvin[1] recently reported the finding of the broad tapeworm in native-born patients in Chicago. A similar case from Indiana should prove of interest:

Mrs. C. B., aged 25, born in Decatur, Ind., of German parents, lived in Decatur until four and one-half years ago, since which time she has lived in Fort Wayne. Her father occasionally received whitefish, bass and pickerel from Sandusky, Ohio. Commencing about eight years ago, the patient has occasionally eaten a little raw, as well as cooked fish. Following the birth of a child in 1918, she was conscious of strange movements in the abdomen, and a short time later she passed 18 feet of worm. Nothing appeared since, till in the early part of October, 1921, when she passed three sections of worm, each from 12 to 18 inches in length.

Dr. Margaret Grant examined the segments and reported that they showed the characteristics of *Bothriocephalus latus*, and that the ova were characteristic of that species. Blood examination, Oct. 8, 1921, revealed: hemoglobin, 85 per cent. (Tallqvist); erythrocytes, 4,025,000; leukocytes, 7,150; polymorphonuclears, 49 per cent.; lymphocytes, 43 per cent.; large mononuclears, 7 per cent.; basophils, 1 per cent. About four months later a stool examination did not reveal any ova.

The patient was given a thorough cleaning out with magnesium sulphate, and oleoresin of aspidium and kamala were administered. In four hours a little more than 7 feet of worm was passed. Owing to lack of cooperation on the part of the family, it was impossible to find out whether the head was passed, but the portion was narrowed down to very small segments.

People's Trust Building.

QUADRUPLE PREGNANCY

Harry French Thompson, M.D., Forest City, Iowa

Mrs. O., aged 35, the mother of six living children, all of single birth, was delivered of her first child in 1906 and of the second in 1908. The attending physician told her that the placenta was a twin placenta, but that there was but one child. In 1909 she had a miscarriage at six and one-half months, a placenta praevia. The other children were born in 1910, 1912, 1914 and 1916. The last day of her last menstruation was Sept. 24, 1921. Subsequent to this, she felt all the time as if she was about to menstruate, but nothing other than a miserable feeling happened until December 20, when she felt very well for three days, and then suddenly began to have a slimy, bloody discharge, which kept up until December 28, when for the first time there were severe pains, which continued until December 30. December 31, the pains recurred, and on the morning of Jan. 1, 1922, the patient had a miscarriage, and passed two fetuses, one free and the other still enclosed in the membranes. The patient was again free from pain until January 12, when she had pains all night, but in the morning felt well enough to be up, and at 10 o'clock passed another fetus. She remained in bed until January 16, when she resumed her household duties. January 28, she began to flow again, and thought it was her regular menstrual period. The flow kept up for two days and again stopped until February 3, when there was a bloody discharge for two days, which then became rather slimy until February 9, when the flow was free for two days. February 11, severe pains came on, and the flow stopped. I then saw the patient, and, about 7 that evening, delivered another fetus. The placenta did not come away readily, and I made an attempt to deliver it manually, but decided to pack the vagina and wait until later, hoping for a spontaneous delivery. This occurred the next morning at about 5:30.

At no time during the entire period, from the time of the first discharge to February 11, did the patient have any symptoms indicative of the absorption of toxins. There was at no time any unnatural odor to the flow, nor did she have any fever or chills. The babies delivered January 1 were described as being what one would expect at three months; that of January 13 was described as about the same size, and white. The one which I delivered, February 11, was the size one would expect at from eighteen to twenty weeks, and showed no indication of decomposition. The uterus had been steadily growing larger, and the patient thought she felt slight movements, February 9.

In going over the family history, I find that a father's sister gave birth to dead twins at eight months, and a mother's cousin miscarried at six months, a twin pregnancy. No other twin pregnancies were discoverable.

NEEDLE IN POSTERIOR WALL OF HYPOPHARYNX FOR SIX WEEKS

Ruric N. Smith, M.D., and Harry P. Price, M.D., Tulsa, Okla.

A well developed and well nourished white man, aged 45, at noon time, Nov. 5, 1921, was eating grape pie, when he noticed something sticking in his throat. He coughed and gagged, but the sticking persisted. After finishing work about 3 o'clock he reported to a physician. Roentgenoscopy revealed a foreign body, and under local anesthesia attempts at removal were made. Sixteen days later, under a general anesthetic, attempts at removal were again unsuccessful. The patient stated that he was in bed two days following this operation.

I saw the patient, December 4. The facial appearance was apparently normal. There was no difficulty or pain on swallowing. When pressure was made on the left side of the neck about the level of the thyroid cartilage, some sensation was produced. Turning the head to the left, and swallowing a large bolus of food produced sensation in the same area. Indirect examination failed to detect inflammation of the pharynx and larynx. The structures of the larynx seemed to function normally. A roentgen-ray examination revealed a needle lying in the horizontal plane, in front of the lower part of the body of the fourth cervical vertebra. The point of the needle was directed toward the left. At the hospital, without an anesthetic, a Jackson esophageal speculum was introduced and the hypopharynx and upper esophagus were explored. No foreign body could be found. In the region of the fourth and fifth cervical vertebrae the posterior wall was nodular and showed scar tissue.

Next day, under a general anesthesia, the patient's head was suspended on a Killian suspension apparatus. A Jackson esophageal speculum failed to disclose a foreign body. In the area of the body of the fourth cervical vertebra, an incision was made in the vertical axis in the midline of the posterior wall of the hypopharynx. The knife struck something hard. The incision was deepened, and the presence of the foreign body lying in the horizonal axis was definitely determined. Gentle traction with forceps caused the foreign body to break. The piece in the grasp of the forceps was removed. The forceps were again inserted, and the remainder of the foreign body withdrawn. Argyrol solution was applied to the wound.

An incision in the vertical axis, over the body of the cervical vertebra, about an inch long, had been made. The foreign body was about 3 mm. below the surface of tissue, being about the same depth throughout its extent. The next day the patient's temperature was normal and he was permitted to leave the hospital. On the last report his throat was normal and he had returned to work.

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[1] Calvin, J. K.: Native Infestation by the Broad Tapeworm, Diphyllobothrium Latum, J. A. M. A. 78:84 (Jan. 14) 1922.

506 Palace Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

QUINIDINE

Quinidine is obtained from cinchona bark as a by-product in the manufacture of quinine, to which it is closely related, being the stereoisomer of quinine.

Actions and Uses.—Quinidine, like quinine, is a protoplasm poison. It affects protozoa more than bacteria but less powerfully than quinine. At one time it was used, to some extent, as a substitute for quinine because it was then much the cheaper preparation.

Quinidine acts upon the heart in such a manner as to bring about cessation of fibrillation of the auricles in a certain proportion of instances. Quinidine and other cinchona alkaloids, are the only drugs known to have this specific effect. The pharmacology of the drug has not been thoroughly investigated; but it is probable that quinidine increases the refractory period of auricular muscle and decreases its irritability and the rate of conductivity. In large doses in the isolated hearts of rabbits, it slows the heart rate and causes paralysis of the auricle; shortens the auricular-ventricular conduction time, and results finally in paralysis of the ventricle. Quinidine is used to restore the normal rhythm of the heart in cases of auricular fibrillation. This has been brought about in approximately 50 per cent. of the reported cases in which the drug has been used. It is apparently most efficacious in the cases of fibrillation of short duration or of the paroxysmal type. It may also stop fibrillation of several years' duration. It is least effective in cases of fibrillation with marked cardiac insufficiency. Quinidine is not without some unpleasant and even dangerous effects. Some patients appear much more susceptible to its toxication than others. The untoward symptoms brought about by its use in these patients are nausea, vomiting, convulsions, palpitation, headache, faintness and flushing. In most cases following the administration of the drug, the pulse increases in rapidity before the normal rhythm is established. In some cases the effect of the drug is restricted to this alteration of rhythm. In a few instances, such serious results as rapid idioventricular rhythms (ventricular tachycardia) have been initiated during the course of therapy. Toxic effects may appear after the establishment of a normal rhythm. Some cases have been reported in which sudden death occurred a short time after the drug had been stopped. The effect of the drug is not known to be permanent; but the normal rhythm, when once established through the action of quinidine, may last from a few days to several months.

Dosage.—Quinidine is generally administered as quinidine sulphate. Commonly 0.2 Gm. (3 grains) of quinidine sulphate is given as a preliminary dose and is repeated after two hours to determine the patient's susceptibility to the drug. If there are no symptoms following this preliminary dose, therapeutic administration is begun on the following day when from 0.2 Gm. to 0.4 Gm. (3 to 6 grains) is given from three to five times daily, for one to three days. As a rule, if the establishment of the normal rhythm can be effected, the change occurs after from one to three days' treatment. The maximum dose per day advised by most authors is from 1 to 2 Gm. (15-30 grains). If toxic symptoms occur, the administration of the drug should be discontinued.

QUINIDINE.—Quinidina.—An alkaloid, $C_{20}H_{24}O_2N_2+2H_2O$, obtained from the bark of various species of *Cinchona*.

Actions and Uses.—See general article, Quinidine.

Dosage.—See general article, Quinidine.

Quinidine occurs in white crystals or as an amorphous, white powder; odorless; taste intensely bitter and persistent; efflorescent in dry air.

Quinidine is very slightly soluble in water; soluble in alcohol and ether; freely soluble in chloroform; very slightly soluble in petroleum benzin.

The aqueous solution of quinidine is alkaline to litmus and its alcoholic solution is dextrorotatory. A solution of quinidine in diluted sulphuric acid (1: 1,000) shows a strong blue fluorescence.

Quinidine loses its water of hydration at 100 C. The dried alkaloid melts at about 168 C.

Add a few drops of bromine water to 10 Cc. of an aqueous solution of quinidine (1: 1,000), prepared with just sufficient diluted sulphuric acid to produce complete solution, and follow with ammonia water in slight excess. The liquid acquires an emerald-green color.

Dissolve about 0.1 Gm. of quinidine in 15 Cc. of hot water containing a few drops of diluted sulphuric acid; cool the solution; add 1 Cc. of silver nitrate solution and stir the mixture with a glass rod. A white, crystalline precipitate forms after a short interval (*distinction from many other alkaloids*).

Dissolve about 0.1 Gm. of quinidine in 10 Cc. of warm water, containing a slight excess of diluted hydrochloric acid; add an excess of potassium iodide solution and agitate. An orange yellow, crystalline precipitate forms after an interval (*distinction from quinine*).

Dissolve 0.5 Gm. of quinidine in 15 Cc. of boiling distilled water, with just enough sulphuric acid to form a solution neutral to litmus paper, and add 5 Cc. of potassium iodide solution. Agitate the mixture gently; cool it to 15 C., and keep it at this temperature for one hour, with occasional stirring. A white precipitate is formed (*difference from quinine*). Filter out the precipitate and add 2 drops of ammonia water to the filtrate; not more than a slight turbidity results (*limit of other cinchona alkaloids*). Care must be taken to have the liquid perfectly neutral after the addition of the potassium iodide solution; if slightly acid, very dilute ammonia water must be added, drop by drop, with constant stirring until exact neutrality to litmus is attained.

A solution of about 0.1 Gm. of quinidine in 5 Cc. of sulphuric acid is not darker than pale yellow (*organic impurities*).

Incinerate about 1 Gm. of quinidine, accurately weighed. The ash does not exceed 0.1 per cent.

Dry about 1 Gm. of quinidine, accurately weighed, to constant weight at 100 C. The loss does not exceed 11 per cent.

Quinidine-P. W. R.—A brand of quinidine-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Company, Philadelphia. No U. S. patent or trademark.

Quinidine-N. Y. Q.—A brand of quinidine-N. N. R.

Manufactured by the New York Quinine and Chemical Works, New York. No U. S. patent or trademark.

Quinidine-M. C. W.—A brand of quinidine-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor. No U. S. patent or trademark.

QUINIDINE SULPHATE.—Quinidinae Sulphas.—$(C_{20}H_{24}O_2N_2)_2.H_2SO_4+2H_2O$.—The sulphate of quinidine.

Actions and Uses.—See general article, Quinidine.

Dosage.—See general article, Quinidine. Quinidine sulphate may be administered in the form of cachets, capsules, pills or tablets.

Quinidine sulphate occurs as minute, silky, white crystals, usually cohering in tufted masses; odorless; taste very bitter and persistent; permanent in the air. On exposure to light, it acquires a brownish tint.

Quinidine sulphate is soluble in water, alcohol and chloroform; very slightly soluble in ether.

The saturated aqueous solution of quinidine sulphate is faintly alkaline to litmus and is dextrorotatory.

Dissolve about 0.01 Gm. of quinidine sulphate in 10 Cc. of water; add a few drops of bromine water to the solution, and follow with ammonia water in slight excess. The liquid acquires an emerald-green color.

The aqueous solution gives a white precipitate with barium chloride solution which is insoluble in hydrochloric acid.

Quinidine sulphate loses its water of hydration (4.63 per cent.) at 100 C.; but the dried salt reabsorbs it on exposure to moist air.

To about 5 Cc. of a saturated, aqueous solution of quinidine sulphate, add 1 Cc. of silver nitrate solution and stir the mixture with a glass rod. A white, crystalline precipitate forms after a short interval (*distinction from the salts of many other alkaloids*).

Dissolve 0.5 Gm. of quinidine sulphate in 15 Cc. of boiling water and add 5 Cc. of potassium iodide solution; agitate the mixture slightly; cool it to 15 C., and keep it at this temperature for one hour, with occasional stirring. A white precipitate is formed (*difference from quinine*). Filter out the precipitate and add 2 drops of ammonia water to the filtrate; not more than a slight turbidity results (*limit of other cinchona alkaloids*).

A solution of about 0.1 Gm. of quinidine sulphate in 5 Cc. of sulphuric acid is not darker than pale yellow (*organic impurities*).

Incinerate about 0.5 Gm. of quinidine sulphate, accurately weighed; the ash does not exceed 0.1 per cent.

Dry about 1 Gm. of quinidine sulphate, accurately weighed, to constant weight at 100 C.; the loss does not exceed 5 per cent.

Quinidine Sulphate-P. W. R.—A brand of quinidine sulphate-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Company, Philadelphia. No U. S. patent or trademark.

Quinidine Sulphate-N. Y. Q.—A brand of quinidine sulphate-N. N. R.

Manufactured by the New York Quinine and Chemical Works, New York. No U. S. patent or trademark.

Quinidine Sulphate-M. C. W.—A brand of quinidine sulphate-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor. No U. S. patent or trademark.

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SATURDAY, APRIL 8, 1922

BEHAVIOR OF HYDROGEN SULPHID IN THE BODY

Hydrogen sulphid bears the reputation of being a decidedly toxic compound. Aside from its occasional occurrence as an occluded gas in coal seams and in mines, it is produced by decomposition of pyrites in the presence of moisture. Although the opportunities for poisoning with hydrogen sulphid in the industries are not very abundant, it must be recalled that the substance is an extremely common component of intestinal gases arising from the putrefaction of proteins in the lower bowel. From this source, therefore, there is furnished repeated opportunity for the absorption of the gas. Although it must be admitted that the quantities available at one time are not large, nevertheless the possibility of some sort of cumulative action needs to be reckoned with.

According to Wells,[1] as much as 66 mg. (1 grain) of hydrogen sulphid may be present in each hundred grams (1,543 grains) of normal colon contents, and there have been reports of alleged intoxication with hydrogen sulphid of intestinal origin. The term "enterogenous cyanosis" has been applied to conditions in which a compound of hemoglobin with hydrogen sulphid assumed to come from intestinal putrefaction has been encountered. Sulphemoglobinemia and also sulphemoglobinuria have been described as existing under such circumstances. It has not taken long for these expressions to become traditional in medical literature, and for the conventional descriptions to be handed down in the successive editions of popular textbooks. Scientific evidence, however, indicates that although sulphemoglobinemia, first described by Van den Bergh[2] in 1905, at times really exists, the formation of the new blood pigment derivative is an indirect result rather than a direct outcome of the absorption of hydrogen sulphid. Under ordinary circumstances the concentrations of this gas required to force a union between it and hemoglobin are far higher than those that would be instantly fatal if inspired. When, however, the oxyhemoglobin of the blood becomes reduced through the presence of strong reducing agents, a mere trace of hydrogen sulphid, such as might be derived from the intestinal tract, then suffices to form sulphemoglobin with the reduced pigment.

This view is substantiated by recent investigations of Haggard[3] at Yale University. He asserts that, within the body of a healthy person, complete reduction of the blood would be essential before any combination of the gas with hemoglobin could occur. In his own experiments it was shown that, when an atmosphere containing hydrogen sulphid is inhaled, no combination of the gas with the hemoglobin of the blood is formed, nor is any appreciable amount of sodium sulphid formed in the blood plasma. According to Haggard, the latter, in the presence of oxygen, possesses the property of rapidly oxidizing hydrogen sulphid. The products of oxidation combine in part with the sodium of the plasma. After inhalation of hydrogen sulphid, it exists in the blood dissolved and unoxidized at first. Alkali sulphids also liberate the compound. The rate of oxidation of hydrogen sulphid in the blood is such that in a comparatively short period many times the lethal amount of sodium sulphid may be administered intravenously to animals without any apparent effect. This explains the comparatively slight toxic properties exhibited by the absorption of sulphids from the intestinal tract; for the concentration of hydrogen sulphid dissolved in the blood can be maintained only by the continued inhalation of the gas. When the inhalation ceases, the hydrogen sulphid present in the blood is rapidly and completely destroyed. This chemical process, as Haggard finally points out, corresponds with the prompt recovery of man on removal from the atmosphere of hydrogen sulphid.

PROTEIN FEEDING IN TUBERCULOSIS

Rest, abundant feeding and plenty of fresh air are the simple defensive weapons that have won even popular acclaim in the fight against the ravages of tuberculosis when once it has gained a foothold. With respect to the food factor, in the therapy of the tuberculous there has been considerable difference in both opinion and practice. There have been advocates of high protein diets, of diets high in fat, and of a regimen rich in both of these types of foodstuffs. Obviously, a correct judgment on some of the problems here raised will depend on the peculiarities of the metabolism characteristic of the disease. If there is, in truth, an excessive "consumption" of the body, as the popular name for the disease implies, the continual losses must be made good; otherwise, a nutritive disaster is certain to be added to the other misfortunes of the patients. Furthermore, if there is a peculiar wear and tear of the active tissues, such as the glandular and muscular structures, so that the protein breakdown in particular is accelerated and higher than occurs in the normal person, the feeding of liberal amounts of protein in the diet would find a special scientific justification.

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[1] Wells, H. G.: Chemical Pathology, Philadelphia, 1920, p. 590.

[2] Van den Bergh: Deutsch. Arch. f. klin. Med. **83**: 86, 1905.

[3] Haggard, H. W.: The Fate of Sulfides in the Blood, J. Biol. Chem. **49**: 519 (Dec.) 1921.

Evidently the facts regarding the nutritive exchanges in the tuberculous need to be known accurately if the problem of their optimal nutrition is to be approached with intelligent appreciation. In particular, it is important to learn whether the so-called "toxic destruction" of protein assumed in certain febrile conditions occurs in tuberculosis. A febrile rise in body temperature does not of itself lead to undue protein catabolism, provided an adequate supply of energy is offered in the form of nonprotein foods, notably carbohydrates.[1] Febrile inanition is of more serious consequence.

Working with tuberculous patients at Bellevue Hospital, McCann [2] of the Russell Sage Institute of Pathology has found that high protein intakes are by no means called for. In some cases he reports it possible to maintain nitrogen balance, and even to retain nitrogen, when from 37 to 44 gm. (571 to 679 grains) of protein each day are ingested, of which about one half is from animal sources. The attainment of nitrogen equilibrium with such a small amount of protein is dependent on the ingestion of large amounts of carbohydrate and fat, sufficient to make the total caloric value of the diet from 1.7 to 2.4 times the basal energy requirement.. McCann believes that failure to establish nitrogen balance on such low protein diets is due to failure or inability of the subject to ingest sufficiently large quantities of carbohydrate and fat, rather than to an inherently large wear and tear quota in tuberculosis. One of the disadvantages of the enormous diets that have been recommended from time to time lies in the frequent inability of the patients to manage the alimentary task represented by such intakes. After all, forced feeding means little that is beneficial if the ration fails to be properly digested and absorbed. Hence one can only agree with McCann in his criticism of large diets and admit that, in the light of our present knowledge, the optimal quantity of protein in the dietotherapy of tuberculosis lies between the extremes of such forced feeding as is represented by 270 gm. (9 ounces) of protein a day and the unduly small intakes of the low protein advocates. Quoting McCann, while some patients can be made to gain nitrogen and weight on diets containing from 37 to 45 gm. (571 to 694 grains) of protein, this requires a large allowance of nonprotein food, especially of carbohydrate, in amounts sufficient to bring the total calories daily up to from 3,500 to 4,000. His experience has shown that nitrogen balance may be established at from 10 to 15 gm. (154 to 231 grains) of nitrogen (62 to 93 gm. [2 to 3 ounces] of protein), with a rather moderate number of calories in the diet (2,500). These figures are in accord with the average experience of the healthy man, and indicate that no exception is especially called for in the case of the tuberculous, except perhaps that the "biologic quality" of the dietary proteins in particular should be satisfactory.

GASTRIC JUICE AND THE TUBERCLE BACILLUS

The reputed antiseptic action of the gastric juice has long furnished the basis for the sense of security which we feel against invasion by living organisms that may find their way into the alimentary canal. Hydrochloric acid is germicidal when it is present in sufficient concentration. With a normal content of this secretory component of the stomach contents, more than traces of so-called fermentation products are rarely found; whereas, any reduction of the acidity is likely to be followed by bacterial and other microbiotic activities which may produce organic acids and gas. The current belief is summarized by the statement of a recent writer [1] that animals are constantly eating with their food bacteria, molds, protozoa or other parasites which are killed by the gastric juice. Of the vast number of bacteria that we swallow, the great majority are killed in the stomach; and persons having a copious and active gastric juice are less liable to infection by typhoid and cholera than those with less acid juice. The digested strongly acid material called chyme is almost sterile as it escapes from the stomach, and contains few living bacteria.

It is always unwise, however, to generalize too broadly about the protective devices of the human organism. There is no universally potent immunity against harm; and even the most approved factors for resistance to harm break down at times. Bacterial spores, for example, are singularly resistant to the common antiseptic procedures. Some varieties of micro-organisms are less easily destroyed than others, because of the relative impermeability of their bodies to bactericidal reagents. The facts here at issue have an interesting and important bearing upon the problem of infection with tuberculosis. If it is true that probably about 95 per cent. of all persons living in civilized communities are infected with *Bacillus tuberculosis* at some time during their lives,[2] and if an important portal of entry is the alimentary canal, a knowledge of the possible protective devices of the body in relation to this micro-organism is imperatively needed.

It has repeatedly been demonstrated that *Bacillus tuberculosis* can pass through the wall of the intestine when the latter is intact.[3] How the infective agent can escape destruction so frequently before it reaches this place of entrance into the body is made clearer by recent investigations at the City of London Hospital for Diseases of the Chest. There, Inkster and Gloyne[4] have observed that gastric juice removed from the stomach of persons free from gastro-intestinal disease, at various periods after suitable test meals, showed very little power of destroying tubercle bacilli in sputum or mouth rinsings which had been exposed to it for relatively long periods. It is evident, therefore, that the protection against the tubercle bacillus afforded by the gastric secretion in man is apparently by no means perfect, to say the least. Vigorous efforts should always be directed against the entry of this baneful microbe, particularly in view of the foregoing evidence. If it is rightly conceded that tubercle bacilli do not readily multiply in nature outside the animal body, and that therefore dissemination must depend essentially on infected persons or animals and the materials infected by them, the hygienist is further confirmed in the current plans for preventing the dissemination and transmission of tuberculosis.

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[1] Graham and Poulton: Influence of Temperature on Protein Metabolism, Quart. J. Med. **6**: 82, 1912.

[2] McCann, W. S.: The Protein Requirement in Tuberculosis, Arch. Int. Med. **29**: 33 (Jan.) 1922.

[1] Mathews, A. P.: Physiological Chemistry, New York, 1920, p. 351.

[2] McCampbell, E. F.: Marshall's Microbiology, Philadelphia, 1921, p. 694.

[3] McCampbell, E. F.: Marshall's Microbiology, p. 671.

TYPHUS FEVER: A STUDY OF DISEASE AND ITS MARTYRS

The transmission of the infective agent in typhus fever by the body or clothes louse is today an accepted fact. It is one of those permanent contributions of science applicable directly to the promotion of human welfare. The knowledge of the danger lurking in an unnecessary and undesirable human parasite serves at this moment to guard us against a disease menace daily threatening our shores. Few persons stop to consider what may be the basis for the sense of security which they feel against the outbreak of frightful epidemic diseases. If those who insolently deny the advances of preventive medicine and prophylactic hygiene could be made to realize in some vivid way the horrors of typhus fever, which was rife during the Napoleonic wars, which smote Ireland severely in 1817, 1819 and 1846, and which still remains in more than one country as an aftermath of the World War, the ranks of the scoffers might be speedily diminished. Supreme above all partisan healing sects and systems and creeds, Lee[5] has forcefully remarked, stands the scientific medicine of today, the heir of all that has preceded it since men began to heal.

The determination of the exact nature of the specific cause of typhus fever has proved even more difficult than the discovery of the mode of its transmission to man. Of late there has been considerable debate about the possible etiologic micro-organism. Several years ago, attention was directed in particular to *Bacillus typhi-exanthematici,* whereas more recently emphasis has been placed on the presumable importance of the so-called rickettsia. This is the group name given to minute micro-organisms with certain peculiarities found in lice. The name honors the memory of Howard Taylor Ricketts of Chicago, who first described micro-organisms possibly of this type in connection with studies on typhus, and who became a martyr to science when he died from the disease which he was investigating in Mexico City.

It has gradually become apparent that there are a number of very small bacterium-like micro-organisms, of which more than a dozen have already been partly differentiated. Rickettsia have been found in lice from presumably healthy persons; and healthy persons have in turn been subjected, without evident ill effects, to lice containing rickettsia. This fact has led competent investigators to assume that rickettsia are not pathogenic. Nevertheless, the existence of forms different from ordinary bacteria in lice from typhus patients has forced careful attention to them. The careful investigations of the Typhus Research Commission of the League of Red Cross Societies to Poland under the leadership of Wolbach and Todd,[6] whose main report has just been published, offer striking evidence of the dominant etiologic relationship of *Rickettsia prowazeki* to typhus. This micro-organism was named in 1916 by da Rocha-Lima in honor of von Prowazek, who also became infected with typhus, as did Ricketts, during his studies and died. The most important basis for the Red Cross Commission's conclusion was furnished by experiments indicating that the virus of typhus and *Rickettsia prowazeki* are inseparable in infective lice. Next in importance is the fact of the presence of bodies indistinguishable from *Rickettsia prowazeki,* demonstrable with great regularity, in the lesions of typhus in man. Typhus appears to be a disease of the smaller blood vessels, and the reputed parasite localizes almost exclusively in the vascular epithelium.

A "by-product" of the investigations in Poland has been certain corroboratory evidence that *Rickettsia pediculi,* an extracellular form of rickettsia found in lice, is the cause of trench fever. The typhus organisms are essentially intracellular in their occurrence, whether they are found in the tissues of infected man or in the stomach epithelium of the invaded louse. Much remains to be learned about the rickettsia, and the typhus-producing form in particular. It is not yet clear why lice do not invariably become infective when nurtured under proper conditions on typhus patients. Perhaps the louse must pierce a capillary at the site of a lesion or location of rickettsia in the endothelium. Precisely how the rickettsia enter the human patient is also not yet clear. These are questions which require expert knowledge and investigative skill of a high order. The study of typhus, furthermore, calls for real heroism. This is attested by the wonderfully expressive dedication of the Red Cross Report "to the memory of the investigators of typhus who, as a consequence of their researches, contracted the disease and died." Here are the names, lest we forget: Conneff, Cornet, Jochmann, Lüthje, von Prowazek, Ricketts, Schüssler. And here is the lesson:[5]

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[4] Inkster, J., and Gloyne, S. R.: The Bactericidal Action of Gastric Juice on B. Tuberculosis, Brit. M. J. 2: 1024 (Dec. 17) 1921.

[5] Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911, p. 175.

[6] Wolbach, S. B.; Todd, J. L., and Palfrey, F. W.: The Etiology and Pathology of Typhus, Cambridge, Mass., Harvard University Press, 1922.

> The altruism of men of medicine has become proverbial. Their heroism in investigating and treating disease is often put to the test, and is rarely found wanting. Their ideals are high, and they can be trusted to do what is within their power to put an end to the ills of suffering humanity. Yet it should be borne in mind that scientific medicine unaided has a wellnigh impossible work before it. If it is to accomplish the final banishment of disease, it must have the sympathetic cooperation and encouragement of mankind, in whose interests it continually labors.

ORIGIN OF THE BLOOD PROTEINS

Since the discovery that food proteins enter the circulation in the form of the amino-acids derived from them by digestion, and that the latter presumably are the true nutrients of the tissues, the function of the blood proteins has become more obscure than ever before. Formerly the normal proteins of the plasma were supposed to represent a nitrogenous pabulum always ready for the use of the body cells. Today there is no conclusive evidence of the consumption of these blood proteins by the tissues. Equally obscure is the origin of serum albumin and the serum globulins, which form conspicuous components of the circulation. Biologic analysis and immunologic reactions demonstrate that the blood proteins are not identical with the somewhat similar proteins of tissue cells; nor are the blood proteins a direct disintegration product of the leukocytes. In the lack of convincing evidence it is futile today to hazard even a guess as to the origin and destiny of the larger part of the plasma proteins.

There is some evidence, however, to indicate that these blood proteins are of great moment to the economy. The published work of Kerr, Hurwitz and Whipple,[1] for example, justifies the conclusion of such physiologic importance, since they found the stability of the serum protein concentration to be "truly remarkable." According to these investigators, the normal level is quite constant, and considerable deviations from this normal base line are not well tolerated by the body; in fact, profound shock may result. When the serum proteins are depleted, the repair or regeneration of these proteins is a slow process. It is as difficult to reconstruct these proteins as it is for the body to repair and replace liver cells following an extensive liver injury. Following a withdrawal of plasma, a rapid replacement of serum proteins may proceed for a few minutes, thus indicating the existence of some reserve supply of the substances concerned, possibly in the body cells. But the emergency supply is evidently small, and the production of other similar material is difficult and requires time.[2] It is reported that fasting does not prevent serum protein regeneration; therefore it is possible for the body to release these substances or to construct serum proteins from its own protein end-products.

The precursors of fibrin that are present in the blood apparently have a somewhat different history. Recent students of the clot-forming protein have remarked that, "compared with the other plasma proteins which are so stable in total concentration, the fibrin is truly mercurial in its changes."[3] They assert that the body under physiologic conditions will not tolerate a low blood plasma fibrinogen content and promptly forms sufficient material to return the fibrinogen level to normal or above normal. Foster and Whipple[3] believe, as the result of their investigations at the University of California Medical School, that diet factors may be concerned in the fluctuations of this labile blood plasma protein. In fact, the evidence speaks somewhat for a constant manufacture and utilization of fibrinogen in the body. Tissue injury appears to be the most powerful single stimulus to overproduction of fibrinogen. Along with inflammation, it causes a prompt and notable increase in fibrin values in the blood. Foster and Whipple[4] have observed that bacteria are not concerned in this reaction, which is identical whether a sterile or a septic inflammation is present.

Experiments conducted some time ago by Mathews seemed to indicate that after depletion of the blood in respect to fibrinogen this plasma protein can be reformed normally if the liver and intestine are intact, but that reformation is greatly reduced if the intestine is absent.[5] The fibrinogen appeared to be added to the blood in the portal area and chiefly in the intestine. Mathews did not suppose that the latter organ formed the blood protein from its own peculiar tissues, but rather that the fibrinogen came probably from the leukocytes and that the place of their destruction was the intestinal area. Under these conditions the other blood proteins are not simultaneously increased; hence there is no occasion to assume a common origin for all.

Foster and Whipple,[4] however, while admitting that there may be temporary reserve supplies of fibrinogen elsewhere in the body, have lately come to the conclusion that the liver is the chief potential source of this protein. The only condition, they state, which, without exception, causes or is associated with low fibrin values is acute extensive liver injury. The uniformity of this hepatic reaction, they add, is of great significance, and especially the remarkable parallelism which is demonstrable between the extent of the liver injury and the depression in fibrin values. Slight liver injury will cause a rise in blood fibrin values, like tissue injury elsewhere in the body; but, when the injury is extreme and acute, a prompt fall invariably ensues. If the conclusions remain tenable, the liver will thus have another duty added to its already long list of real or suspected functions.

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[1] Kerr, W. J.: Hurwitz, S. H., and Whipple, G. H.: Am. J. Physiol. **47**: 356, 370, 379 (Dec.) 1918.

[2] Smith, H. P.; Belt, A. E., and Whipple. G. H.: Rapid Blood Plasma Protein Depletion and the Curve of Regeneration, Am. J. Physiol. **52**: 54 (May) 1920.

[3] Foster, D. P., and Whipple, G. H.: Blood Fibrin Studies, II, Normal Fibrin Values and the Influence of Diet, Am. J. Physiol. **58**: 379 (Jan.) 1922.

[4] Foster, D. P., and Whipple, G. H.: Blood Fibrin Studies, IV, Fibrin Values Influenced by Cell Injury, Inflammation, Intoxication, Liver Injury and the Eck Fistula, Am. J. Physiol. **58**: 407 (Jan.) 1922.

[5] Mathews, A. P.: Physiological Chemistry, New York, 1920, p. 555.

Current Comment

SALIVA AND THE BACTERIA IN THE STOMACH

Although the acidity of the normal gastric juice confers on it antiseptic properties that serve to protect the alimentary tract and its appendages from bacterial invasion during the transport of food along the gastro-intestinal canal, this protective function is not always in a state of activity. Secretion in the stomach is scanty and scarcely acid during periods of gastric quiescence, particularly the so-called interdigestive phase of this organ. One might expect, therefore, that this period, when the stomach is relatively at rest and the secretion of acid is at a minimum, would afford favorable opportunity for the development of bacteria. Examinations of gastric contents withdrawn by the Rehfuss tube have, in fact, revealed considerable numbers of microorganisms under such circumstances; but Kopeloff[1] has apparently demonstrated that they are due to contamination with saliva. The number of bacteria in the stomach at any one time depends almost entirely on the saliva swallowed (when the bacterial content of the food may be disregarded). Even when the gastric acidity is low, bacteria fail to gain any considerable foothold or to make the stomach a focus of infection apart from the microbial contributions derived as indicated from the mouth.

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[1] Kopeloff, N.: The Bacterial Content of the Stomach as Influenced by Saliva, Proc. Soc. Exper Biol. & Med. **19:** 110 (Dec.) 1921.

SPLEEN MYTHS

As a result of the inconclusive attempts to solve the problems presented by the spleen, there have gradually arisen a number of theories—perhaps they should be called traditions—with respect to alleged functional interrelations between the spleen and some of the digestive organs. The asserted swelling of the spleen during the digestive cycle has been cited to support contentions that the organ affects gastric secretion in some way, possibly by producing an activator of pepsinogen or by altering the quantity and quality of the gastric juice. Similar postulates have been made with reference to the effect of the spleen on the pancreatic secretion. Furthermore, the flow of bile and even the orderly progression of intestinal peristalsis have been related by occasional physiologic writers to splenic collaboration of some undefined sort. Many of these allegations have been disposed of in recent years by investigations directed to test their validity. One of the latest of such critical researches has just been reported by Mollow[1] from Kestner's laboratory in Hamburg. Careful comparisons of the secretory behavior of fistula dogs before and after splenectomy have failed to disclose any measurable differences. This applies not only to the volume of the gastric, pancreatic and biliary secretions but also to the motor activities of the stomach, intestinal peristalsis and absorption. Furthermore, there were no alterations in the enzyme content of the pancreatic juice attributable to removal of the spleen. Let us hope, Mollow writes, that the old fable of the influence of the spleen on digestion will at last disappear from physiologic literature before the oft repeated assumption celebrates its centennial next year. With it may go the reiterated statement of Richet[2] and others[3] that splenectomized animals eat more than normal animals, their voracity apparently being stimulated by an augmented need of food. Smith and Ascham[4] of Yale University have lately completed experiments in which the growth as well as the qualitative and quantitative aspects of the food intake were accurately controlled in comparable animals with and without spleens. In no case did splenectomy afford evidence of an increased appetite or of variation from the normal growth rate.

DIFFUSE ENDOTHELIOMA OF BONE

In a recent report, Ewing[5] describes a heretofore apparently unrecognized primary bone tumor that in the past undoubtedly has been classed as round cell sarcoma. This tumor consists of broad sheets of small polyhedral cells with clear outlines and but little cytoplasm, which often seems to have undergone dropsical degeneration, and with small hyperchromatic nuclei. There is no intercellular substance. In places the cells line complexly interwoven channels that contain blood and, on account of this evident endothelial nature of the constituent cells, the tumor is held to be an endothelioma developing from the vessels of either bone tissue or marrow. In the seven cases mentioned by Ewing, this endotheliomatous bone tumor occurred in young persons, from 14 to 19 years of age, and the bones involved were the radius, tibia, ulna, ischium, scapula and skull bones, all the tumors with one exception being solitary and all clearly primary in the bones involved. The growth was rather slow, the often painful and tender swelling sometimes fluctuating in size, probably the result of variations in the blood supply. In the long bones the shaft was the part involved, the roentgenograms disclosing a diffuse fading of the bony structure without any new bone production as in osteogenic sarcoma; without evident perforation of the bone as in osteogenic sarcoma and myeloma, and without any central excavation surrounded by a widened bony capsule as in the benign giant cell tumor of bone. Bence-Jones proteinuria was not noted in any case. Diffuse endothelioma of bone appears to be susceptible to irradiation, the diffuse growth in the shaft of the radius in one of Ewing's cases receding promptly under radium, death occurring later, however, with evidences of skull involvement and recurrence in the radius. If these tumors prove amenable to radium, accurate diagnosis becomes essential before any mutilating operation may be undertaken. The age of the patient, the situation of the tumor, and the fading of bony structure without evidences of new bone formation on roentgenographic examination may furnish an adequate basis for diagnosis, as pointed out by Martland in the discussion of Ewing's report; but in many cases exploratory incision and removal of tissue for microscopic examination no doubt will be deemed necessary, and in such cases great care must be exercised in carefully cauterizing the incision with phenol (carbolic acid) or the actual cautery to prevent dissemination of tumor cells. To conclude, a not infrequent tumor occurs in the young, "commonly identified with osteogenic sarcoma, and usually called round cell sarcoma, which is really of endothelial origin, and which is marked by such peculiar gross anatomical, clinical and therapeutic features as to constitute a specific neoplastic disease of bone." Naturally, further observations on this newly differentiated form of neoplasm will be received with keen interest.

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[1] Mollow, W: Milz und Verdauung, Ztschr. f. physiol. Chem. **117:** 218, 1921.

[2] Richet: J. de physiol. et de path. **14:** 689, 1912; **15:** 579, 1913.

[3] Prym: Verhandl. d. Kong. f. inn. Med. **28:** 398, 1911.

[4] Smith, A. H., and Ascham, L.: Relation of Splenectomy to Growth and Appetite in the Rat, Proc. Soc. Exper. Biol. & Med. **19:** 127 (Dec.) 1921.

[5] Ewing, James: Diffuse Endothelioma of Bone, Proc. New York Path. Soc. **21:** 17, 1921.

THE PERSONALITY OF A HOSPITAL

The Massachusetts General Hospital is 100 years old, a tender age considering the generations man has inhabited the region about Boston. The Indians of Massachusetts had sickness in their tribes, but no hospitals; their predecessors, whoever they were, had disease, but no hospitals. It required a stable government and high-minded men with an insatiable desire for service to their fellow men, before the old Bulfinch building could rise above the sick of Boston. Warren and Jackson, founders of the Massachusetts General Hospital, were such men. Their ideals of service and their devotion gave an impetus to the new organization that carried it honorably through one century. The Bigelows, Shattucks, Cabots, Cushing and others have kept those ideals living, and have seen them grow until rooted in every department of the much larger and older organization. The development of the personality of Massachusetts General is an interesting story, as told by Dr. Harvey Cushing in his "Ether Day" address on the seventy-fifth anniversary of that great discovery. "Like an old wine," he said, "it has acquired a certain quality which only comes with age, and a new institution cannot imitate, for it represents the fusion of the countless personalities of all those who have worked for it or in it, no matter how lowly. . . . Anesthesia christened by Holmes, litholapaxy by Bigelow, appendicitis by Fitz, are three unquestioned offspring of the Massachusetts General Hospital." Credit is given to the humbler servants as well as to those medical men whose work helped to make the institution so well known: the faithful Hugh McGee, who served for fifty years, and James Mains, with his parkinsonian tremor, who was the mainstay of the Bigelow amphitheater for nearly as long. Then there was Barry, inimitable mimic of surgeons who had gone before, Pipper the night orderly, "Outpatient" John, and Louis Brown, who first came a boy with osteomyelitis, and died in the hospital thirty years later from complications of his old malady, meanwhile having become, as a photomicrographic expert, a most useful and loyal servant of the hospital. Distinguished organizations devoted to the sick are too few in number. Age is not absolutely necessary, but character, skill and cooperation are indispensable.

HISTORICAL FACTS REGARDING UREA

It marked an era in organic chemistry when Friedrich Wöhler succeeded, in 1828, in effecting an artificial synthesis of urea, which had long been known as an end-product of protein transformation in the organism. This novel work demonstrated that the intervention of mysterious agencies, of subtle "vital processes," is not necessary in the genesis of compounds of biologic occurrence. The locality in which urea is formed in the body was undoubtedly as much of a puzzle to physiologists in the early days of the last century as was the chemistry of its origin. Dr. Cowgill [1] of Yale University has pointed out that exactly a century has elapsed since the first definite proof that urea exists in the blood was furnished by Prévost and Dumas.[2] They offered conclusive evidence that urea accumulates in the circulating fluid when the kidneys are ablated, and hence demonstrated that, contrary to the suppositions often advanced in those early days, these organs do not manufacture the nitrogenous waste product but merely eliminate it. Prévost and Dumas concluded that urea is eliminated by the kidney to an extent corresponding to its formation elsewhere in the body. Nearly a century later, Marshall and Davis [3] demonstrated the urea content of all organs and tissues to be approximately uniform and equal to that of the blood, both in normal conditions and when abnormally large amounts of urea are present. Today the estimation of the urea content of the blood is a routine task of the clinic in securing an index of kidney function. Thus has physiologic chemistry changed from a purely qualitative discipline to one in which its quantitative contributions find a useful application in medicine.

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[1] Cowgill, G. R.: Chemistry of the Blood One Hundred Years Ago, Scient. Month. **14**: 161 (Feb.) 1922.

[2] Prévost, J. L., and Dumas, J. B. A.: Examen du sang et son action dans les divers phénomènes de la vie, Bibliothèque universelle, Sciences et arts **18**: 208, 1821.

[3] Marshall, E. K., Jr., and Davis, D. M.: Urea: Its Distribution in and Elimination from the Body, J. Biol. Chem. **18**: 53, 1914.

Lipoma of Uterus.—Including the case here reported, there are but seventeen such tumors on record. Clinically there is nothing to distinguish these tumors from other nonmalignant tumors of the uterus. The tumors have varied both in their location and in the details of their structure. Four occurred as cervical polyps, the remaining thirteen as tumors of the body of the uterus. Seven, including the one here reported, are listed as simple lipomas. Of these seven tumors, two occurred as cervical polyps. The other ten tumors are classed as lipomyomas.—R. C. Schleussner, *Proc. New York Path. Soc.* **21**:33 (Jan.-May) 1921.

Association News

THE ST. LOUIS SESSION

The Scientific Exhibit

The Scientific Exhibit at the St. Louis Session will be located in the auditorium of Moolah Temple. Adjacent to the Scientific Exhibit Booths is the hall which will be used as a moving picture theater. In the same building will be the Registration Bureau, Commercial Exhibit, Information Bureau and Branch Postoffice; thus the Scientific Exhibit will be of easy access to all in attendance. Applications are now coming in, asking for reservations. Space will be assigned about May 1 and each applicant notified of the space assigned to him. Any one desiring space for an exhibit or an assignment of time on the moving picture theater program should make application before that date, as no application can be considered later. Address, Director of Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Ill.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Hospital Transfers.—Major R. H. Stanley has been transferred from Whipple Barracks, Ariz., to take charge of the Palo Alto Hospital, succeeding Major J. M. Wheat, who has been transferred to the Marine Hospital, San Francisco. Coincident with this change, the hospital will be transferred from the control of the U. S. Public Health Service to the Veterans' Bureau.

DISTRICT OF COLUMBIA

Personal.—Col. H. J. Nichols of the Army Medical School has been elected chairman of the District of Columbia branch of the Society of American Bacteriologists; Capt. C. S. Butler, commandant of the Naval Medical School, was elected vice chairman, and Miss Alice C. Evans of the hygiene laboratory, U. S. Public Health Service, was chosen secretary-treasurer. The society, through L. A. Rogers, president of the National Society of American Bacteriologists, deposited with the Army Medical Museum a collection of type cultures of bacteria.

GEORGIA

New Officers of County Societies.—The following elections of county societies have recently been announced: Fulton County Medical Society: president, Dr. Rufus T. Dorsey, Atlanta, and secretary-treasurer, Dr. Grady E. Clay, Atlanta. ——Bibbs County Medical Society: president, Dr. J. P. Holmes, Macon, and secretary-treasurer, Dr. O. L. Spivey, Macon.——Troup County Medical Society: president, Dr. W. H. Clarke, LaGrange, and secretary-treasurer, Dr. Enoch Gallaway.——Walton County Medical Society: president, Dr. H. L. Upshaw, and secretary-treasurer, Dr. J. K. McClintic, Monroe.——Coweta County Medical Society: president, Dr. J. B. Peniston, Newman, and Dr. M. H. Farmer, Newman.——Lowndes County Medical Society: president, Dr. J. M. Smith, Valdosta, and secretary-treasurer, Dr. T. H. Smith, Valdosta. ——Gordon County Medical Society: president, Dr. J. M. Erwin, Calhoun, and secretary-treasurer, Dr. Z. V. Johnston, Calhoun.

ILLINOIS

Hospital News.—The contracts have been let for the erection of a Catholic Orphanage at Alton, to be erected at a cost of $600,000.

Personal.—Dr. Emil C. Lofgren has been appointed a member of the board of examining surgeons for pensions for Winnebago County, to succeed Dr. Dudley W. Day, resigned. ——Dr. Clarence D. McKinney, Paxton, has recently been appointed district health superintendent under the direction of the state department of public health. His territory will include Ford and McLean counties. Dr. McKinney's appointment brings the total number of such officers who are now active in the state service up to twenty.

Health Promotion Week.—By proclamation, Governor Small has set aside the period of May 7-13 as Health Promotion Week. The state department of public health has completed a program for the occasion and this may be secured on request. The three activities emphasized particularly are birth registration drives, milk pasteurization campaigns and better baby conferences. Members of the department staff are available for engagements to speak on public health topics and to assist in conducting better baby conferences.

Clinic Service.—It is announced by the national association that the tuberculosis clinic service organized for the Illinois Tuberculosis Association will be given wide publicity. Clinics have been held in practically every county in the state under the auspices of the county medical and the county tuberculosis societies, and under the direction of Dr. George T. Palmer, Springfield, with his staff consisting of Dr. Orville W. McMicheal, Chicago; Dr. James W. Pettit, Ottawa; Dr. Roswell T. Pettit, Ottawa; Dr. Robert H. Hayes, Chicago, and Dr. Herman H. Cole, Springfield.

Clinic for Crippled Children.—A new clinic for crippled children has been established by the division of child hygiene and public health nursing of the state department of public health at Rochelle. Dr. L. A. Beard, president of the board of directors of the Ogle County Tuberculosis Sanatorium has been placed in charge of local details. The clinic will function as an integral part of the work of the DeKalb County Health League, an organization which effectively coordinates the efforts and expenditures of all health agencies, whether governmental or extragovernmental, in DeKalb, Lee, Whiteside and Ogle Counties.

Railway Sanitary Code.—The state department of public health, with the approval of the Illinois Board of Public Health Advisors, has adopted a railway sanitary code. The code as adopted, conforms to the railway sanitary code recommended and approved by the conference of state and provincial health authorities and has the approval also of the U. S. Public Health Service and the American Railway Association. Similar codes have already been adopted in about twenty states and it is the aim of the state, federal and railway health officials to have the railway sanitary code uniform in all states because of the interstate connection of railroads. This code regulates the transportation of persons having communicable diseases, the water and ice supplies for railway trains, stations, offices and shops, the cleaning and disinfection of cars, the sanitary condition and control of cars while in service and the sanitary conditions at railway stations, railroad construction camps, offices and shops. A complete copy of the railway sanitary code will be published in a later number of *Health News*.

INDIANA

Hospital News.—The new Adams County Memorial Hospital will be erected early in the summer at a cost of $100,000. ——A new tuberculosis hospital will be built in Grant County.

Personal.—Dr. Wilson T. Lawson has been elected health commissioner of Hendricks County.——Dr. M. May Allen has been made assistant director of the child hygiene division of the state board of health.——Dr. Louis A. Bolling, Attica, has been appointed to the clinic for veterans of the World War, Washington, D. C.——Dr. Burton D. Myers, Bloomington, has been elected to the committee of the Association of American Medical Colleges.——Dr. Clinton G. Beckett, Attica, has been appointed district medical officer of the Federal Board for Vocational Education, U. S. Veterans' Bureau, Evansville.

IOWA

New Hospitals.—The new county hospital at Mount Pleasant was recently opened. This institution is the fifth to be erected under the Iowa County hospital law. It was built at a cost of $100,000. Under another provision of this statute, tuberculosis hospitals have been built by Woodbury, Des Moines, Dubuque, Scott and Wapello counties.——A new hospital has been opened at Hamburg.

KANSAS

Fake Healer.—The commissioner of health and sanitation of Kansas City announces that a man known as E. W. Haskelt, who claims to be the head of the Interstate Medical and Surgical Institute Association of Kansas City—a nonexistent institution—is traveling through the state promising to cure any disease for $50 in advance. Several people, it is alleged, have fallen victims to him. At various times he has been working in Missouri. Physicians would confer a favor if they will communicate with the health department, Kansas City, by wire or phone if they hear of him working in the vicinity.

University News.—The site has been purchased, through legislative appropriation, a gift from the city of Rosedale, and contributions, for the erection of the first unit of the new hospital of the University of Kansas School of Medicine, Rosedale. This institution will be erected at a cost of $400,000 and will have a capacity of 100 beds.——Dr. Ralph Major, department of internal medicine, University of Kansas, is convalescing from an appendectomy.——Dr. Wilfred Grenfell gave an address on medical conditions in Labrador, before the students and nurses of the school of medicine.——Dr. Leonard Rowntree of the Mayo Foundation, Rochester, Minn., was recently a guest of the Kansas City Academy of Medicine, and conducted a clinic of the senior class of the University of Kansas School of Medicine, Rosedale.

KENTUCKY

Hospital News.—A fire, causing damage estimated at $14,000, occurred recently at the U. S. Veterans' Hospital, Princeton.——A new hospital will be erected at Eminence, at a cost of $25,000, by the Odd Fellows.

Kentucky Academy of Science.—At a meeting of the academy, to be held May 20, at Lexington, Dr. Harry Gideon Wells, professor of pathology in the University of Chicago and Sprague Memorial Institute, Chicago, will deliver an address on "The Present Status of the Cancer Problem."

LOUISIANA

Reorganization of Medical Society.—The Seventh Congressional District Medical Society, suspended during the war, was reorganized, March 17, at a meeting held in Crowley. Dr. Henry W. E. Walther, New Orleans, read a paper, and the following officers were elected: president, Dr. Norman S. Craig, Jennings; vice president, Dr. Sylvan Wolff, Opelousas, and Dr. A. H. Morgan, secretary-treasurer.

MARYLAND

Inspection of Veterans' Bureau Clinic.—Dr. William H. Welch, director of hygiene, Johns Hopkins Hospital, recently inspected the Veterans' Bureau Clinic, 22 Light Street, Baltimore, accompanied by Dr. Isidore I. Hirschmann, district medical officer. Most of the departments have been recently installed and, according to Dr. Welch, compare favorably with any in the country.

Hospital Given Equipment.—Equipment valued at $3,715.84 has been presented to the University Hospital, Baltimore, by the Red Cross volunteer aides, in commemoration of the second anniversary of their connection with the institution. Included in the donations was the complete equipment for a new cystoscopic clinic, with individual roentgen ray, in addition to other apparatus. The presentation was made by Mrs. Robert K. Noble, the chairman of the Red Cross aides. Dr. Albert F. Woods, president of the University of Maryland, and Dr. Kenneth B. Jones of the hospital staff, accepted the equipment on behalf of the hospital.

Johns Hopkins University Fees to Be Increased.—Increases in tuition fees for the next academic year were announced recently by Johns Hopkins University for its medical department, the summer school and the college courses for teachers. Beginning next October, the tuition at the medical school will be $300 a year, instead of $250. The tuition fee for the 1922 session of the summer school will be raised from $30 to $35 for two or three courses. Additional courses will cost $14 instead of $12. The fee for a single course is raised from $20 to $22. An additional fee of $3 is set for late registration. No other changes in tuition fees have been made. The increase in tuition charges has been made necessary by the increasing demands of the university's budget. The increase in the summer school is due directly to the necessity for higher salaries for the special summer instructors.

Personal.—Dr. William S. Halsted, professor of surgery at the Johns Hopkins Medical School and surgeon in chief of the Johns Hopkins Hospital, was given a dinner by the National Dental Association, at Baltimore, April 1. In recognition of his service to the medical profession and humanity, as discoverer of the modern method in neuroregional anesthesia, the association presented him with a handsome medal. ——Dr. Hugh H. Young has returned to Baltimore from a two months' trip to the Mediterranean, during which time he visited southern France, Algiers, Egypt and Turkey.——Dr. Ernst Fuchs, professor emeritus of ophthalmology, whose visit to Baltimore was postponed by illness, gave a notable lecture on "Ophthalmology," at Osler Hall, Baltimore, March 29.——Dr. Howard A. Kelly of Baltimore is spending a few weeks in Florida, in search of rare fungi and reptiles.——Dr. George W. McCoy, director, United States Hygienic Laboratory, Washington, D. C., delivered a lecture on "Plague" at the Johns Hopkins School of Hygiene and Public Health, Baltimore, April 3, under the DeLamar course of lectures.——Dr. Frank Gordon, commandant at U. S. Veterans' Bureau Hospital No. 56, at Fort McHenry, has severed his connection with the hospital, to take charge of the Veterans' Bureau Hospital at Portland, Ore.——Dr. Clayton C. Campbell, chief of the medical service, U. S. Veterans' Bureau Hospital No. 56, at Fort McHenry, by orders effective April 1, has gone to Veterans' Bureau Hospital No. 52 at Boise City, Idaho, and Dr. Sherwood Dix has been transferred to Veterans' Bureau Hospital No. 72 at Helena, Mont. Both officers have been at Fort McHenry for more than a year.

MASSACHUSETTS

Hospital News.—The new wing at the Belmont Hospital, Worcester, erected at a cost of $177,000, was formally opened in February. This addition will be known as the Coffey ward, in honor of the late James C. Coffey, who for twenty-five years was executive officer of the Worcester Board of Health. It has a capacity of sixty-eight beds and is connected with the main building by a subway.

MICHIGAN

Violation of Narcotic Law.—It is reported that Dr. Arthur R. Sevensma, Grand Rapids, was sentenced to one year and three months in the Leavenworth prison for violation of the Harrison Narcotic Law, in the court of appeals in Cincinnati, recently.

Smallpox Epidemic.—It is announced by the health department that an outbreak of hemorrhagic smallpox has developed into an epidemic of twenty-eight cases, with eight deaths, at Muskegon. Among these were two infants under 3 weeks of age, and a man of 77 years. The disease is also prevalent, according to reports, in the counties of Alpena, Genesee, Huron, Mackinac, Oakland, Osceola, Saginaw, Sanilac, St. Clair, St. Joseph and Wayne.

Health Information.—A joint committee has been formed representing the University of Michigan, the Michigan State Medical Society, the state department of health, the Detroit College of Medicine and Surgery and the Michigan State Dental Society, for the purpose of presenting to the public fundamental facts of modern scientific medicine. Speakers of recognized authority will be supplied, and more than eighty-five lecture topics have already been listed, with the names of fifty men and women, leaders in their professions, as available speakers. Any community wishing to secure a lecturer to speak on any phase of public health will be supplied by the joint committee. All expenses of the lecturer will be paid by the organizations which they represent.

MINNESOTA

Child Health Day.—The first Child Health Day was held in St. Paul, March 24, under the auspices of the St. Paul association and the National Dairy Council, in cooperation with the General Council of Mothers' Clubs and the Parent-Teacher Association.

Personal.—Dr. William M. Sweeney has resigned as health officer of Red Wing and will be succeeded by Dr. Nels L. Werner.——Dr. C. E. Gray, Rush City, is now in sole charge of the Rush City Hospital, having purchased Dr. Engstrand's interest.——Dr. Isaac A. Abt, professor of pediatrics, Northwestern University Medical School, Chicago, delivered the annual address before the Alpha Omega Alpha fraternity of the University of Minnesota Medical School, Minneapolis. ——Dr. Katherine A. Nye has been elected to the board of health of St. Paul.

MISSISSIPPI

Legislative News.—A bill for the appropriation of $134,000 per annum to the state board of health for emergency expenses, the eradication of malaria, pellagra and hookworm, passed the House, March 9, and will be used as follows: for the hygienic laboratories, $20,000 per year; vital statistics, $12,000; rural sanitation, $30,000, and child welfare work, $30,000.

Merger of Medical Societies.—At a meeting of the Clarksdale and Six Counties Medical Association, March 23, at Clarksdale, a resolution was introduced calling for the dissolution of the Clarksdale and Six Counties Medical Association and the merging of this association with the medical societies of Humphreys, Leflore and Washington counties, the united societies to be designated the Delta Medical Association. This resolution was tabled for final consideration in November.

MISSOURI

State Medical Meeting.—The annual meeting of the Missouri State Medical Association has been changed; it will be held May 2-4, at Jefferson City, instead of May 9-11, as previously announced.

St. Louis Clinics.—The St. Louis Clinics has recently established a junior membership with dues at $10 per year, limited to men who have been graduated five years or less and who desire to list their clinics. This section will hold a special clinic week, May 18-23, in conjunction with the Local Committee of Arrangements of the American Medical Association.

Hospital News.—Dr. William L. Gist, superintendent of the Kansas City General Hospital, has inaugurated a system of part pay care for patients able to pay something for hospital care, but unable to pay the charges at a private institution. A social service worker has been employed to investigate the financial condition of those admitted to the hospital on the part pay plan.

NEW JERSEY

Essex County Medical Society.—At a meeting of the society held recently, a resolution was adopted to oppose Senator Parry's series of bills that would take the control of the Essex County institutions at Verona and Soho out of the hands of their boards of managers and give complete control to the board of freeholders. These bills have passed the Senate and are now in the House. The society voted the indorsement of the Alexander bills, regarding marriage and social diseases.

NEW YORK

Chiropractor Bill Dies.—At a hearing on the Chiropractor bill before the legislature, more than 1,000 persons are said to have appeared against the bill and only about 100 in favor of it. The bill was recommitted for amendment and died in committee.

Banquet for Woman Physician.—A dinner in recognition of her twenty-five years' public health service will be given to Dr. Sara Josephine Baker, director of child hygiene of the department of health, April 20, at the Hotel Commodore, New York City. Dr. Henry Dwight Chapin is chairman of the committee in charge.

Health Talks by Radio.—The first of a series of five minute health talks was wirelessed from Schenectady General Electric Radio Station, March 24. Suggestions were requested as to the health subjects the public prefer, bearing on the general health and protection of the community. Address "Radio" State Department of Health, Albany. Individual cases will not be taken up.

Hospital News.—A new tuberculosis sanatorium for men will be erected at a cost of $40,000, in connection with the Willard State Hospital.——The Harlem Eye and Ear Hospital, New York City, was formally opened, March 14.——A new hospital is under construction at Tuxedo Park, to be known as the Tuxedo Memorial Hospital. It will cost $200,000.——A new addition will be made to the St. Francis Hospital, Port Jervis.——The new $45,000 addition to the Bethesda Hospital, Hornell, is completed.——A group of business men prevented the sale of the Volunteer Hospital, New York City, to satisfy a judgment of $56,000, authorized by the supreme court.

Personal.—Dr. David Bovaird has been appointed superintendent of Clifton Springs Sanatorium, Clifton Springs.——Dr. Bertrand E. Roberts has been appointed epidemiologist of the state department of health, to succeed Dr. Edmund Boddy, resigned.—Dr. Thomas B. Walsh has been appointed medical inspector of parochial schools in Syracuse, to succeed Dr. Charles J. Wells.——Dr. George D. Stewart, professor of surgery, University and Bellevue Hospital Medical College, New York, delivered an address on "The Interpretation of Abdominal Pain" before the Kings County Medical Society, Brooklyn, March 23.——Dr. Charles M. Burdick has been appointed superintendent of the Dannemora State Hospital, Dannemora, to succeed Dr. John J. Ross.

State Charities to Observe Founding.—Homer Folks, secretary of the State Charities Aid Association, announces that the association will observe its fiftieth anniversary with events distributed over several months and over many parts of the state during the present year. A meeting will be held in New York, May 11, the fiftieth anniversary of the day when Miss Louisa LeSchuyler, granddaughter of Alexander Hamilton formed the association. The organization led in the movement that took from the almshouses their insane; in 1881, it secured the legislation giving the right of entry to all poorhouses to its visitors. In 1893, the association organized an agency for providing situations in the country for mothers and children. In 1907, the organization began the fight against tuberculosis. The association is an unofficial body. It has 1,200 members in the state, fifty-two county wide committees on tuberculosis and public health and has thirty-seven full time executives at work under the direction of the state committee. It has seventy-six visitors to state institutions and several hundred visitors to almshouses and public hospitals.

New York City

Hearing on Cornell Pay Clinic.—A joint meeting of the Eastern Medical Society, the New York Physicians' Association, the Yorkville Medical Society and the Harlem Medical Society, under the auspices of the committee on civic policy of the Medical Society of the County of New York, was held at the New York Academy of Medicine, March 29, for the purpose of discussing the pay clinic from the medical, the public and the economic standpoint. Dr. Walter L. Niles and Dr. Michael M. Davis were the chief defenders of the Cornell Pay Clinic, opened November 1, 1921. Dr. Louis I. H. Harris and Dr. Henry W. Berg spoke against the clinic. A report of the combined committees of the above named societies was presented. The attorney general has handed down the opinion that the Cornell Medical College Dispensary is a dispensary within the meaning of Section 290 of the State Charities Law and properly licensed by the State Board of Charities.

NORTH CAROLINA

Hospital News.—A new tuberculosis sanatorium will be erected by Guildford County at High Point at a cost of $100,000.——The cornerstone of the William J. Hicks Memorial Hospital, Oxford, was recently laid by the North Carolina Masons. The institution will cost $100,000.

Gorgas Memorial Day.—March 17 was selected as Gorgas Memorial Day by all the public schools of the state. A program consisting of articles by students of the schools on General Gorgas' work in eliminating yellow fever and malaria in Cuba and Panama, the growth of preventive medicine, health and sanitation in the state of North Carolina, and the plan of the Gorgas Memorial Institute, both in the field of research at Panama and the school of sanitation at Tuscaloosa, was presented.

OHIO

Personal.—Dr. Edward Herbst has been appointed full time examiner for the U. S. Veterans' Bureau, Columbus.——Dr. William S. Chase has resigned as president of the Akron Health Commission.

Supreme Court Rules Against Chiropractors.—A decision of the Ohio state court of appeals, which was affirmed by the state supreme court, ruled that chiropractors cannot practice in Ohio unless licensed to do so by the state medical board; and the U. S. Supreme Court has declined to review this decision. The result is that chiropractors who are said to have been practicing in the state without licenses will now be subjected to vigorous prosecution unless they secure licenses to practice.

Census of Cripples.—The Ohio State Medical Association will conduct a state census of crippled persons, 16 years of age or over, May 8-12, for the rehabilitation division of the state department of education. Handicapped persons who physicians think are capable of being trained for useful occupations so that they may be able to earn their own livelihoods will be located by the state medical association The work is supported half by federal and half by state funds.

The trainees are placed in industrial or business concerns and in some cases in schools. Tuition, tools, books, supplies, and artifical limbs are furnished by the rehabilitation division.

OKLAHOMA

Oklahoma Public Health Association.—It has been announced that Jules Schevitz, for four years secretary of the association, died, March 22.

PENNSYLVANIA

Reorganization of Health Board.—The city of Hazleton recently reorganized the board of health with Dr. Walter Lathrop, president, and Dr. Ralph E. Buckley, vice president.

Chiropractor Convicted, Appeals.—After deliberating twenty minutes, a jury in the criminal court of Bucks County found W. B. Martindell, Bristol chiropractor, guilty of practicing medicine and surgery without a license. The trial lasted four days, before Judge William C. Ryan. An application was made for a new trial, and Martindall was released on $800 bail pending the disposal of the motion.

New Hospital Award Plan.—A system of accounting, whereby sectarian hospitals may be reimbursed for charity service rendered the public, has been worked out by Dr. John M. Baldy, head of the department of welfare. Under this plan, reimbursement for actual service rendered would supersede blanket appropriations. The exact amount the state should pay would be estimated on the basis of the number of charity and part time patients treated by each institution. Previously, hospitals reported merely gross expenses. Dr. Baldy expressed the belief that it will be legal to resume payments to sectarian institutions for actual service rendered. He announced that the system has been approved by the auditor general.

Medical Centers.—The Graduate School of Medicine of the University of Pennsylvania, together with the Medical Society of the State of Pennsylvania, is undertaking the establishment at a number of points throughout the state of graduate medical extension groups, whereby physicians and surgeons situated far from the hospitals of the bigger cities will be able to get virtually all the latest developments in clinical work and discoveries in medical science. This project has already been endorsed by the state medical association, and a committee has been named to negotiate with Dean George H. Meaker of the Graduate School of Medicine, regarding the carrying out of a definite program, which has already been submitted.

Delaware County Towns Decide on Hospital.—A permanent organization to work toward the establishment of an intercommunity hospital for the eastern end of Delaware County was effected March 31, at a meeting of the representatives from the various districts in the Upper Darby High School. Dr. Collin Foulkrod, of the Presbyterian Hospital staff, presided, until A. Milton Lutz, of Lanerch, was selected as chairman of the organization. Dr. Clifford B. Lull was one of the other officers elected. After the state medical society requested the doctors of that district to start a movement for such an institution, the physicians appealed to the civic groups of the county and the communities themselves to send representatives to the meeting. The hospital plan was unanimously indorsed. The chairman was instructed to appoint a finance committee of sufficient number to begin work immediately on plans for raising funds to build and equip the hospital.

Philadelphia

National Institute.—The tenth session of the institute for tuberculosis workers, which is conducted annually by the National Tuberculosis Association, will be held, April 10-26, under the direction of Dr. Philip P. Jacobs.

Hospital Drive.—The drive for $200,000 for the Great Heart Hospital, formerly the Garretson Hospital, which began one year ago, has taken new impetus with the announcement of several auxiliaries of the hospital that they contemplate an extensive campaign in the interest of the movement. This institution is nonsectarian and works in alliance with the medical college and the Philadelphia Dental College of Temple University.

SOUTH CAROLINA

Personal.—Dr. Jesse W. Bell has been elected a member of the board of health of Walhalla.——Dr. John W. Dupree has been appointed a member of the board of health of Simpsonville.

TENNESSEE

Banquet for Physician.—The National Academy of Medicine and the Davidson County Medical Society gave a farewell banquet, March 29, in honor of Dr. Olin West, secretary of the state board of health, editor of the *Journal of the Tennessee State Medical Association*, and secretary of the Tennessee State Medical Society, who has resigned to become Field-Secretary of the American Medical Association, Chicago.

TEXAS

Dallas Monthly Clinic.—This clinic was inaugurated in February, and is conducted by the Dallas County Medical Society. At the second clinic, March 23, Dr. Carroll Allen, professor of clinical surgery, Tulane University of Louisiana School of Medicine, New Orleans, was the guest of honor and discussed "Local Anesthesia in Major Surgery." Dr. Robert E. House, Ferris, presented his experiments concerning the use of scopolamin-morphin anesthesia.

UTAH

Pacific Coast Oto-Ophthalmological Society.—The tenth annual session of the society will be held, September 14-16, in Salt Lake City, one week previous to the meeting of the American Academy of Ophthalmology and Oto-Laryngology, at Minneapolis, September 19-21. The secretary, Dr. Edward Lecompte, Boston Building, Salt Lake City, would like to hear from members who have pathologic specimens or other exhibits of interest for the session, and also with reference to contributions for the program.

WASHINGTON

Puget Sound Academy of Ophthalmology and Oto-Laryngology.—At a meeting held in Seattle, February 24, Dr. Frederick Adams, president of the society, read a paper on "Cholesterin Crystals in the Vitreous."

Italian Decoration for Physician.—Dr. David C. Hall, University of Washington, Seattle, has been made a Chevalier of the Italian Order of Saints Maurice and Lazarus by the king, for services rendered when serving as a lieutenant-colonel in the ambulance service on the Italian front.

Personal.—Dr. Ossian J. West has been appointed director of the laboratory at Columbus Sanatorium, Seattle, to succeed Dr. Manch N. Garhart, who resigned recently.——Dr. Adelaide Woodward has received the Keiser Hind medal from the government of India, for services in India. Dr. Woodward established a hospital at Sategar for native people.

Hospital News.—A new hospital is being erected at Puyallup at a cost of $32,000. It will be a two-story building, with a twenty-five bed capacity.——The new wing of St. Luke's Hospital, Spokane, was formally opened in February.——A new sanatorium will be erected by the Commercial Club of Leavenworth at a cost of $10,000.——The Virginia Mason Hospital, Seattle, has recently been wired with aerials for radio service, which will be available in each room in the building.

WISCONSIN

Hospital News.—A new addition will be erected at St. Agnes Hospital, Fond du Lac, at a cost of $500,000. The plans provide for two complete units, one devoted to administration and operating departments and the other to patients.

Personal.—Dr. William A. Matushek has resigned as resident physician of the South View Hospital, Milwaukee.——Dr. Erroll V. Brumbaugh, former instructor in bacteriology, Marquette University School of Medicine, Milwaukee, has been appointed health officer of Madison.

PHILIPPINE ISLANDS

Society for the Care of Children.—The American Guardian Association was recently organized in Manila for the purpose of guarding and caring for children in the Philippines who are wholly or partly of American blood, and are without proper protection. Major Gen. Leonard Wood is honorary president of the association, and Colonel Johnson acting secretary. An appeal for funds is being made. The membership fee, including annual dues, is $10.

Philippine Lepers.—An investigation is being conducted by Dr. Victor G. Heiser, chief of the Far Eastern section of the Rockefeller Foundation, in an endeavor to ascertain the exact quantity of chaulmoorgra oil in the islands, so that this method of treatment may be extended to all lepers in the Philippines. It is reported that among the 5,000 lepers on Culion Island there are five former American soldiers, who have not been included in the 300 or 400 who are receiving the chaulmoogra oil treatment. Gen. Leonard Wood has announced that he intends to see that all lepers on the islands receive the treatment. Thirty liters of oil per thousand patients is required per month.

GENERAL

Women's Medical Fraternity.—The annual meeting of Alpha Epsilon Iota, the woman's national medical fraternity, was held in Indianapolis, in March. There were nine initiates.

Health Conference.—It has been announced by the Surgeon General that the twentieth annual Conference of State and Territorial Health Authorities will be held at Washington, D. C., May 17-18, in conjunction with the U. S. Public Health Service.

National Catholic Hospital Association.—The annual convention of the Catholic Hospital Association of the United States and Canada will be held at Washington, D. C., June 20-23. Dr. John M. Cooper, Catholic University of America, Washington, is director of the exhibits and Dr. Bernard McGrath, Milwaukee, is secretary-treasurer of the organization.

Negro Health Week.—The eighth annual Negro Health Week was observed, April 2-8, under the auspices of the Annual Tuskegee Negro Conference and the National Negro Business League in cooperation with the U. S. Public Health Service, under the direction of Robert R. Moten, LL.D., head of the Tuskegee Normal and Industrial Institute, founded by Booker T. Washington, in 1881.

Immigration Committee Approves Deportation of Drug Pedlers.—The House immigration committee has voted favorably on Chairman Johnson's bill to provide for deportation of bootleggers and drug pedlers not citizens of the United States. The measure would add to the other offenses under which an alien may be deported and denied readmission, violation of any federal or state statute prohibiting or regulating the manufacture, sale, transportation or importation of intoxicants and drugs. Should the offender be imprisoned, deportation proceedings can only be started after his sentence has expired.

New Regulations for Liquor Prescriptions.—New regulations further limiting the use of liquor prescriptions by physicians are being drawn up by the Treasury Department. The new regulations, it is reported, will be in accordance with the terms of the Willis-Campbell bill, which prohibits the use of beer as a medicine and limits the amount of alcohol which may be prescribed to one-half pint in ten days and the number of prescriptions allowed a physician to 100 in three months. The Treasury Department is understood to be considering a change in the definition of a liquor prescription, to extend that classification to cover prescriptions issued for medical compounds of which alcohol is an ingredient as well as prescriptions for liquor, in computing the number which may be issued.

Legislation Proposed for Establishment of National Scientific Institute.—Establishment in Washington, D. C., under permanent federal support of an institution where problems of disease and health may be attacked cooperatively along general chemical, physical, biologic, pharmacologic and other necessary lines, with the object of mastering these problems for the common good of humanity, are the proposals of a bill shortly to be introduced in the House of Representatives by Representative Roy O. Woodruff of Michigan. Dr. Woodruff is a physician as well as a dentist and he asserts that the practical advantage of such an institution was demonstrated during the World War by the existence of the American University experimental station. In explaining the purposes of the proposed legislation Representative Woodruff said:

> Every single biologic change, in health and disease, is, in turn, fundamentally a chemical and physical process, subject to the rigorous exact laws of chemistry and physics. The problems of life and health, as safeguarded by medicine, are in their very nature so complex that rapid, successful advance demands the close cooperative effort of scientists of the highest type, each a leader in his field of science, willing to merge his talents and his efforts in the common problem for the common good. There is not, anywhere, a single organization whose purpose is a determined cooperative attack on the problems of disease and health, where intense chemical and physical research goes hand in hand with medical and biological study of disease. Thousands of lives are needlessly lost every day because of a lack of knowledge concerning chemical, physical and biological changes. Amazing results followed speedily the labor of expert chemists, physicists, biologists, pharmacologists and pathologists, from many sections of the country, while working in close cooperation and in conference hourly, under practically one roof, at the American University experimental station during the World War.

Bequests and Donations.—The following bequests and donations have recently been announced:

American Society for the Control of Cancer, $50,000, by the family of Mrs. Laske, New York City, in memory of her son, who died of cancer.

Miami Valley Hospital Society, Ohio, $50,000, to be used for the construction of a building for the treatment of deformed and crippled children, by the will of Mrs. Minnie Whitmore of Dayton.

Mount Sinai Hospital and New York Post-Graduate Hospital, each $25,000; Hebrew Orphan Asylum, United Hebrew Charities, each $5,000; St. John's Guild, $3,000; Hospital for Deformities and Joint Diseases, New York Society for Relief of Ruptured and Crippled, Manhattan Eye, Ear and Throat Hospital, New York City Home for Destitute Blind, Bellevue Hospital and Montefiore Home, each $2,500; Henry Street Settlement and Monmouth Memorial Hospital, Long Branch, N. J., each $2,000, by the will of Mrs. Julia Seligman.

Central Maine General Hospital, Lewiston, an additional $20,000 for the construction of a new wing by Col. Charles Osgood; the bulk of the estate of Charles Horbury of Lewiston, for the erection of a new wing.

Sisters of Charity of Incarnate Word, Galveston, Texas, three lots valued at $8,000 for a nurses' home, to be erected opposite St. Mary's Hospital, by Mr. Key.

Grace Hospital, Toronto, Canada, $5,000, in memory of his son, Dr. Stayner Ellis, by H. T. W. Ellis.

Sharon Sanatorium, Sharon, Mass., $5,000, for the endowment fund, under the will of Mrs. E. Florence Brett of Brockton.

St. Mary's Hospital, Cincinnati, $2,000; St. Francis Hospital, $10,000 in trust, by the will of Mrs. Katherine Reisser.

St. Anthony's Hospital, Rockford, Ill., $2,000, by the will of Mrs. Margaret Toms.

The New Hampshire State Hospital, Concord, $1,000, by an anonymous donor.

The Stillwater Sanitarium, Dayton, Ohio, the equipment and maintenance of an entire ward by the Exchange Club of Dayton.

The Harrodsburg Hospital, Kentucky, his collection of surgical instruments and medical library, by the will of Dr. William F. Pennebaker; also 585 acres of land and a large building for the establishment of a home and school for indigent girls.

FOREIGN

New Italian Medical Journal.—The first number of the *Gazzetta per il medico pratico,* a new medical journal published in Turin, appeared in December.

Tribute to Pestalozza.—At the conclusion of thirty years of teaching of obstetrics and gynecology, Prof. E. Pestalozza of Milan was recently presented with a testimonial signed by hundreds of his pupils and other friends, at a gala assembly in his honor.

Another Portuguese Journal.—Dr. Antonio Damas Mora, the public health officer of Angola, East Africa, has started the publication of a medical journal, *Revista Médica de Angola.* The first number contains a study of the epidemic of plague in Loanda in the early part of 1921.

Antiopium Campaign in China.—The president of China has appointed a special commission to proceed to Shensi, Kansu, Sinkiang, Jehol, Shuiyuancheng and other provinces, for the purpose of inspecting the alleged planting and cultivation of poppies in those districts, with a view to suppressing it.

International Otological Congress.—The tenth annual congress will be held, July 19-22, in Paris, France, under the presidency of Prof. Pierre Sebileau. Dr. Thomas J. Harris, New York City, is the secretary of the American Continuation Committee, and Dr. A. Hautant, 28 rue Marbeuf, Paris, is the secretary general.

Memorial to War Heroes.—At a special meeting of the New South Wales Branch of the British Medical Association, in Sydney, Australia, Dr. Fourness Barrington unveiled a tablet erected in the library of the branch in memory of the members of the medical profession of New South Wales who gave their lives in the World War.

Royal College of Physicians.—The roll of the Royal College of Physicians of London for 1922 includes the names of 367 fellows, 573 members and 14,177 licentiates. The senior fellow is now Dr. Peter Wallwork Latham (1866), the senior member is Dr. Clarence Cooper (1860), and the extra-licentiate is Dr. Edwyn John Slade King (1857).

Carnegie Hero Prize to Italian Physician.—The *Riforma Medica* relates that the Carnegie Foundation has awarded a silver medal to Dr. Silvio Porta, director of the public hospital at Recanati, Italy, because in January, 1919, he saved the life of a child of 3 with a grave form of diphtheria by aspirating with his own mouth the "pus" choking the child's trachea.

Physician Charged with Manslaughter.—In passing a sentence of twelve months' imprisonment on Dr. E. E. Willis of Durham, England, it is reported that the judge intimated that he took into account the professional consequences which must follow on such a conviction. Dr. Willis was convicted on a charge of operating on a woman for eclampsia while under the influence of alcohol.

Kussmaul Prize for Sauerbruch.—The Heidelberg medical faculty has awarded the Kussmaul prize this year to Prof. F. Sauerbruch, chief of the university surgical clinic at Munich, for his achievements in surgery of the lungs. This year happened to be the hundredth anniversary of the birth of Kussmaul. A recent summary of Sauerbruch's work in surgery of the lungs is given on page 1091.

Portuguese Medical Association.—The Portuguese Medical Association recently elected the following officers: president, Carteado Mena; vice president, Almeida Garrett; first secretary, Oliva Teles; second secretary, Martins Barbosa; treasurer, Eduardo Reis; member, Roberto de Carvalho; speaker, Mendes Corrêa; vice speaker, Costa Miranda; secretaries of the house of delegates, Abel Pacheco and Luiz Côrte Real, Sobrinho.

Honors for Physicians.—Dr. Mary Alice Blair and Dr. G. K. Bowes have received the Order of Saint Sava from the king of the Serbs, Croats and Slovenes, in recognition of their services with the Serbian Relief Fund and during the war.——Dr. Edith Brown of the Zenana Bible and Medical Mission, for twenty years principal of the Women's Christian Medical College, Ludhiana, Punjab, India, has had the honor of fellowship of the Punjab University conferred on her.

Milk Control in Japan.—At a special meeting of the special sanitary committee of the Central Society of Zootechnics, including Drs. Asano, Karasawa, Iwazumi and Nishisaki, in January, at Tokyo, the following resolutions regarding the improvement of milk control were adopted: (1) improvements of the quality of the milk; (2) better dairy accommodations; (3) classifications according to quality, and (4) control of the price by the direct supply of milk from the farms.

University of London.—Professors in the Faculty of Medicine, University of Paris, gave advanced lectures in medicine (in French) at the university during March. Prof. H. Roger, dean of the faculty, spoke on "Les Fonctions du Poumon"; Prof. A. Chauffard read a paper on "Syndrome Humoral de la Goutte," and Prof. P. Duval gave a lecture on "Données actuelles de la Chirurgie Intra-Thoracique. Three other lectures will be given by French professors at the Royal Society of Medicine in May.

Dermatology and Syphilography Congress at Paris in June.—The French Dermatological Society has organized a congress of French-speaking dermatologists and syphilologists to convene at Paris, June 6 to 8. The meetings are to be held at the Saint-Louis Hospital, the mornings devoted to demonstrations, the afternoons to reports and discussions on the three themes: epidermomycoses with exception of favus; venereal inguinal ulcers originating in lymph glands, and the colloidal reactions in syphilis, including the colloidal gold, mastic and colloidal benzoin reactions. Dr. Hudelo, 8 rue d'Alger, Paris, is in charge of the arrangements. The fee is 60 francs.

Tribute to Mangiagalli.—Professor and Senator Luigi Mangiagalli was the moving spirit in the foundation of the Milan medical graduate school and has been influential in promoting the interests of the other university centers of Italy, in public health matters, and the interests of the profession. On April 9 there is to be inaugurated at Milan a Mangiagalli Foundation to provide scholarships in the Milan medical graduate institutes, in honor of the fortieth anniversary of his assuming the chair of obstetrics and gynecology. This was at Sassari, but for many years he has been connected with the University of Pavia, as well as the clinical institutes at Milan.

International Committee of Experts on Disablement.—A meeting of this committee was recently held in Geneva, Switzerland, and was attended by representatives of organizations concerned with disablement in Germany, Austria, France, Great Britain, Italy and Poland, and representatives from the League of Nations and the League of Red Cross Societies. It was urged that a single institution of international character, which would collect and present information and hold international exhibitions of artificial limbs and other orthopedic instruments, be established. The International Labor Office was invited to organize a traveling exhibition, which should be lent, in turn, to each of the national associations for disabled men.

Cajal's Retirement.—Cajal will reach the retirement age on May 1, and a committee has been organized in Spain to organize a national demonstration showing the high regard in which the famous scientist is held. Both Dr. Recasens, dean of the Madrid Medical School, where Cajal teaches, and Dr. Royo Villanova, rector of the University of Zaragoza, where Cajal was born, suggested independently and practically at the same time, that proper steps be taken in the matter. An organizing committee was appointed, the president of which is Dr. C. M. Cortezo, president of the Royal Academy of Medicine, and the secretary, Dr. G. Pittaluga. The plans of the committee include a special edition of Cajal's works, the construction of a monument and an increase in the appropriation allotted by the government for the maintenance of the Instituto Cajal.

League for Mental Hygiene in Belgium.—The *Informateur des Aliénistes et des Neurologistes* comments as follows on the recent foundation in Belgium of a Belgian Ligue d'Hygiène Mentale: "Our friends in America must be well satisfied to see the psychiatrists and sociologists of old Europe following the furrow which they plowed open so fortunately and successfully. Under the influence of the liberal ideas which have presided in this new orientation, the care and treatment of the insane and of psychopaths in general are now undergoing a transformation everywhere." Belgium is the latest to fall into line, the new league there being modeled on the French league, as this was modeled on the United States organization. The officers of the Belgian league, which is already at work, are Dr. Vervaeck, president; Dr. Hoven, secretary, 11 rue de la Reinette, Brussels, and a board of nine members.

Radium in the Congo.—The *Scalpel* of Brussels quotes the bulletin of the Belgian Chemical Society to the effect that the sample of minerals from the Congo assayed by Professor Schoep of the University of Ghent yield 424 kg. of uranium and 139 mg. of radium to the ton. The minerals came from the Upper Katanga, in the concession of the Union Minière which has entrusted the industrial treatment of the uranium to the Belgian Société Générale Metallurgique de Hoboken, which has put up a factory for the purpose in the Antwerp district. Other deposits of the same minerals have been found at other points specified, and Professor Schoep has found two new kinds of minerals among them, extremely radioactive. He has named one "curite" and the other "kasolite," and announces that the crystals are soluble in nitric acid, and the radium salt can then be extracted from the fluid without passing through the usual calcination process.

Centennial of First Hysterectomy for Cancer.—Professor Zweifel writes to the *Münchener medizinische Wochenschrift* to recall the pioneer work of J. N. Sauter of Constance, a surgeon of 34, who exactly one hundred years ago removed the whole of a cancerous uterus, the first time this had ever been attempted. His patient lived free from recurrence for four months, succumbing then to an intercurrent disease. Langenbeck had removed a prolapsed cancerous uterus before this, but Sauter attacked the uterus in situ, the pains and bleeding having rendered the woman desperate during the six months the malignant disease had been recognized. Even at that date, a hundred years ago, Sauter, in reporting the case, denounced "the prescription writing and nonexamining physician" for having allowed the disease to reach such an advanced stage. Sauter had been studying for four years the feasibility of hysterectomy in these conditions, but hesitated long and yielded at last only to the pleading of the patient. With the discovery of antisepsis, Zweifel adds, the seed thus planted by Sauter fifty years before began to sprout.

Deaths in Other Countries

Dr. **James George**, surgeon during the Crimean War, who gave up the practice of medicine to take holy orders; died February 16 in England, aged 96.——Dr. **A. Désiré Waller**, director of the Physiological Laboratory, University of London, died March 11, aged 65.——Dr. **Benjamin Moore**, Whitley professor of biochemistry, University of Oxford, England, formerly professor of physiology, Yale University School of Medicine, New Haven, Conn., died March 3, aged 55, from influenza.——Dr. **H. Guilleminot**, professor of physiotherapy at the University of Paris, a leader in electroradiology and one of the group that publish the *Journal de Radiologie*, author of "New Horizons of Science" and "Matter and Life," aged about 55.——Dr. **R. Luzzatto**, professor of pharmacology and toxicology at the University of Modena, and writer on biologic chemistry, etc.——Dr. **R. de Azcue e Iribar** of Tolosa, Spain, aged 81.——Dr. **Duboys de la Vigerie**, secretary of the French Ophthalmologic Society, aged 70.

Government Services

Rehabilitation for Ex-Service Men

In California a definite scheme is being worked out for land settlement by the U. S. Veterans' Bureau, in cooperation with the California Land Settlement Board. Ten trainees in agriculture are now at Delhi and have taken up dairy, fruit and poultry farms.——The laundry industry offers a wide field for ex-service men who are competent to act as superintendents of laundries or foremen of the various departments. There is a constant demand regardless of season or industrial conditions for skilled mechanics.——In Florida, it is reported that 275 men are being trained in state universities and hundreds of others in industrial courses.——A bill was passed by the New York Assembly recently, appropriating $1,000,000 for the relief of disabled, unemployed soldiers. Married or single men with dependents will receive $45 a month and single men without dependents $30, provided they have been unemployed for fourteen days and their federal claims have not been settled. The maximum any veteran would receive is $250.——The U. S. Veterans' Bureau, South Bend, carries on a joint employment bureau with the American Red Cross, the Federation for Social Service and the American Legion.

Veterans' Hospitals Transferred to Bureau

President Harding, according to unofficial advices, will shortly issue an order transferring sixty hospitals for the treatment of disabled war veterans from the U. S. Public Health Service to the U. S. Veterans' Bureau. The order will effect a change in authority supervising more than 80 per cent. of the patients in government institutions. After the change the personnel of the hospitals will remain the same, the present superintendents and medical personnel continuing under the U. S. Veterans' Bureau's jurisdiction. All of the new hospitals for ex-service men now under construction by the Treasury Department will also be included in the transfer when completed. The number of disabled veterans being treated at the various hospitals, the nature of their disability and the kind of hospitals in which they are quartered are shown in the accompanying table.

NUMBER OF VETERANS IN VARIOUS HOSPITALS, AND NATURE OF DISABILITIES

Hospitals	General, Surgical and Medical	Neuropsychiatric	Tuberculosis
U. S. Public Health and Veterans' Bureau.	4.799	2,787	9,949
Army	752	71	1,033
Navy	980	282	30
Soldiers' homes	720	972	1,244
Contract hospitals	2,181	1,379	3,056
Total	9,432	5,491	12,312

Langley Bill Passes House

Appropriation of $17,000,000 to furnish additional hospital facilities for disabled war veterans has passed the house without a record vote. The measure known as the Langley bill places the authority for the expenditure of the appropriation in the hands of the director of the U. S. Veterans' Bureau, with powers to select sites and draw up plans for new buildings and for the remodeling of existing structures. At present the Treasury Department architect supervises the planning and construction of hospitals. An amendment added to the bill gives the President authority, by executive order, to transfer to the Veterans' Bureau any buildings under the jurisdiction of other departments of the government but no longer used by them, to be remodeled into hospitals. The measure went to the Senate.

Favorable Report on Hospital Construction

Chairman Langley of the House Committee on Public Buildings and Grounds made a favorable report to the house this week on the bill providing for the construction of additional hospital and outpatient dispensary facilities for disabled war veterans. The sum fixed in the bill is $17,000,000, to be immediately available.

Foreign Letters

PARIS

(From Our Regular Correspondent)

March 10, 1922.

Treatment of Varicose Veins with Direct Obliterating Injections

By giving intravenous injections of a neo-arsphenamin compound particularly rich in sodium, Dr. J. A. Sicard, associate professor of the school of medicine of the University of Paris, noticed that the neo-arsphenamin substance had an obliterating action on veins. This gave him the idea of using sodium carbonate to obtain obliteration of a vein as a means of curing varicose veins of the lower limbs. He uses a 10 per cent. solution of crystallized sodium carbonate, sterilized in an ampule made of hard glass to prevent the action of alkali on the glass. The injection of from 10 to 20 c.c. must be made directly into the varicose vein, as any diffusion of the liquid in the perivenous tissue may entail slough which would take long to cure. The injection is not painful if it is not made too rapidly and if the constrictor is taken off while the injection is being made. It must be repeated every two or three days, and daily if necessary. From five to twenty injections are generally needed to cure a varicose vein of minimal development. This process, which has the advantage of allowing the patient to attend to his daily occupation, was becoming generalized in France, until Sicard published the report of a fatal case occurring in the practice of one of his colleagues: A first 10 c.c. injection of a 10 per cent. solution of sodium carbonate was given to a woman, aged 59, who had large varicose veins on the leg. Everything went smoothly, and the usual reaction was noted, without phlebitis. Three days later, a second injection was made a little higher. The patient worked that day, but the next morning, while lacing her shoe, she died suddenly. As a necropsy was not performed, it was difficult to say whether or not death was due to embolism.

Sicard admits that if safety demands that the patient remain in bed after the injections, his method would lose much of its value. However, sodium carbonate is not the only substance that can be used to obtain curative sclerosis of varicose veins. Dr. Genevrier, while making intravenous injections of quinin salts against malaria, noticed that the injections brought about induration of veins. He then made use of this discovery in the treatment of varicose veins. The technic for these injections is described by Dr. Cheinisse in his new book, "Année thérapeutique" (Paris, 1922, Masson et Cie). He begins by making, at the root of the limb, a moderate compression with a rubber tube, and paints the course of the vein with a 5 per cent. solution of tincture of iodin. He then injects each varicosed vein and each varicose nodule (the syringe having a fine and sharp needle, preferably of platinum), every 7 or 8 cm., with one or two drops of a solution containing 0.4 gm. of quinin hydrochlorid and 0.2 gm. of ethyl carbamate to 1 c.c. of physiologic sodium chlorid solution. Finger compression of the vein above the puncture localizes the irritative action and also increases its intensity. Both legs may be treated in this manner at one sitting, provided the patient remains recumbent and at rest for two or three days. If he does not wish to stay away from his work, the injections can be made at intervals, depending on the development of the lesions and the age of the patient. The only precaution to be taken is not to let one drop of the quinin solution run out of the veins, as this would cause a severe inflammatory reaction. On the other hand, Dr. J. Montpellier and A. Lacroix of Algiers have just recommended, as a means of obtaining the curative fibrosis of varicose veins, the injection of a 5 per cent. aqueous solution of red mercuric iodid—commonly used in syphilis. Red mercuric iodid possesses the obliterating qualities of sodium carbonate, but not its disadvantages. The patient is recumbent, and an elastic tourniquet placed around the leg to make the nodules stand out prominently. At the site of the injection the vein is punctured with a fine needle attached to a syringe containing 2 c.c. of solution of red mercuric iodid. The tourniquet is loosened and from 0.5 to 1 c.c. of the solution is injected slowly. When the varicose veins are small, a transformation of the vein into a hard cord, in which there seems to be no circulation, is noted twenty-four hours afterward. In the case of large varicose veins, the reaction does not manifest itself before the fourth day at the earliest, the fifteenth day at the latest. Montpellier and Lacroix believe that these injections might also be useful in the treatment of certain disfiguring telangiectases, nevus angiomas, cirsoid aneurysms and, perhaps, arteriovenous aneurysms.

Pharmaceutic Specialties and Medical Societies

Dr. Guillon recently told one of the medical societies of Paris of a preparation with which he had obtained excellent results in the treatment of chronic urethritis. Dr. Guillon did not give the name of the preparation, but gave its chemical composition. One of the members asked Dr. Guillon to state the name of the preparation. This request brought about a general discussion on the subject of whether one may speak freely before a medical society regarding a preparation that has given good results, without being suspected of advertising the product. Dr. Maurice Cruet in the *Journal de médecine de Paris* points out that, owing to the evolution of therapeutics and the difficulty in preparing and presenting a great number of products, specialties are needed. Physicians should not prescribe only proprietaries, but they should be used when the patient's welfare demands their use. Dr. Cruet called attention to the fact that physicians are using proprietaries daily, perhaps without being aware of it. They bear a special patented name and no one has the right to use it except the manufacturer. It is true that they are chemical products whose formula is well known, and hence they are not secret remedies. However, Cruet believes that it is our duty to be on the lookout for good medicaments and to listen to colleagues who have made use of such a product and obtained good results. Another question to be answered in this connection is: Can the name of a proprietary mentioned before a medical society be published in the transactions of the society? The transactions of a medical society might then be interpreted as an official recognition given to the proprietary. Curet was willing to consent to such publication, on the ground that such transactions "published in a medical journal are read only by physicians." But every-day experience shows the fallacy of such an argument, because manufacturers of proprietaries do not hesitate to use such statements to advertise their products. Cruet made another argument which does not seem to be any more convincing. All medical journals, even the best, accept advertisements of proprietaries; hence it seems as if the journal were endorsing the product. In reality, however, there is more than a slight difference between an advertisement and a communication printed in a medical journal. We could go further and demand from medical journals a certain control even as regards advertisements. This would be a means of improving the industry of pharmaceutic specialties as it is being tried in the United States, thanks to the tireless efforts of the American Medical Association. Cruet admits that therapeutics is overcrowded with thousands of specialties, most of them absolutely useless, some harmful, while others, on the contrary, are useful, scientific and indispensable. The physician must know how to choose, and Cruet believes that the easiest way to accomplish this is to ignore any specialty advertised before the public in the daily press or by any other means. However, this solution is not entirely satisfactory; for not all products to which the manufacturers are trying to attract the attention, not only of the public but also of the medical profession, are always irreproachable. Nevertheless, it is to be regretted that medical journals do not always discriminate as regards advertisers. In a previous letter I mentioned a striking example of the shamelessness of "patent medicine" manufacturers (THE JOURNAL, Jan. 7, 1922, p. 43). On the other hand, the editorial published in the *Journal de médecine de Paris,* concerning Dr. Cruet's article, is not less suggestive. The editorial tells us that the constantly increasing number of medical journals "has forced them to be very diplomatic with advertisers. . . . You could not believe how we are threatened by some of our advertisers, when, by accident, the name of a competitive product is mentioned in an article." This admission shows clearly the abnormal control that some manufacturers of pharmaceutic specialties have of certain medical journals.

BUCHAREST

(From Our Regular Correspondent)

Feb. 15, 1922.

The Housing of Agricultural Laborers

Dr. Constantinescu, the president of the Housing Committee of the Public Welfare Office, recently delivered an address on the housing of agricultural laborers. He said that the necessity of better housing for the working classes in the rural districts is as great as if not greater than in the crowded cities of the country. Those who are acquainted with country cottages know that a large proportion of them are generally unwholesome. What better criterion could be wanted than the average health of the country laborer and his family? In spite of living under the best conditions so far as pure air, wholesome occupation and absence of excitement and temptation to excess are concerned, the rural family may nevertheless be said to be fairly riddled with tuberculosis, anemia, caries and other crippling and disabling diseases. The source of the mischief is the cottage in which they live. In many instances, laborers live under one roof with their domestic animals, cows, pigs, etc. Inquiry will reveal that the typical dwelling of the old-fashioned kind is damp, unventilated, ill drained, overcrowded and altogether unworthy of even a moderate modern standard of sanitary fitness. In many districts the supervision of cottage property is either a mere farce or nonexistent. Even were an active house-to-house supervision exercised, it is doubtful whether either inspectors or medical officers of health would be able to withstand for any length of time the constant friction likely to occur between them and cottage owners. Most of the appointments named are held for only a limited period. Insecurity of tenure in itself would be sufficient to rob the rural district authorities of the greater part of the working efficiency of the powers they already possess under the public health act and the housing of the working classes act. The committee of which Dr. Constantinescu is the president is going to elaborate a new law to be sanctioned by parliament to the improving of the housing of agricultural laborers.

The Connection of Organic Diseases with Lesions of the Sexual Organs in Women

In addressing the Medical Society of Bucharest, Dr. Ivanescu said that, in harmony with Galt's experiments on animals during the term of rut, conception and labor, the connecting link between the sexual organs and other organs under physiologic and pathologic conditions is not the nervous system but the circulatory system. As we know, the products of the internal secretion of the ovaries are carried away in the vascular tracts and there set up changes in the organs. The whole metabolism of the female (blood pressure, body weight, quantity of the urine) corresponds with the periodic course of sexual processes (menstruation, gravidity, etc.). It is the blood that is the intermediary between the changes in the uterus and those in the breast. Those cases of chlorosis in which there is faulty development of the aortic system are combined with anomalies of sexual development, as stated by W. H. Freund in Germany. The appearance of hemophylia and scorbutic diseases during pregnancy is explained by the demands made on the vascular system by relatively high blood pressure. Diseases of the heart are explained partly by mechanical processes, increase of intra-abdominal pressure, and partly by mechanical injury done to the endocardium, preparing it as a soil for the development of bacteria. Embolism of the pulmonary artery in the puerperium and in diseases of females is explained by the impoverishment of the blood (increase of fibrin, diminution in numbers of red blood corpuscles) that takes place during pregnancy, and also in lingering illnesses. Diseases of the vessels are sometimes associated with changes in the genitals. Cerebral affections (hyperemias) depend more on the influence of the circulation than on that of the nervous system. Even in the psychoses that arise in connection with gravidity, the puerperium and lactation, the circulatory apparatus plays a certain part. The nervous system is the connecting link, moreover, in certain cases, such as neuralgias, in connection with tumors, etc., and in reflex cramps and paralysis and puerperal polyneuritis. As regards hysteria in connection with pelvic disease, he looks on this as only the predisposing cause. Here heredity and unsuitable education also play an important part.

Phosphorus Necrosis

Dr. Levai, medical inspector of the Transsylvanian works, contributes an article in the *Erdelyi Orvosok Lapia.* This disease, he writes, is much more rare than in 1878, when the death rate among workers of yellow phosphorus was one in 413, whereas now, by the use of the red phosphorus, it is reduced to one in 2,400. Since the restriction of the trade using yellow phosphorus, the trade has greatly diminished. It was in 1845 that Lovinser published reports of his first case, which Bogdanik supported although his patients had bad teeth. Charles first observed the necrosis of the periosteum of bone. This was soon succeeded by two postmortems, one on a youth of 18 who had had his left ankle crushed. The wound was followed by nosocomial gangrene that necessitated amputation, but the periosteal destruction soon reached the trochanter. In the postmortem the shaft of the femur was involved in the necrosis, with hyperostosis of the cranium and ossifying periostitis in the alveoli, in the epiphyseal and apophyseal ends of the long bone, while other purulent centers were observed up and down the organism. Rose, about the same time, had a similar experience with another postmortem in which cortical changes were observed. Wegner then began experimentally to keep guinea-pigs in an atmosphere of phosphorus, with the result that the periosteum of the jaws and tibia became affected. Levai next relates his own experience, giving examples to show the course of the disease. A woman, aged 24, entered the hospital, Oct. 30, 1912, with pain in the upper jaw which had already existed one month. The gum was swollen and red, through which the sound struck against the bone. In January, a piece of the bone was removed, with a number of the teeth. The condition of the teeth in this case was strong evidence that phosphorus was not the only cause, although the patient worked in a phosphorus factory. After reporting sixteen cases with pathologic examples, he concluded with the remark that the necrosis is not caused by local irritation, as often assumed, but is effected through the blood, as the clinical evidence proves. The vessels become thrombic as if closed by dust, and portions die in wedges or cones. If bad teeth are present, the condition may have an infectious appearance. From the foregoing it will be noticed that the necrosis is less frequent in the upper than the lower jaw, and that it is more circumscribed owing to the greater anastomosis of the upper blood vessels. The long bones, for the same reason, are also seldom affected except in syphilis. As preventives, all factory hands should have different clothes for home wear, and before meals should wash their hands with oil, then warm water and soap, and finally with a permanganate solution. All teeth should be carefully watched.

VIENNA

(*From Our Regular Correspondent*)

Feb. 26, 1922.

Inquiry Regarding Cancer in Austria

In 1921, the Austrian Society for Cancer Research issued to the 6,000 practitioners in this country a leaflet asking them to answer a series of sixteen questions: Had the reporter observed any influence exerted on the appearance or frequency of cancer by the character of the house or soil, the kind of nutrition, or customs, or heredity or transmission? Had he observed frequency of such cases in certain houses or groups of such; among members of a certain occupation or profession, or in certain families (pedigree) or among married couples? Had he observed cases among persons below 40 years of age, different kinds of malignant growths in one family, one vocation, etc., variation of a benign growth into a malignant one, correlation of constitutional disease and malignant growths, etiologic relation between cancer and local syphilitic or tuberculous lesions or scar tissue or burns, or trauma? Did he notice any correlation between cancer of the mamma and lactation with virginity, cancer of the uterus and virginity, gestation or abortion, between gestation and development, metastatic growth of malignant disease; the influence of fever upon neoplasms? Did he observe early cachexia in small but very pronounced tumors? What was the fate of the cases after operation? Did they remain cured or had they any recidives? Did a primary tumor occur later on? Did he know of a medical treatment of cancer (folklore, quacks)?

As only 389 physicians responded (6.5 per cent.), this inquiry could not claim to be more than a mere casuistic collection, although the answers comprise an exhaustive investigation of the observations obtained in surgical wards and clinics. It appears that we are not entitled to surmise the existence of real "cancer houses"; but as regards occupation, it is a fact that waiters and public house owners show a high mortality of cancer of the alimentary tract (esophagus). Interesting data were obtained as regards the appearance of cancer in families. In ninety-two families, multiple cases were noted, among them, thirty-four families where all offspring suffered from malignant growths. In seventy-five instances, cancer was traced over four generations; in three instances, over three generations. A family suffering from gliomas, the father of which died of sarcoma of the humerus, is most interesting. Two generations suffered from it. Still we are not yet in a position to elucidate the actual conditions of heredity, nor can it be stated that the cases of "cancer à deux" in married couples are more frequent than we ought to expect. No stringent proof of the noxious or other influence of soil or of nutrition could be obtained from the investigations and answers received to these questions. More insight is obtained as regards age.

More than 700 cases of cancer and sarcoma were reported on, and it can be stated that about 10 per cent. of the men, and about 14 per cent. of the women were below 40.

If we consider cancer of the genital organs, 25 per cent. of the female patients were below that age. The youngest was a girl of a year and a half (cancer of the liver). In one of 9 years, there was cancer of the ovary. The youngest patient having cancer of the stomach was 16 years of age, while a boy 39 days old who was observed privately was said to have been born with the tumor, a sarcoma of the femur. It seems that the juvenile cases were a little more rapid in developing, and that warts, scars and burns can be irritated to rapid growth and to degeneration by traumatic impulses, even by simple excision. A definite relation between new growths and debilitating diseases could not be proved, nor any special disposition of any race (or creed), but well observed cases were reported in which cancer developed on a basis of old gumma, plaques, or syphilitic scars, or in which constant irritation by a carious tooth was present. Frequently trauma was mentioned in the etiology of a cancer, superficial or deep seated; also sarcoma was very often traced to trauma, especially in cases in which the limbs were affected. In these cases, 15 per cent. were of traumatic origin, according to the history. It appears that trauma is at least a serious predisposing cause. The relation of virginity and pregnancy to neoplasms can only be suggested, as cancer of the collum uteri is frequent in multiparous women. Exhaustive researches of the case histories in both gynecologic clinics in Vienna have shown that multiparous women are affected at a greater age by cancer of the uterus than women of no or few pregnancies. The problems require further investigation. The cure of cancer by erysipelas or fever-producing disease could not be proved. Epitheliomas of the face and cancer of the mamma are said to give a good prognosis in such an event. Scientific investigations, however, could not prove the case. The reverse was observed several times in von Eiselsberg's clinic. As regards the prognosis of the cases in which operation is performed versus those in which it is not, pessimistic feeling prevails. In the first gynecologic clinic, Professor Thaler could show that 38 per cent. of 2,000 patients operated on were living after five years; also that patients having cancer of the rectum could be saved, and some were alive after eight to eighteen years.

Mammary cancer also gives a bad prognosis, only a few of these patients being alive after five years. Recidivation occurred in many instances after from five to ten years. Repeated operation in such recidives in many instances resulted in a cure. Frequent reports were made concerning the reappearance of cancer many years after removal of a cancer of the breast or uterus or face. Such cases must be regarded not as metastatic, but as a manifestation of a carcinomatous disposition leading to the same disease in different localizations, a true reappearance of a primary tumor. On the other hand, several competent observers reported that patients with undoubted carcinoma or sarcoma (microscopic examination) remained comparatively well for years, without operation; medical treatment is of sufficient effect with them perhaps owing to a very low virulency of the tumor. Folklore and quackery still play a prominent part in the treatment of this condition, especially in the country, where the rural instincts of the population make the people shrink from surgical interference. Decoctions of violet, ointments consisting of wax, camphor, turpentine and various herbs, as well as mystic ingredients (powder of a mouse roasted alive or of the bones of a stillborn baby, or of the teeth of executed culprits) are recommended, in spite of the progress of the twentieth century. But no real benefit has been hitherto obtained from any treatment other than surgical. Radiology has not been considered in this inquiry.

Antialcohol Movement in Austria

An energetic campaign against alcohol has been organized both by the union of total abstainers and by medical-political circles, to which the government has had to give its consent "nolens volens." The chief cause for the sudden fight is to be found in the alarming increase of national expenditure for alcoholic drinks. A sum equaling the total expenditure of this country for administration has been spent in wine and beer alone. It is characteristic that it is the working classes chiefly who are responsible for this squandering of more or less hard earned income. With the rapid increase of wages—they are nearly 1,000 times as high as in peace time—the manual worker has turned to alcohol. It is a most serious blunder and a crime on the part of their politicians that the working classes have not been led to use their improved financial position for the attainment of a higher standard of life, in the shape of education and moral qualities, but have been allowed to drink. And as the majority of these liquids come from abroad, the money is altogether lost to the country. By cooperation of the organizations interested, the following lines are to be followed, until the country can be made completely dry: increase of the duties on imported alcohol to such an extent that the majority of the people cannot afford to buy, gradual reduction in the number of licenses of public houses and wine and beer stalls, restriction of the production of gin, whisky and liquor in the country, and transformation of vineyards into plough land. The second line of attack aims at the instruction of adolescents and youths by means of antialcohol lectures and exhibitions, and at influencing schoolchildren, as well as promoting these tendencies by giving premiums in factories, in agricultural circles and among women. Medical men will be encouraged to inform the population of the dangers to their offspring produced by alcohol. A sum of 50,000,000 kronen has been granted by the government for this purpose. Besides, the political parties have pledged themselves to exert an active and effective pressure on their followers along the same lines. The social-democratic party especially is quite alive to the danger arising out of present conditions.

Medical Examination Before Marriage

Some time ago, Professor Tandler, ex-minister of public health, suggested the introduction of a method of medical control of persons desiring to marry. As it is impossible at present to introduce a compulsory system of control for such persons, the magistrates of Vienna have decided to institute a facultative marriage permission; any person desiring to do so, will be in a position to obtain a fully competent certificate by a specially appointed medical officer, stating whether the applicant is healthy and free from disease transmissible to his presumptive partner or his children. Or, if he is found to be not fit or not yet fit for marriage, he is advised to postpone the ceremony until he is cured or to abandon the idea entirely. Of course, the application for such an examination would be free from any charges. If the examining medical officer should find it necessary, specialists would be consulted, who would give their report to this officer. In cases requiring a more complicated examination, a small committee of specialists would be asked to interfere. If the population should patronize this institution—it is hoped that the female partners will gladly avail themselves of this opportunity and demand such an examination also on the part of the would-be husbands—it is intended to appoint a woman physician also, who could be consulted by the women if they preferred. As the women are the chief sufferers from the effects of ill health, either by being infected by their husband or having to care for children who have inherited poor health, it is thought that this safeguarding of oneself will find much favor with them. Naturally, absolute professional secrecy is guaranteed. Professor Tandler is convinced that by being accustomed to such a preliminary examination before marriage, the population would, after a few years of voluntary submission to the idea, be imbued with the impression that marriage is not only a religious and juristic but also a social function, requiring judicious consideration for the coming generation. The magistrates of Vienna have devoted a sum of 300,000 kronen for the year 1922 for this purpose; the working out of this new departure will be watched with great interest by both the profession and the sociologists. It must not be omitted that a strong feeling prevails in many influential quarters that not so much the control of marriage is to be aimed at, but rather the control of the offspring, i. e., that couples not fit to produce healthy children or to bring them up in a healthy state should be allowed to produce abortion at an early stage.

PRAGUE

(From Our Regular Correspondent)

March 1, 1922.

Congress of Insurance Organizations

A general congress of insurance associations took place in Prague February 20-22. Representatives of all nationalities of the republic were present speaking in the name of more than five million insured persons who represent approximately three fifths of the total population of Czechoslovakia. The congress held its sessions under the chairmanship of Deputy V. Johannis. In a resolution, which has been adopted unanimously by the congress, the government was urged to accelerate as much as possible the bill on invalid and old age insurance which is being prepared by the ministry of social welfare. The lack of such a law is a heavy burden on the insurance associations, because those who would properly come under an old age or invalid insurance are kept under sickness insurance and thus help to exhaust the funds which already have been greatly reduced by unemployment and the epidemics of influenza. Steps have been taken to concentrate the system of insurance which has grown, up to now, along the lines of politics rather than those of practical need. The most important feature of the congress from the medical standpoint has been the stress which the representatives laid on the improvement of the medical service under insurance. It has been expressly emphasized that the associations have to consider their chief task at the present time to be the prevention of disease, for which tasks the machinery has yet to be developed. The concentration of different local associations will make it possible to create clinics and dispensaries for special treatment, such as hydrotherapy, roentgen-ray stations, phototherapy, and dental clinics. Special attention is to be paid to homes for convalescents, those suffering from nervous diseases, and the tuberculous, the proper treatment of whom will save enormous sums to invalid insurance hereafter. The congress has taken a firm stand against the free choice of physicians which the medical organizations wish to have introduced. The associations are afraid that this would mean financial ruin of the system because it introduces uneconomical methods and makes proper concentration practically impossible.

Association for Protection of Mothers and Infants

Up to date, there have been four national child welfare organizations in Czechoslovakia. The oldest one, which dates from Austrian times, is the National Committee for Child Welfare. During the war, an association for the protection of mothers and infants was organized. The American Relief Administration, which came to Czechoslovakia shortly after the end of the World War, organized on a large scale the feeding of undernourished children through special local commitees. It can be said with justice that this organization saved the lives of thousands of children in the times of the after war famine in Central Europe, and therefore won a considerable reputation. A year ago, the American Red Cross sent to Czechoslovakia a mission under Dr. H. O. Eversole which has had the task of bringing chiefly medical relief to the children who have suffered from the war. Since then, twenty-one model health centers for children have been organized in county cities. It can be seen from the foregoing that four more or less independent organizations for child welfare grew up; naturally a need for concentration began to be felt. Under the National Council of Social Hygiene, which is the central federation of the most prominent Czechoslovak private health and social agencies, a scheme for coordination has been worked out which is under way and has excellent chances of realization. The National Committee for Child Welfare has not been taken into the plan because its functions are chiefly social, whereas the rest of the organizations are primarily health agencies. The Association for the Protection of Mothers and Infants is working on a change of its by-laws which will make it possible for it to include in its program not only mothers and infants but also children up to 14 years of age. The question of feeding undernourished children will be especially emphasized in the by-laws so as to insure the continuity of the work which the American Relief Administration has been doing in the critical times for Czechoslovak children. As the work of the American Red Cross is to be taken over by Czechoslovak authorities in July of this year, this reorganization of the Association for the Protection of Mothers and Infants will make it possible to fuse with this organization also. In this way, two strong organizations for child welfare will be created, one of them for social and the other for health problems of the care of children. The new child health organization will be called the Association for the Protection of Mothers and Children and will be granted a large subsidy by the ministry of health, as it would not have sufficient financial resources for its big tasks in any other way.

BERLIN

(From Our Regular Correspondent)

March 11, 1922.

America's "Oriental University"

The Oriental University, so called, which, we understand, holds its charter under the state of Virginia, has during the last few years cut something of a swath even here in Europe. It first became known in Berlin a few months ago, in connection with the arrest of Professor W———, who is accused of endeavoring to obtain fraudulent possession of portions of certain estates by the practice of occultism, which illustrates the fact that one swindle often supports another. The investigations into the character of the Oriental University, which were made in connection with the foregoing case, have unearthed the fact that there are in Germany several persons holding diplomas issued by this institution. Among these is a certain Mistelsky, one of the most pernicious quacks in Berlin, who secured even the title of "professor" from the Oriental University; a Dr. Fischer, residing in a small town in Pomerania, which happens to be known as Rudolf Virchow's birthplace, and some others. The investigations revealed also the fact that the Oriental University has had its agents at work in Switzerland for some time and that they have clashed with the authorities there because of their shady practices. In the office of the state's attorney at Zurich are copies of sworn statements made by Holler, the president of the Oriental University in Washington. Holler maintains that the Oriental University possesses the legal right to grant academic degrees. Besides serving as head of the university, Holler is also a leader in a so-called theomonistic movement, and bears the title "Reverend Doctor Theodolithos, first theomonistic bishop." It is his purpose to found a theomonistic state, which he defines as "a practical, theocratic, patriarchal, communistic commonwealth, based on higher spiritualism." Holler regards himself as a medium, and maintains that he has had conversations with persons of antiquity. It is extremely regrettable that the state of Virginia should continue to protect with its name such a swindling institution, and thus allow the reputation of legitimate American institutions of learning to be tarnished in the eyes of Europeans, exerting thus much the same effect as the infamous Philadelphia University once did.

Extension of Sickness Insurance to the Family

For a long time, the members of the health insurance societies have been demanding that their families be included within the scope of social insurance legislation. It will be readily understood that physicians have resisted this demand because acquiescence in such a request would entail a still further and not inconsiderable limitation of free practice, with a consequent reduction of their income. The workingmen, who, since the revolution, have come more into the foreground, have now succeeded in getting their ideas accepted, and it looks as if the physicians would have to accommodate themselves to the innovation. In this connection, a large gathering of members of the *Aerztebund* (physicians' league) of Greater Berlin was held, a few days ago, at which the draft of a compact between the physicians and the executive committees of the health insurance societies was presented. One provision of the compact, which bears on the per capita compensation of physicians, is of paramount importance; namely, that, in the presence of a general epidemic, which entails increased service on the part of physicians, for which the fixed monthly fee would constitute very inadequate compensation, an increase in the allowance to physicians shall be made, which shall be based on the average normal service rendered during the previous four quarters. Also of great importance is the provision that, for the treatment of the families of volunteer members whose income is in excess of 40,000 marks, twice the customary fee must be paid by the health insurance societies. By this provision the health insurance societies have conceded the principle that the fees to be exacted from various classes of members need not necessarily be uniform. Violent opposition was aroused in the assembly by the provision of the compact which stipulates that the fee for the treatment of the family of a member shall be 1.75 of the regular fee; for physicians doubted whether such a payment would furnish sufficient compensation for loss of private practice. The compact, which for the present is to hold for only one year, was finally accepted by both sides, but the physicians declared that family health insurance could not be put on a permanent basis unless the additional payment was such as to make it possible for physicians to give careful treatment. Family health insurance is accordingly expected to be begun, April 1.

Draft of a New Law for the Combating of Venereal Disease

For many years, German physicians and German public health officials have endeavored to elaborate a law that would be more effective in combating venereal disease. The practical difficulties of the problem have stood in the way of an earlier promulgation of such a law. Owing to the war and to conditions that are the outgrowth of the revolution following the war, the need of such a law has been much increased, especially in view of the extraordinary increase of sexual diseases. A draft of the new law has recently been presented to the reichstag and has been referred to the *Bevölkerungsausschuss,* the committee of the reichstag that handles all matters pertaining to the restoration of the population of Germany. Certain measures of the bill are of special interest to physicians, namely, the created obligation upon venereal patients to allow themselves to be treated and furthermore their right to be treated; the prohibition of charlatanry; the making of venereal disease notifiable, under certain conditions, and the abolition of *reglementation,* or state regulation of the social evil. According to the provisions of this law, every venereal patient has the right to be treated, but at the same time there rests an obligation on him to request such treatment. Fortunately, only accredited physicians of the empire are entitled to give treatment. Section 2 of the bill reads:

> Any one who is suffering from an infectious sexual disease and has knowledge of the fact, or from his existing condition must naturally assume that such is the case, must present himself or herself to an accredited physician of the German empire for treatment.

Unaccredited persons or, in other words, quacks (who, since the passage in 1869 of the law granting unlimited liberty to practice medicine, have in general not been prohibited from treating venereal patients) are, by Section 6 of the bill, forbidden to treat for sexual diseases. The law prohibits also all treatment from a distance, by means of letters, printed matter and the like; that is, all treatment without a personal examination. Such a provision was necessary because there are unscrupulous physicians who advertise their services in the daily press. Of especial importance is the punishment to which a person affected with venereal disease exposes himself if he has sexual intercourse. According to Section 4 of the bill, any one who knows or, to judge from his condition, must assume that he is suffering from an infectious sexual disease and who, in spite of the fact, exposes another in the customary manner to the danger of infection is subject to imprisonment. Any one who knowingly provides treatment for a child who is suffering from venereal disease, without informing the parents in regard to the child's condition, also any one who gives syphilitic infants to healthy women to nurse, are liable to punishment. But, if it can be shown that the woman to whom a syphilitic infant was given to nurse is herself syphilitic, no penalty attaches to the act. Wetnurses are required to provide themselves with a certificate of health, which they can present when their services are under consideration. Advertising or recommending to physicians or pharmacists of drugs for the cure or relief of sexual diseases is not liable to punishment; but any form of public advertisement of such remedies that constitutes a menace to public welfare is punishable. It is to be hoped that this legislation will serve to suppress the advertising of remedies for the cure of sexual diseases, such as are regularly found in the lay press. Of great importance to physicians is the compulsory notification of venereal diseases, as mentioned above, in regard to which Section 7 says:

> Any one who gives medical treatment to a person who is suffering from an infectious sexual disease shall report the fact to the consultation center if the patient fails to keep up the treatment or if, by reason of his calling or profession, or his personal relations, he is a menace to other persons. If the patient does not comply with the instructions of the consultation center the fact must be reported to the proper public health authorities.

The foregoing provision was adopted only after much debate, and it will doubtless continue to be a matter of controversy, since varied opinions have been expressed in regard to the extent to which physicians are obligated to give notification. Some physicians think that only an anonymous notification is required, such as would suffice for statistical purposes. Others recommend that the names of patients be reported to a public health office, so that a definite record of every patient may be had, no matter whether it is absolutely needed or not. Most physicians are opposed to the latter form, partly because it will not, in their opinion, accomplish the desired purpose, and partly because it is not feasible. They urge that physicians would thus be overburdened with clerical duties and the patients would be more inclined than ever to consult pharmacists and quacks; furthermore, it would mean an additional heavy expense for the public health offices. The majority of physicians, therefore, favor a notification to the public health office or to a consultation center of the names of those patients who do not keep up their treatment, although the difficulties of even this restricted form of notification are by no means slight.

Of great general importance is the abolition of the so-called reglementation of prostitution. In recent years, prostitutes were compelled to register their names with the so-called *Sittepolizei*, or morals police, and were subject to regular medical inspection and police supervision. The *Sittepolizei* has now been abolished and a form of control has been substituted that has been in use for many years in the Netherlands, Norway, Switzerland, England, Denmark and Sweden. The experiences of these countries speak in favor of the abolition of reglementation. Attention has been repeatedly called to the fact that one bad feature of the reglementation of prostitution has been that medical inspection under police supervision gave the women concerned the right to claim that they were free from infection if they passed inspection, whereas the evidence goes to show that such was not necessarily the case. Furthermore, there is a general conviction that, among other reasons, owing to the wide development of manufacturing industries and the large number of persons out of work, the number of registered as compared with the number of clandestine prostitutes has been steadily growing smaller. For example, it may be noted that in Dresden there are only 250 and in Stuttgart only twenty-two registered prostitutes, whereas it may be assumed that there are hundreds—yes, possibly thousands, of clandestine prostitutes. According to the proposed law, only those who publicly and in such a manner as to offend against good morals and common decency urge others to commit unchaste acts or offer themselves for lewd purposes and those who, while leading a lewd life as a regular source of gain, do not comply with the regulations established for the supervision of professional prostitution, are liable to punishment. It is significant to note that these regulations affect men in the same manner as women, which is the result of a demand that was presented and contended for with great energy by the women of Germany. Since prostitutes are, in the nature of the case, open to the suspicion that they spread sexual diseases, they can, according to the proposed law, be compelled at any time to furnish a certificate of good health, to be examined, to accept treatment and, if necessary, to enter a hospital until they are cured. The consultation centers mentioned in the bill were established a few years ago by the communes and the *Landesversicherungsanstalten* in order that persons suffering from venereal disease might obtain gratuitous advice in regard to their condition and begin a proper course of treatment.

Marriages

John Judson Sale, Lieut., M. C., U. S. Navy, to Mrs. Helen Ewell Bull, both of San Francisco, March 10.

Norman R. Byers, Bedford, Ind., to Miss Phoda Elizabeth Trook of Indianapolis, March 15.

Samuel Kahn, Atlanta, Ga., to Miss Ruth M. Levine of New York City, March 18.

Abraham Strachstein to Miss Harriet Wolf, both of New York City, March 23.

Mark White to Mrs. Pauline Porter Muirhead, both of Chicago, March 25.

Deaths

Joseph Gerrish Ayers, Rear Admiral, M. C., U. S. Navy, retired, East Orange, N. J.; University of Vermont College of Medicine, Burlington, 1864; entered the Navy in 1864 as an assistant surgeon and served during the Civil War; retired, Nov. 3, 1901; died, March 22, aged 82, following a long illness, at the home of his son, Montclair, N. J.

Arthur Joseph Campbell, Middletown, Conn.; College of Physicians and Surgeons, Baltimore, 1885; member of the Connecticut State Medical Society; member of the board of education; at one time served as president of the Middlesex County Medical Society; died, March 5, aged 65.

H. Tod Smiser, Cynthiana, Ky.; New York Homeopathic College and Hospital, New York City, 1901; member of the Kentucky State Medical Association; former president of the Harrison County Medical Society; died, March 4, aged 45, at Phoenix, Ariz., from tuberculosis.

Milo Forest Hart, Kirklin, Ind.; Indiana University School of Medicine, Bloomington and Indianapolis, 1909; member of the Indiana State Medical Association; died, March 15, aged 39, at the Methodist Hospital, Indianapolis, following an operation for abscess of the bowel.

Anna Craig, Kings Park, N. Y.; University of Michigan Medical School, Ann Arbor, 1893; member of the Medical Society of the State of New York; member of the American Medico-Psychological Association; died, March 21, aged 65, from heart disease.

Dougal McDougall King ⊕ Denver; University of Toronto Faculty of Medicine, Toronto, Canada, 1902; member of the National Tuberculosis Association; author of "The Battle with Tuberculosis and How to Win It," in 1917; died, March 18, aged 43.

William W. Zimmerman, Richmond, Ind.; Pulte Medical College, Cincinnati, 1888; formerly mayor of Richmond and coroner of Wayne County; was found dead in his automobile, March 21, from cerebral hemorrhage, aged 66.

William Palmer Patterson ⊕ Newark, N. J.; University and Bellevue Hospital Medical College, New York City, 1909; attending physician at the Newark City Hospital; died suddenly, March 21, from heart disease, aged 47.

Leonardo Igaravidez-Landron ⊕ Coamo, P. R.; University of Vermont College of Medicine, Burlington, 1891; Faculty of Medicine, Cadiz, Spain, 1895; died, February 21, aged 54, at San Juan, from parenchymatous nephritis.

George C. Reid, Kaslo, B. C., Canada; McGill University Faculty of Medicine, Montreal, 1908; was drowned in Kootenay Lake, February 10, aged 42, when the gasoline launch which he was operating sank.

Frank A. Story, Lafayette, Ga.; Medical Department University of Tennessee, 1880; member of the Medical Association of Georgia; died, January 15, at West Armuchee, aged 68, from chronic nephritis.

Hanna C. G. Kindbom ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1910; member of the Philadelphia Pediatric Society; died suddenly, March 19, from cerebral hemorrhage.

Thomas Meriwether Jones, Hernando, Miss.; Washington University School of Medicine, Baltimore, 1869; Confederate veteran; former health officer of De Soto County; died, March 15, aged 76.

Seymour L. Corpe, El Monte, Calif.; Hahnemann Medical College and Hospital, Chicago, 1894; was killed, March 13, when the automobile in which he was driving was struck by a train, aged 55.

Louis William Schultze, New York City; Medical Department of Columbia College, New York City, 1880; formerly coroner of New York County; died, March 24, aged 65, from heart disease.

Cyrus Milton Thurston, Cleveland; University of Michigan Homeopathic Medical School, Ann Arbor, 1892; founder of the Grace Hospital, Cleveland; died, March 12, aged 56, in Toledo, Ohio.

Frank Brady, Leesburg, Fla.; Kentucky School of Medicine, Louisville, 1903; served as first lieutenant, M. C., U. S. Army, during the World War; died, March 16, aged 41, from uremia.

⊕ Indicates "Fellow" of the American Medical Association.

Louis Kelley Beatty, Washington, D. C.; Medical Department of Columbian University, Washington, 1881; member of the Medical Society of the District of Columbia; died, March 11, aged 65.

Emma Arabella Phillips, Greene, R. I.; Boston University School of Medicine, Boston, 1881; died, March 23, at the Homeopathic Hospital of Rhode Island, Providence, aged 78.

Victor Emil Max Koehler, Cincinnati; University of Leipzig, Germany, 1875; formerly instructor in the polyclinic, Ohio Medical College, Cincinnati; died, March 16, aged 69.

James Edward Burt, New York City; New York Homeopathic Medical College and Hospital, 1899; died, March 4, aged 65, from pernicious anemia, at the Flower Hospital.

Ernest William Downton ⊕ Starrucca, Pa.; Medico-Chirurgical College of Philadelphia, 1902; served in the U. S. Army; died, March 12, aged 49, from scarlet fever.

George Start Pearce, Pawling, N. Y.; Columbia University College of Physicians and Surgeons, New York City, 1895; died, March 7, aged 50, following a long illness.

John V. Chambers, North Lima, Ohio; Medical Department of Western Reserve University, Cleveland, 1895; died, March 19, aged 57, from heart disease, in Florida.

Emanuel Carmelo Skembare ⊕ Oak Park, Ill.; Chicago College of Medicine and Surgery, 1917; died, March 27, aged 27, following an operation for appendicitis.

John F. Butler, Wylie, Texas (years of practice, act of 1907); Confederate veteran; formerly postmaster of Wylie for ten years; died, March 11, aged 85.

Elmira Hertig, Blue Springs, Mo.; Northwestern University Woman's Medical School, Chicago, 1885; died, March 10, from cerebral hemorrhage, aged 70.

Charles Walter Conger, Indianapolis; Medical Department, University of Indianapolis, 1898; died, March 16, aged 49, at St. Vincent's Hospital, from uremia.

Robert C. Cottingham, San Francisco; University of Missouri School of Medicine, Columbia, 1883; died, March 11, aged 61, from cerebral hemorrhage.

Wilbur Grafton Hamlin, Arcadia, Ohio; Jenner Medical College, Chicago, 1906; formerly of Chicago; died, March 4, aged 51, following a long illness.

Francis F. Rowland, Pasadena, Calif.; Jefferson Medical College, Philadelphia, 1873; served twelve years as city health officer; died, March 12, aged 74.

Charles Ferguson, Los Angeles; Miami Medical College, Cincinnati, 1870; veteran of the Civil War; died, February 19, aged 79, from prostatitis.

Joseph George Mahoney, Shelton, Conn.; Yale University School of Medicine, New Haven, 1903; died, March 11, aged 42, from heart disease.

Kathrina Freudenberger ⊕ Tamaqua, Pa.; Woman's Medical College of Pennsylvania, 1898; died, March 9, aged 62, from chronic nephritis.

Samuel R. Gregory, Mount Union, Pa.; College of Physicians and Surgeons, Baltimore, 1896; died, March 9, aged 51, from pneumonia.

Furman Epaphas Perry, Jefferson, Ohio; Western Reserve University School of Medicine, Cleveland, 1888; died, March 12, aged 66.

William Henry Davis, Millerton, N. Y.; University of Maryland School of Medicine, Baltimore, 1903; died, March 12, aged 42.

L. H. Hall, Pocahontas, Ark.; St. Louis College of Physicians and Surgeons, St. Louis, 1899; died, February 20, aged 55.

Roswell Elliot Tilson, Pittsburgh; Northwestern University Medical School, Chicago, 1908; died, March 11, aged 38.

Eugene H. Coons, Gloversville, N. Y.; Albany Medical College, Albany, N. Y., 1886; died, March 6, aged 62.

B. F. Brown, Jefferson City, Tenn. (licensed, Tennessee, 1903); veteran of the Civil War; died, March 12, aged 73.

Joseph Simpson Wise, Lincolnton, N. C.; Kentucky School of Medicine, Louisville, 1890; died, March 12, aged 53.

James Monroe May, Gulfport, Miss.; Meharry Medical College, Nashville, 1892; died recently, aged 53.

Eliza Markell Mitchell, Kansas City, Mo.; University of Michigan, Ann Arbor, 1877; died, January 31.

Amos P. Rockey ⊕ Assumption, Ill. (licensed, Illinois, 1878); died, March 16, aged 70.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

"PROPRIETARY PREPARATIONS IN POLAND"

The influence of the work of the American Medical Association—through its Council on Pharmacy and Chemistry and The Journal's Propaganda for Reform in Proprietary Medicines—in protecting the public, both directly and indirectly, against the nostrum evil, extends year by year. Especially is it noticeable when new legislation is created. Recently the new Polish state introduced regulations governing the manufacture and sale of proprietary remedies. These regulations reflect the change in attitude that has taken place in the public mind in all civilized communities toward the responsibility of those who would make and sell preparations of the home remedy type. A recent issue of the English drug journal the *Chemist and Druggist* contained an excellent résumé of the new Polish regulations. We quote freely from this article:

"Proprietary medicines [in Poland[1]] must comply with the following requirements: (1) They must not be liable to decompose on prolonged storage; (2) Their composition may not resemble that of mixtures included in the national or any foreign pharmacopeia; (3) They must possess the therapeutic properties claimed for them by their producers. The manufacture and sale of a specialty in Poland requires a license, to be issued by the Minister of Health; in the case of specialties for veterinary use, consent of the Minister of Agriculture is also required. To obtain the necessary license, an application must be addressed in the first instance to the State Pharmaceutical Institute in Warsaw, which will transmit it to the Minister of Health for his final decision. The application must be accompanied by: (1) Two packages of the preparation in the form in which it is intended to place it on the market, or a sufficient quantity to enable a complete analysis to be made; (2) Designs of the labels and proofs of the enclosures, advertising matter, etc.; (3) In the case of compound preparations, a sufficient quantity of the single ingredients must be submitted to permit of their analysis, and also to enable the preparation of the product itself by the laboratory from the samples of its ingredients submitted for examination; (4) A complete description of the preparation, with disclosure of the formula and method of manufacture, as well as directions for use. The disclosure of the method of manufacture will be treated as confidential. Manufacturers of specialties are required to keep a special register, in which they will have to enter the amounts produced and the quantities of ingredients used in the process of manufacture; in addition every sale to wholesalers will have to be entered, with particulars of the quantity supplied, the address of the purchaser, and date of delivery. . . .

"Advertisements referring to specialties must be strictly truthful, and may not contain any statements likely to mislead the public. It is forbidden to make use of testimonials from patients or from 'owners of animals'. All advertising material, pamphlets, labels, etc., must be approved by the Minister of Health prior to their use or distribution. . . .

"The regulations also provide for a periodic control of all the specialties on the Polish market. To this end the State Pharmaceutical Institute is empowered to require, once every year, from any pharmacist or wholesale house, the delivery of the necessary packages of each specialty to carry out its analysis. . . .

"The Polish regulations have much in common with recent Austrian and Spanish legislation on proprietary medicines, and the influence of the English Proprietary Medicines Bill is apparent in the prohibition of the use of testimonials. While no quantitative disclosure on the label of the composition of the preparation is required, except in the case of potent drugs, the fullest details are demanded from the manufacturer, this information to be of such a nature as will enable the State Pharmaceutical Institute to prepare itself the preparation for the purpose of verifying the manufacturer's statements. The obligation by the manufacturer to keep a record not only of his production, but of all his supplies to wholesalers, is also a new feature."

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[1] The regulations apply to all of the new Polish state except that part which formerly belonged to Prussia, where the German regulations still operate.

ALBERT ABRAMS

In this department of The Journal for March 25 appeared an article on Dr. Albert Abrams and some of his discoveries. We have now received a letter from a physician, who asks that his name be not published, reading:

> "*To the Editor:*—I notice in your article on Albert Abrams the statement that he was born in 1864 and received his degree of M.D. in Heidelberg 1882; if these data are furnished by himself and not a typographical error—though I find the same data in the American Medical Directory for 1916—then it is high time that some board of censors should make a careful examination of his credentials.
>
> "Anybody, like myself, who is acquainted with medical matters in Germany knows that it is preposterous to assume that anybody could obtain the degree of M.D. in any German university at the age of 18 years.
>
> "M. D., Leipzig."

Eighteen *is* rather young to receive an M.D. degree from Heidelberg! By again going over the various sources of information available the following data were collected: In Polk's Medical Directory for 1886 Dr. Abrams' name appears as a graduate of the University of Heidelberg, 1882, and of Cooper Medical College in 1883. The records we have from these two institutions confirm these dates. The year of Dr. Abrams' birth seems less clear. In the early part of 1902 the American Medical Association sent Dr. Abrams a blank for him to fill out for a permanent record. This was returned in due course and, according to it, Dr. Abrams was born in San Francisco Dec. 8, 1863. This same date appears in various editions of "Who's Who in America." A blank sent by the A. M. A. Directory Department to Dr. Abrams in 1908 asking for a personal biographical report was returned Aug. 20, 1908; it gave Dr. Abrams' date of birth as Dec. 8, 1864. A similar blank sent in the earlier part of 1909 was returned giving the same birth date. We learn, however, that an affidavit executed in 1917 states that Albert Abrams was born in San Francisco Dec. 8, 1862.

Just how long Dr. Abrams attended Heidelberg University before he was granted the M.D. degree, we do not know. Apparently, at that time the standards for admission to that institution were not especially severe and the length of time one would have to attend before being admitted to an examination seems to have depended on the educational credentials that the matriculant offered. What credentials Dr. Abrams submitted, we do not know. Assuming that the earliest date (1862) represents Dr. Abrams' date of birth, he could have been but twenty years old when he received his M.D. from Heidelberg. This indicates a precocity that might have forecast Dr. Abrams' later achievements.

Throughout the records of Dr. Abrams' educational credentials there appears the statement that he also graduated from the "University of Portland" in 1892, receiving the degree of A.M. From references available we have been unable to find any record of a "University of Portland."

QUEEN OF ANTISEPTICS

This preparation is marketed by a person in Aurora, Ill., calling herself "Mme. Leonard." The following claims appear on the label:

> "A Perfect Vaginal Germ Destroying Powder and Applicator.
>
> "Antiseptic, Anodyne Adhesive, Astringent.
>
> "Action instantaneous and lasting, non-irritating, scientifically prepared. Use as directed."

The preparation comes in a package containing approximately 79 grams (about 2¾ ounces) and is in the form of a white, odorless powder. It was recently examined in the A. M. A. Chemical Laboratory, which reported:

"The material was not completely soluble in water or in alcohol. The portion of the substance soluble in alcohol responded to tests for boric acid. This portion contained neither mercuric chlorid, salicylic acid, benzoic acid nor chinosol, substances frequently used as antiseptics. Such astringents as ferric chlorid and tannic acid were absent. The part insoluble in alcohol gave tests for a mercury compound, a chlorid and ammonia. This indicated the presence of ammoniated mercury. Quantitative analysis showed that the preparation is composed essentially as follows:

"Boric acid	97 per cent.
"Ammoniated mercury	3 per cent."

The 2¾ ounce package of Mme. Leonard's "Queen of Antiseptics" sells for $2.00; the approximate cost of materials (1922 prices) is 2½ cents.

Correspondence

PROPOSED ANNUAL SUMMARY OF DIPHTHERIA MORTALITY

To the Editor:—The annual publication as to the prevalence of typhoid fever throughout the United States has been of much service as a source of information and a stimulus to our work. It has been suggested to me that a similar report in our fight against diphtheria might be of like value. I can see difficulties that are presented by the different character of disease found in diphtheria from that of typhoid fever, but it seems to me that well edited and authenticated reports published once or twice a year, giving not only the number of cases reported and the number of deaths, but also the actual procedures used by the health departments in controlling the disease, might be of value to the workers.

C. Hampson Jones, M.D., Baltimore.
Commissioner of Health.

[Note.—The suggested survey has been under consideration for some time and will probably be undertaken. The matter, however, is not as simple as in the case of typhoid, in which, moreover, the obtaining of essential facts at the outset was not at all easy.—Ed.]

"IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?"

To the Editor:—In his consideration of the question "Is the Control of Diphtheria Leading to Eradication?" (The Journal, March 4, p. 630), Dr. Cumming, under the section headed "The Four Applied Factors," brings out that the "(1) clinical and laboratory diagnosis of the disease and the isolation of the patient; (2) laboratory identification of the healthy carrier and his isolation" are strictly regarded during epidemics but are probably not so strictly adhered to during interepidemic periods. This, no doubt, is true in many parts of the country, not only in rural districts but also in urban communities. Not sufficient attention is paid by health officers to be constantly on the alert and to be constantly driving at this disease by taking large numbers of cultures, during interepidemic periods, of healthy persons who have been in any way connected with clinical cases. Then, when carriers are determined by this culturing, they in turn should have cultures taken, and cultures should be taken of every person coming in contact with these carriers, within a reasonable number of days of the detection of the carriers, and so on, thus leading to an investigation of an endless chain of people. In one of our largest cities, I was told a few years ago, the children of the family of a clinical case of diphtheria were allowed to return to school without a culture ever being taken, either at the beginning or at the termination of quarantine. Of course, this city sent many children to school who were diphtheria carriers.

Much criticism is brought to bear on communicable disease directors by the public and by members of the medical professon who claim that health departments are unjustly quarantining carriers because of the fact that the carriers may have avirulent organisms. It should be the duty of a health officer to quarantine all carriers of bacilli, morphologically diphtheria, until they have been proved avirulent. For a period of three or four years in the Baltimore City Health Department, in a series of cultures taken from persons who came directly or indirectly in contact with clinical cases of diphtheria, 97 per cent. were virulent (Hachtel and Bailey: *Am. J. Pub. Health* **10**:42 [Jan.] 1920); therefore it seems that our fight against diphtheria by our method of quarantining carriers the same as we do clinical cases is justified.

Studies based on the classification of deaths as to the type of diphtheria extending over a period of two years have proved that, in Baltimore, 82.11 per cent. were due to the laryngeal type of the disease (Hogan, J. F.: The Journal, Aug. 27, 1921, p. 662). It seems to appear from these studies, assuming that other cities have the same type of diphtheria as Baltimore—and we have no reason to believe that they have not—that in more than four fifths of the 15,000 fatal cases, or 12,000, the patients are dying of the laryngeal type of the disease. We must take into consideration one or two factors for this high toll of human lives in laryngeal diphtheria: It is neglect either on the part of the people or on the part of the medical profession. Once laryngeal diphtheria develops and progresses to such an extent that there is dyspnea and a beginning cyanosis, antitoxin will not save life. Intubation must then be resorted to. Frequently when physicians are called to see a child with laryngeal diphtheria, the child is suffering with retractions of the interspaces, and the physician will give a large dose of antitoxin thinking that this will act in from six to eight hours as the textbooks state (and which is most erroneous), and that therefore it will not be necessary to intubate. This false belief by physicians, based on false statements in textbooks, is largely responsible for this ignorance; that is, responsible for it plus the lack of training of medical men in infectious diseases, which lack of training is the fault of medical educators. Propaganda should be started by the American Medical Association to teach physicians the proper time to intubate, and not to wait until cyanosis appears and not to depend on antitoxin. I am not trying to discourage large doses of antitoxin, as such should be given and be given as early as possible; but too great confidence is placed in this remedy in laryngeal diphtheria.

If 15,000 deaths occur annually in the United States from diphtheria, it is to be recommended that health officers classify their death certificates to ascertain exactly what percentage is due to the laryngeal type; and, if the country as a whole has the same percentage of laryngeal deaths as Baltimore has had for the last three years, it appears that about 12,000 of the deaths occurring in the United States annually are due to the laryngeal type of the disease. On investigation, we find that, in Baltimore, 83.12 per cent. of the laryngeal deaths are of patients under 6 years of age; therefore most of the laryngeal deaths occur in the preschool age, and performing Schick tests and immunizing schoolchildren with toxin-antitoxin is of little value in the control of diphtheria leading to eradication; nor is it lowering the death rate. If 12,000 deaths occur annually in the United States from laryngeal diphtheria, we must teach our physicians to intubate earlier, as well as to give antitoxin and not to depend on antitoxin alone.

John F. Hogan, M.D., Baltimore.

Director, Bureau of Communicable Diseases, City of Baltimore Health Department.

To the Editor:—May I call attention to a conclusion reached by Dr. James Gordon Cumming in his article, "Is the Control of Diphtheria Leading to Eradication" (The Journal, March 4). It reads: "Eradication of diphtheria will not come through the serum treatment of patients, by the immunization of the well, or through the accurate clinical and laboratory diagnosis of the case and the carrier followed by quarantine; rather it will be attained through the mass sanitary protection of the populace, subconsciously practiced by the people at all times."

Medical men of eminence in the profession criticizing the work of sanitarians (and this includes physicians) should do so in a helpful and constructive manner.

The medical profession and modern public health officials have labored too hard to have their efforts thoughlessly criticized from authoritative sources. From our own experience in this city alone we have learned that if diphtheria is treated adequately and efficiently, diphtheria antitoxin is a true specific. The other sanitary aids in this endeavor are correlating the effectiveness of diphtheria antitoxin in the prevention of this disease particularly among those most susceptible. We also know that immunization through either immediate use of diphtheria or the protracted toxin-antitoxin method confirmed by the Schick test for those susceptible has worked well. We know that immunization in a large percentage works well, that today, through publicity, more physicians are on the lookout and are more careful in their physical examinations to determine the presence or the cause of sore throats or false membranes, and in many instances they are using laboratory aids (more than ever), as is shown by trial cultures submitted. To nullify all these efforts and to place eradication of diphtheria simply on mass protection of the populace seems to me a conclusion as far fetched as it is untrue.

Diphtheria is one of the awful diseases of early childhood. In this city it claims annually from 2,190 to as low as 1,045. The death rate of diphtheria per thousand population in 1901 was 0.58, whereas in 1920 it was reduced to 0.18. We feel that the progress that has been made in New York in the control of this disease has been splendid.

Before the days of diphtheria antitoxin, nearly every throat specialist had one or two sets of tracheotomy or intubation instruments, whereas today these are practically obsolete. In my first five years of practice I did from one to three intubations a week. Since 1895 I have not done a single one of these operations.

S. Dana Hubbard, M.D., New York.

Director, Bureau of Public
Health Education.

A NEW (OLD) SIGN IN INTUSSUSCEPTION

To the Editor:—On the tactile identification of a palpable tumor by abdominal and bimanual methods of examination, conducted under general anesthesia, in an infant suffering from intussusception depends the situation of the lesion and the duration of the disease. For practical purposes of diagnosis, a negative result of such an examination can be disregarded in the presence of the symptoms characteristic of this type of intestinal obstruction. Thus, sudden abdominal pain accompanied by shock, with recurring colic attended by pallor and high pitched crying, followed by frequent stool motions of small fecal material and blood-streaked mucus, is sufficient evidence to justify immediate laparotomy.

Unfortunately, however, not all patients conform to the expected symptoms, and it has been my experience that in the majority of cases vomiting is an early symptom, and there is a history of total constipation with occasional periods of straining until a few hours later, when a large amount of blood clot is passed by rectum. There are other difficulties encountered in the diagnosis of intussusception. Overdistention of any hollow muscular viscus will cause colicky pains. Acute enteritis may be confused. In the routine rectal examination, a tendency to sigmoidal prolapses may be mistaken for intussusception. A consideration of the gross pathology of intussusception discloses a triangle of mesentery interposed between the invaginated intestine exerting traction on one side of the bowel so that the prolapsed end at the neck of the intussusception is turned toward its mesenteric attachment. In consequence of this drag of the mesentery, the aperture of the bowel at the distal extremity of the intussusception is drawn to one side, and the cylindric tumor assumes a concentric outline.

In the American edition published sixty-six years ago, Carl Rokitansky, remarking on this mechanical distortion, observes:

> "First, the invaginated portion does not lie parallel with its sheath, but always offers a greater curvature than the latter, the inverted tube being compressed on its concavity into transverse folds. Secondly, the orifice of the invaginated portion of the bowel does not lie in the axis, or in the center of the sheath, but toward the side; and following the traction exerted on it by the mesenteric fold that belongs to the inverted intestines, it is directed toward the mesenteric wall of the sheath; the opening is not circular, but represents a fissure. This affords a diagnostic sign for the examination of intussusceptions of the rectum which are within the reach of manual exploration." (Path. Anat., Vol. 2, p. 52).

Maxwell Quackenbos, M.D., New York.

"A NEW HYSTERECTOMY KNIFE"

To the Editor:—In The Journal, March 25, Dr. W. H. Taulbee of Maysville, Ky., referring to the "new hysterectomy knife" presented by me in the issue of February 25, says that he has been using this knife for many years and that it was devised by Dr. Howard Kelly and listed by the Kny-Scheerer Company. I immediately submitted his criticism to Harvey Pierce & Co., the Philadelphia branch of the Kny-Scheerer Company, who replied:

> I have your note relative to The Journal correspondence on the new hysterectomy knife, in which Dr. Taulbee asserts this knife is similar to the hysterectomy knife made by Dr. Howard Kelly many years ago. I am enclosing you a cut of the Kelly spud, as we used to call it, which is an entirely different instrument, as you will see, from your knife. I am also sending you a Kelly hysterectomy spud, the knife which Dr. Taulbee referred to. You can see very clearly that this is not in any way like your knife. It is entirely different.

This correspondence with the Kny-Scheerer Company ought to prove conclusive with regard to Dr. Taulbee's criticism.

William Edgar Darnall, M.D., Atlantic City, N. J.

"ADMINISTRATION OF ETHER BY THE USE OF A SIMPLE MECHANICAL ETHER DROPPER"

To the Editor:—A number of years ago I devised an apparatus similar to the one described by Odén and Foshee (The Journal, March 18, p. 803). No doubt, essentially the same apparatus has been employed by other physicians wearied of the clumsy and laborious manual method of holding the anesthetic container. The apparatus with a clamp holder on the operating table has disadvantages frequently, getting in the way or being disarranged by the patient during the excitement stage, when patient is large and has to be turned or removed from the table, or when the operative field is toward the cephalic end of the table. A simpler method is to have the gooseneck holder attached to a light, portable tripod stand, such as is used for the smaller size electrotherapeutic lamps; even a tripod music stand may be improvised to support the gooseneck attachment in place of clamping it to the table. Still another improvement is to have a three cell holder rotating on a pivot at the end of a gooseneck so that ether, chloroform or a volatile oil may be administered in turn, as desired. As is well known, prior administration of a volatile oil such as suggested, oil of lavender, etc., serves kindly with children and nervous adults undergoing anesthesia.

No claim for originality is, of course, here made; but it is hoped that the suggestions may draw attention to the essentials of the device, and thereby lead other physicians to get away from the intolerable drudgery attendant on the old-style manual method of holding the anesthetic container.

J. B. H. Waring, M.D., Blanchester, Ohio.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"YEAST FOAM" AND "HORMOTONE"

To the Editor:—1. A few days ago I received a sample bottle of "Yeast Foam Tablets" from the Northwestern Yeast Company of Chicago. The usual line of bunk advocating its usefulness, of course, accompanied the tablets. Kindly let me hear just what's what about those tablets.

2. Also tell me what you know about "Hormotone," a tablet prepared by the G. W. Carnrick Company of New York City.

H. B. Moe, M.D., Blanchardville, Wis.

Answer.—1. Shorn of verbiage, "Yeast Foam Tablets" are claimed to be dried yeast in the form of tablets. They are put up in typical "patent medicine" style, and are "recommended" by the yeast factory which markets them "as an aid in the treatment of loss of appetite, run down condition, anemia, convalescence from sickness, boils, pimples and certain other skin troubles." While it has been shown that persons living on an ordinary diet containing a reasonable proportion of fresh vegetables are certain of obtaining a plentiful supply of vitamins ("Our Knowledge of Vitamins," The Journal, March 11, 1922, p. 734), the Yeast Foam Tablets advertising would lead the public to believe that it is in imminent danger of suffering from an inadequate supply of vitamin B. In the advertising it is averred that the yeast tablets were made available because of an "insistent and prolonged demand for a pure therapeutic [sic] yeast" ("The Demand for Vitamins," The Journal, March 18, 1922, p. 810), and, with a show of concern for the public welfare, the purchaser of Yeast Foam Tablets is asked to send his name and address so that the yeast concern "will be enabled to keep in touch with the progress you are making and give you much valuable information in respect to Yeast Foam Tablets as a medicinal agent." Though the Yeast Foam propaganda is plainly addressed to the public, specimen packages are being sent to physicians, and thus the profession is given once more the opportunity to act as an unpaid pedler.

2. Hormotone, "a pluriglandular tonic for asthenic conditions," is sold by the G. W. Carnrick Company in the form of tablets for oral administration. Each tablet is said to contain $\frac{1}{10}$ grain of desiccated thyroid and $\frac{1}{20}$ grain of entire pituitary, together with the hormones of the ovary and testes —the amount and the form in which the latter are supposed to be present are not given. The Council on Pharmacy and Chemistry refused to accept Hormotone for New and Nonofficial Remedies.

LACK OF TOXICITY OF SMALL DOSES OF COPPER CHLORID

To the Editor:—We are using a "pure" copper hot water tank. The city water running into it is chlorinated. Water delivered at the faucet has turned the bathtub green. The water assays $\frac{1}{50}$ grain of copper chlorid per gallon. Would drinking two glasses of this hot water daily before breakfast in any way endanger the health? In other words, could you tell me the toxicity of copper chlorid, if continued over a long period?

E. F. Smith, M.D., Swissvale, Pa.

Answer.—The toxicity of copper salts is relatively low and the absorption is very limited (Sollmann: Manual of Pharmacology, 1917, p. 783). It has been reported that even on continued use quantities of copper sulphate up to 0.5 gm. a day have been shown to be devoid of untoward effects; these quantities were not continued indefinitely. As the amount of copper chlorid which you report ($\frac{1}{50}$ grain in 1 gallon) is less than 1 part in 2,000,000, it is improbable that harm will result from drinking two glasses of the water each day.

Medical Economics

PHYSICIANS' INVESTMENTS

A subscribing physician has just sent us a letter received from a New York Company which carries the legend "Investment Bankers" beneath its name on its letter-heads. As this letter is typical of other letters sent out by similar companies, we are publishing herewith an exact copy, following which we are analyzing the various statements made, which show to any one initiated in the legitimate investment or brokerage business that any company sending out such a letter is probably unsound.

Here is the letter:

> Dear Dr. ———:
>
> Very glad you have given us an opportunity to send you the Record Book, which we are enclosing complimentary and also our interesting booklet, "How You Can Become Financially Independent." The following are a few of the unusual advantages of the BLANK 20 PAYMENT PLAN:
>
> No Margin Calls.
> Only 6 per cent. interest is charged on unpaid monthly balance.
> We originated the two above protective features.
> We are dealers, not brokers and for your protection as well as our own we specialize in good, dividend-paying securities listed on the New York Stock Exchange.
> You may take profits at any time — this closes your account and remittance will be promptly mailed.
> You may close your account at any time upon notice to us and we will promptly remit balance due you. You will thus always be in a position to take advantage of the changing condition of the market.
> You are credited with an amount equal to all dividends paid.
>
> CONFIDENCE
>
> We fully appreciate the fact that CONFIDENCE is the very foundation of an Investment business, and are pleased to refer you to our banks.
>
> Harriman National Bank, 527 Fifth Avenue, New York City.
> U. S. Mortgage & Trust Company, 55 Cedar Street, New York City.
>
> There never was nor never will be a better time than RIGHT NOW to invest in GOOD stocks with large dividend yields—stocks of proven worth and that have excellent possibilities for substantial profits.
>
> Use the handy order blank in back of booklet—or better—wire in your order TODAY at our expense "at the market" using the enclosed telegraph blank—your remittance can follow by mail.
>
> TODAY—NOW is better than tomorrow.
>
> Yours faithfully,
> ——— & COMPANY,
> By ———
>
> A personal suggestion is enclosed for your consideration.

The foregoing letter purports to come from a firm which can assist its customers to become financially independent, following which certain "unusual advantages" enjoyed through dealing with this company are disclosed. Let us take up these "advantages."

No Margin Calls. This means that the company does not intend to call upon its customers for additional margin or security. When any legitimate broker purchases any amount of stock for a customer, the customer is naturally required to put up some sort of a deposit. This deposit may be in the form of cash or of marketable securities. In other words, when you go to a broker and place an order for 100 shares of Blank Stock at $100 a share, costing $10,000, the broker in effect will make you a loan on this stock which you are buying. As he cannot tie up his own limited capital in this way, he reserves the right to rehypothecate the security at his bank. His bank, being a careful institution, will lend him only a conservative amount—say 75 per cent. of the market value of this security—in other words, $7,500. Therefore, when the broker requires you to put up a "margin" of $2,500, he is in reality lending you $7,500 on the stock which you are buying, and this $7,500, together with the $2,500 cash which you put up, pays for the stock which is being bought. In case the stock should decline, the broker's bank will call on him for additional security, so that it will at all times be protected through lending only 75 per cent. of the value of such security. It is, therefore, natural to assume that the broker in turn must call on you in the same manner. In case you are unable to put up additional cash or security in order to give the desired protection to the broker, which he in turn can pass along to his bank, he is quite justified in "selling you out." This is sound practice, and must be followed by all sound brokers. One reason why many houses have recently failed in New York is that they were so anxious to obtain business that they were willing to operate with customers on smaller margins than sound houses demanded, with the result that a declining stock market exhausted all the assets of such companies. Therefore, it is well to beware of any house which advertises "No Margin Calls."

Only 6 per cent. interest is charged on unpaid monthly balance. Here again is an advertised "advantage" which might be quite likely to work to the considerable disadvantage of the broker. When, in effect, the broker makes you a loan on stock which you are buying as described above, he must naturally charge you interest, for the reason that he in turn must pay interest to his bank from which he obtains the money to carry on his business. Interest rates fluctuate. Most brokers' loans with their banks are "demand" or "call" loans. In times past, "call" money in New York has fluctuated from as low as 3 per cent. to as high as 30 per cent. It is not likely that any broker could afford to charge his customers 6 per cent. when his bank might be charging him anywhere from 6 to 30 per cent.

We originated the two above protective features. This is not a true statement, and, if it were, it can be seen from the foregoing analysis that it is not a protective feature from the broker's point of view, and therefore it is not a protective feature for the broker's customers.

We are dealers, not brokers and for your protection as well as our own, we specialize in good, dividend-paying securities listed on the New York Stock Exchange. It is possible that this company may have specialized only in securities listed on the New York Stock Exchange. However, the place to go to buy securities listed on the New York Stock Exchange is to some member of the exchange. It would be necessary for this nonmember to pay a commission on all stocks bought on the exchange, and, as he is not in business for his health, he would charge you a commission on top of the one he paid. It can, therefore, be seen that money could be saved by buying the same stock from a member.

You may take profits at any time—this closes your account and remittance will be promptly mailed. Suppose there are no profits. It is more likely that there would be losses than profits.

The next thing of interest in the letter is "Confidence: We fully appreciate the fact that confidence is the very foundation of an investment business, and are pleased to refer you to our banks. Harriman National Bank, 527 Fifth Avenue, New York City. U. S. Mortgage & Trust Company, 55 Cedar Street, New York City."

It is doubtful whether many people would take the trouble to write to the banking companies given as references in the letter. In case they did they would probably not learn much, because it is not common practice for banks to issue unfavorable opinions relative to their own depositors and customers.

Instead of the rest of the letter reading as it does, it should, if inspired by a real interest in your welfare, be worded somewhat in the following fashion:

> There never was nor never will be a worse time than right now to invest in "good" stocks with large dividend yields—stocks which seem today of proved worth have excellent possibilities for substantial losses, for many good stocks have stopped paying dividends and have declined to a large degree in the market.
>
> Use the handy order blank in back of booklet—but send it to us by mail—do not wire your order at our expense "at the market" because, our commission being only a legitimate one, we would probably not have enough profit left after paying for your wire.
>
> Today—now is better than tomorrow—to make a decision not to deal with any house which follows the unsound practices with which we are willing to accommodate you.

It is undoubtedly good for the unsophisticated investing public that many houses which have been run as this letter boasts this house is run have failed, although the failures have cost many such investors large amounts of money, generally representing hard earned savings. A preponderance of the names of the "sucker" lists of many such houses are those of physicians and other professional men and women.

It does not seem reasonable that if any concern is able to tell you, as advertised in the letter, "How you can become financially independent," it will take the trouble to write a letter soliciting any small amount of money which some physician in Nebraska might send them. The truth of the matter is that no one knows how to take any given amount of money, and make more than a good interest return on it, without taking some chance of loss. Certainly, no one should ever send money to any institution unless he knows that it is a safe and sound banking house of long established reputation. There are plenty of quacks in other lines of business than that of the medical profession. Why deal with a quack when reliable financial doctors are to be had? There are many reliable banking institutions. It is their business to conserve your money and not to multiply it.

Finally, about two weeks after the company sent out the letter quoted, it went into bankruptcy and is now being investigated for illegitimate practices.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

California: Los Angeles, April 11. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

District of Columbia: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

Hawaii: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

Nevada: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

New Mexico: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.

New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

Oklahoma: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Tennessee June Examination

Dr. Alfred B. DeLoach, secretary, Tennessee State Board of Medical Examiners, reports the written examination held at Knoxville, Memphis and Nashville, June 10-11, 1921. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. One hundred and two candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Illinois Medical College		(1904)*	79.1
Loyola University		(1917)	87.5
Tulane University	(1918) 85.4, (1920) 85.3,	(1921) 89.1,	90.9
Johns Hopkins University		(1920)	89.3
Washington University		(1920)	84
Columbia University	(1920) 90.3,	(1921)	91.8
Jefferson Medical College		(1921) 83, 90.8,	92.8
University of Pennsylvania		(1921)	88.8
Chattanooga Medical College		(1893)	76
Meharry Medical College	(1920) 79.8,	(1921)	77.6, 78.1, 78.4, 80.9, 81.3, 82, 83.1, 84.6, 84.6, 84.8, 84.9, 85.1, 85.1, 85.6, 85.6, 85.9, 86.1, 86.3, 86.4, 86.9, 87.5, 88.5, 89.3, 89.4, 89.5, 90, 90.1, 91.8.
University of Tennessee		(1921)	81.6, 84.4, 84.6, 86.4, 86.4, 87.3, 87.4, 87.4, 88, 88.1, 88.5, 88.8, 89, 89.3, 90, 90.1, 90.3, 90.5
Vanderbilt University		(1921)	79,* 85.4, 85.6, 85.9, 86.4, 87, 87.4, 87.8, 87.8, 87.8, 87.8, 87.9, 88.3, 88.4, 88.5, 88.8, 89.4, 90, 90.1, 90.4, 90.4, 90.5, 90.5, 90.9, 90.9, 91, 91.3, 91.3, 92, 92.3, 92.4, 92.4, 92.4, 93, 93.3, 94.5, 95.3, 95.4
Medical College of Virginia		(1904)	76
University of Virginia		(1920)	90

* Graduation not verified.

New Jersey October Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination, held at Trenton, Oct. 18-19, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. Seventy-three candidates were licensed by reciprocity. One candidate was licensed by endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University	(1921)	86.7
Columbia University	(1920)	86.4
Jefferson Medical College	(1920)	82.2
University of Pennsylvania	(1920) 83.5,	83.5
Vanderbilt University	(1916)	78.7
FAILED		
University of Naples	(1911)*	73.1
University of Berne	(1916)*	72.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1913)	Alabama
Howard University	(1916) Tennessee,	(1920)	Dist. Colum.
Emory University		(1919)	Georgia
National Medical University		(1903)	Illinois
Bowdoin Medical School		(1920)	Maine
College of Physicians and Surgeons, Baltimore	(1910) New York, (1912) Delaware	(1892)	N. Carolina
Johns Hopkins University		(1918)	Maryland
University of Maryland		(1920)	Maryland
Harvard University	(1908) Washington,	(1920)	New York
Central Medical College of St. Joseph		(1899)*	Mississippi
Missouri Medical College		(1885)	Tennessee
National University of Arts and Sciences		(1914)	Missouri
Columbia University	(1898), (1906), (1915), (1917), (1919),	(1920)	New York
Cornell University	(1914), (1918),	(1920)	New York
Eclectic Medical College of the City of New York		(1899)	New York
Fordham University	(1919),	(1920, 3)	New York
Long Island College Hosp.	(1898), (1917), (1919),	(1920, 3)	New York
New York Homeopathic Medical College and Flower Hospital	(1916), (1917),	(1920)	New York
University and Bellevue Hosp. Med. Coll.	(1919),	(1920, 10)	New York
University of Buffalo	(1904),	(1914)	New York
Leonard Medical School		(1904)	W. Virginia
Western Reserve University		(1913)	Ohio
Hahnemann Medical College and Hospital of Philadelphia	(1898) Ohio, (1901) Pennsylvania,	(1920)	Delaware
Jefferson Medical College		(1909)	Penna.
Medico-Chirurgical College of Philadelphia		(1895)	Penna.
Temple University	(1916),	(1919)	Penna.
University of Pennsylvania	(1900), (1920, 2)† New York	(1920)	Penna.
University of Pittsburgh		(1917)	Penna.
Woman's Medical College of Pennsylvania		(1915)	Penna.
Medical College of the State of South Carolina		(1914)	N. Carolina
Vanderbilt University		(1919)	Tennessee
University of Vermont		(1920)	Vermont
Wisconsin College of Physicians and Surgeons		(1902)	Wisconsin
McGill University		(1919)	Maine
University of Toronto		(1918)	New York

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1919)	N. B. M. Ex.

* Graduation not verified.

† The license of one of these candidates is not verified.

Oklahoma October Examination

Dr. J. M. Byrum, secretary, Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Oct. 11-12, 1921. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the eight candidates examined, 7 passed and 1 failed. Two candidates received reregistration licenses. Eleven candidates were licensed by reciprocity, and one candidate was licensed on endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University	(1921)	81
Rush Medical College	(1921)	93
St. Louis College of Physicians and Surgeons	(1921) 83,	86
University of Oklahoma	(1921)	98
Jefferson Medical College	(1920)	96
Memphis Hospital Medical College	(1911)	77
FAILED		
University of West Tennessee	(1921)	66

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock		(1911)	Arkansas
State University of Iowa Coll. of Homeopathic Med.		(1910)	Iowa
University of Kansas School of Medicine		(1914)	Kansas
University of Michigan Homeopathic Medical School		(1897)	Michigan
Barnes Medical College		(1899)	Missouri
Kansas City Hahnemann Medical College		(1908)	Kansas
Kansas City Homeopathic Medical College		(1901)	Missouri
University of Pennsylvania		(1914)	S. Carolina
Memphis Hospital Medical College		(1899)	Tennessee
Vanderbilt University		(1892)	Kentucky
University of Texas		(1919)	Texas.

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Maryland		(1914)	N. B. M. Ex.

Book Notices

Heart Disease and Pregnancy. By Sir James Mackenzie, M.D., F.R.C.P., LL.D., Director of the Institute for Clinical Research, St. Andrews. Cloth. Price, $3.50. Pp. 138. New York: Oxford University Press, 1921.

There is a great deal of useful information packed away in these few pages. Mackenzie is addressing especially the general practitioner who cares for obstetric cases, and he is simple and direct in his explanations, descriptions and conclusions. He reiterates what he has many times said in other places as to the relative insignificance of the murmur in estimating the degree of the heart's efficiency. The importance of the condition of the muscle is properly stressed. The prognostic value of the arrhythmias is briefly considered. Summed up, Mackenzie's advice is to decide as to the danger of pregnancy in case of heart disease on no one sign or symptom and by no arbitrary rule. Rather study each case individually and determine not what anatomic lesion exists so much as whether there is reserve power in the muscle sufficient to enable it to meet strain without evidence of threatening failure, as shown by dyspnea, râles, etc. In this book, as in many of his other writings, the author takes the position—only partly justified by fact—that nearly every one else overestimates the value of the murmur, ignores the condition of the heart muscle, and is indifferent to the nature or significance of the irregularities. It is interesting to note quite a change in his attitude toward the "back pressure" theory. He now admits that in many cases, especially of mitral stenosis, back pressure is a feature that cannot be neglected. Little or nothing is said of pregnancy with the heart of high blood pressure. This might properly and profitably have been considered.

Applied Psychology for Nurses. By Mary F. Porter, A.B., Teacher of Applied Psychology, Highland Hospital, Asheville, N. C. Cloth. Price, $1.50. Pp. 172. Philadelphia: W. B. Saunders Company, 1921.

This is a useful little book. Psychology is made as simple as possible, with no discussions of moot points, and with many examples drawn directly from the contact between patient and attendant. The statements relating to the attitude of nurse to patient are equally true for the medical man, especially the general practitioner. It is interesting to read that "there can be no neurosis without a psychosis." The remarks on the power of suggestion are well put. The chapter headings are: What is Psychology? Consciousness; Organs of Consciousness; Relation of Mind and Body; The Normal Mind; Psychology and Health; Variations from Normal Mental Processes; Attention the Root of Disease or Health Attitude; Getting the Patient's Point of View; The Psychology of the Nurse, and The Nurse of the Future.

Synopsis of Midwifery. By Aleck W. Bourne, B.A., M.B., B.Ch., Obstetric Surgeon to In-Patients, Queen Charlotte's Hospital. Second edition. Cloth. Price, $3.50. Pp. 211. New York: William Wood & Co., 1921.

This little book includes in epitome the matter commonly found in a textbook on the subject—in fact, it is what, in America, would be called a quiz compend with the queries omitted. A book of this nature ordinarily has a limited field of usefulness: as the author's preface gives it, it is for the students' review before an examination. However, we believe that this volume has an additional value to those residing on this side of the Atlantic in that its perusal will give one a good outline of English thought and practice on obstetrics. The volume, in essence, is a recapitulation of the views expressed in their books by Eden, Galaban, Blacker and Monroe Kerr. The English trend of obstetric teaching varies from that accepted in America in many particulars, and this is manifest in many pages. We cannot subscribe, for example, to the empiric administration of streptococcic serum for puerperal infections: American authorities have amply convinced themselves of the futility of its use, even in those instances of culturally proved infections in which the bacteria were found in pure culture, or predominated in mixed infections. Nor will American physicians approve of the recommendation, even with restrictions, of the use of the curet and douche in sapremic infections. On the other hand, the outline of treatment of placenta praevia is invaluable, as it clearly and diagrammatically presents the essentials of interference in the different degrees, and the conditions that must obtain for each method. Rectal examinations have become so common in America, and spell such security to the patient, that we wonder why this book does not mention their value as a substitute for vaginal touch in the conduct of normal labor, and in pathologic labors in which pelvic examinations necessarily must be repeated frequently. Our laws and customs are so insistent that Credé's prophylactic instillation in the eyes of the new-born should be a routine, that we question the suggestion that it be reserved for suspected cases. It would be possible to outline many other differences of thought and habit of our English cousins. The book in no way may be classed as one which should be in the hands of every practitioner or student; as a review of the teachings of another people it is of great interest, and illustrates the fact that medical practice is not truly international in fact and in theory.

Lessons on Tuberculosis and Consumption for the Household. Showing How to Prevent Tuberculosis, How to Recognize Its First Symptoms, How to Win Back Health. By Charles E. Atkinson, M.D., Cloth. Price, $2.50. Pp. 470, with 21 illustrations. New York: Funk & Wagnalls Company, 1922.

Chatty, concise and clear, this book is well calculated to meet the needs of the general public. The writer has touched all points of interest to the consumptive, his family, and even his physician. The subjects of causation, contagion and prevention are well treated. Rest and exercise, climate and nursing are intelligently given. Some time is given to "planning your recovery," while an interesting chapter is entitled "When Blue Days Come." The specialist will find nothing new. The book is not intended for him, but he will find little to criticize. The book is "orthodox," and will be of service in the sanatorium, public library and consumptive's family.

Les Nouvelles Méthodes d'Examen du Cœur en Clinique. Par R. Lutembacher. Paper. Price, 20 francs, net. Pp. 186, with 36 illustrations. Paris: Masson et Cie, 1921.

The new methods that are here discussed are the employment of the polygraph and the roentgen ray. The value of the former in untangling the intricacies of the irregularities, together with the modern views as to the nature of these arrhythmias, is clearly set forth. The way in which the roentgen examination may be of help in the explanation of various changes in the size and shape of the heart and large vessels is explained in convincing manner. There are some unusually fine pictures of diseased hearts, whose roentgenograms are represented by helpful diagrams. Electrocardiography is briefly considered. Altogether, the book is a reliable and helpful guide in the field of cardiac diagnosis.

Medizinische Terminologie. Ableitung und Erklärung der gebräuchlichsten Fachausdrücke aller Zweige der Medizin und ihrer Hilfswissenschaften. Von Walter Guttmann, Oberstabsarzt a.D., Berlin. Fifteenth edition. Cloth. Price, 90 marks. Pp. 1311, with 464 illustrations. Berlin: Urban & Schwarzenberg, 1920.

Few dictionaries take advantage of the excellent economic principle so well exemplified by Guttmann's Medizinische Terminologie. It omits the vast body of ordinary medical words known to every one, unless it is the very beginner, and thereby gains space for an ample and intelligible definition of the less known and more difficult terms. For this reason, the amount of clear and reliable information that is contained in this one volume is astonishing.

The Sphygmometer: Its Value in Practical Medicine. By William Russell, M.D., LL.D., Consulting Physician, Royal Infirmary, Edinburgh. Cloth. Price, $2.50. Pp. 145, with 14 illustrations. New York: William Wood & Company, 1921.

The twelve chapters of this book are made up largely of an elaboration and extension of the George Alexander Gibson Memorial Lectures delivered in May, 1920, and of clinical lectures, many of which have already appeared in various journals. There is much repetition, and the treatment of various topics is often fragmentary. Emphasis is laid on Russell's contention that arteriosclerosis and atheromatosis are two distinct processes; also that what is measured by the sphygmomanometer is not alone the blood pressure proper but also the resistance offered by the vessel wall that may be diseased or that may be hypertonically contracted. Numerous illustrative cases are cited, some of which are quite instructive, particularly those concerned with angiospasm. The work is suggestive rather than convincing. One gets from it useful hints rather than a broad discussion of the sphygmomanometer and the disease conditions in the study of which this instrument is helpful.

Miscellany

THE FUNCTIONS OF THE OMENTUM

Although the functions of the omentum have received only cursory attention in medical literature, it plays such a definite part in both normal and pathologic abdominal conditions that it should not be neglected. That fluids are absorbed from the peritoneal cavity was known by Aristotle, although the route of absorption is still in dispute. Moreover, Shipley and Cunningham[1] demonstrated that "true and pseudo-solutions and granules of particulate bodies" are absorbed by the omental vessels, and others have shown that the lymphatic plexuses under the diaphragm absorb considerable fluid and soluble elements.[2] Undoubtedly the relative osmotic pressures influence the rate and extent of absorption, and posture also plays a part, as indicated by the favorable effects of Fowler's position in general peritoneal infections.

When foreign bodies are introduced into the peritoneal cavity, they soon become encapsulated by the omentum and, if they are of organic nature, they are removed by absorption. LePlay[3] found that even the resected omentum when left in the abdomen retains the power of reaction to foreign bodies. It has long been known that the omentum, in many cases, seems to move to the site of acute peritoneal infection, this tendency being so characteristic that the omentum has been called "abdominal policeman," "friend in need" and "the great leukocyte." Norris[4] showed that the omentum is entirely devoid of muscle, so that it seems logical to accept the view of Rubin[5] and others that it does not possess the power of independent movement, but that the active peristalsis of the intestine, assisted by diaphragmatic movements and the adhesive property of the inflamed serous coverings, pushes the omentum over an inflamed area.

Another function ascribed to this unusual tissue is the sealing of perforations of hollow viscera, and surgeons generally make use of this property not only to strengthen lines of intestinal anastomosis but also for support of the walls of various organs.

The omentum contains many phagocytic cells (Metchnikoff), singly and in islands along blood vessels; Norris showed that it picks up bacteria, and Buchtel[6] found that animals deprived of the omentum were less resistant than normal animals to induced peritoneal infection. Then, Cunningham[7] demonstrated recently that animals deprived of the omentum produced fewer cells of the plasmatocyte type than normal animals, in the exudate formed in response to peritoneal irritation. It remains now to determine whether phagocytic action is the only anti-infectious property of the omentum, or whether it also takes part with the spleen, marrow and other organs in the development of antibodies.

DeRenzi and Boeri[8] believe, on the basis of experiments in animals in which vascular supply to the spleen was cut off, that life depends solely on the presence of an intact omentum under such circumstances. In the animals surviving, the spleen became converted into a fibrotic mass completely encapsulated by the omentum. This function has been further studied in experimental strangulation of large segments of the gastro-intestinal tract,[9] and when the viability of strangulated intestines seems questionable or the patient is in a too precarious condition for extensive resection, the omentum may prove an invaluable agent of vascularization.

To summarize, the omentum is an important factor in absorption; it is capable of walling off localized peritoneal infections and of encapsulating foreign bodies; it has considerable anti-infectious power, and it may be used to furnish a new vascular supply to strangulated organs. Whether the omentum has still other functions remains for future investigation to determine. Clearly, the surgeon at all times should do his best to preserve this remarkable structure because of the wide range of its protective functions.

MEDICINE AND PUBLIC HEALTH IN RUSSIA

In a late issue of *Paris médical* is an interview with Prof. Sokoloff, published by *Le Matin*. After being one of Metchnikoff's co-workers, he filled several positions in Russia, having been finally authorized by the Soviet régime to continue his research work after serving several terms in prison. According to him, Russian laboratories have been curtailed by the present government to such a degree that they have ceased to operate almost completely. There are, however, some exceptions, the most important of which is the laboratory of the noted physiologist, Pavloff. The only research that actually can be carried out is on epidemic diseases and especially typhus fever, which shows how worried the Soviet government is about this disease. Several interesting results have been obtained in these investigations, especially by Prof. Zlatogoroff and his co-workers at Petrograd. They have established that heated blood from typhus fever patients in the fifth to the tenth day of the disease can be used as a preventive vaccine. When injected subcutaneously in small doses this blood is harmless. There has also been demonstrated that the susceptibility to typhus fever is five times as great among the nonvaccinated as among the vaccinated. The serum of typhus convalescents secured from two to twelve days after defervescence can be used for curative purposes with good results. For this serum treatment there are used serums obtained from several patients. Results nearly as encouraging have been obtained in the case of cholera, especially by Professor Gamaleia, with a "volatile vaccine." Russian physicians have suffered so much from epidemic diseases that from 1917 to the middle of 1920, half of them had died, and among the survivors hardly one has failed to suffer several attacks of some epidemic disease. Russian physicians are very poorly paid under the Soviet régime. At present they are treating free of charge their old bourgeois clientele. The paying patients now are the bureaucrats and *nouveaux riches*. Recently, Dr. Ott, the professor of gynecology at Petrograd, asked a 100,000 rubles fee for a minor operation on Zinovieff's wife and it was not considered very high. For fear that private practice would make physicians too independent, the government, since the last part of 1920, has forbidden them to make more than fifty calls a month on private patients. This fact must be proved by a numbered register of prescriptions. It is figured out that the number of cases of epidemic diseases during the last three years has reached a total of about 32 millions. The death rate has been 6 per cent., i. e., 2 million people. From typhus fever alone, over 400,000 died from 1918 to 1920. In some towns it was necessary to institute a "death week" during which the whole population engaged in burying corpses. On the other hand, some diseases have nearly disappeared under the Soviet régime. Obesity and rheumatic sequels are very rare, as is also heart enlargement due to fatness.

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[1] Shipley, P. G., and Cunningham, R. S.: Am. J. Physiol. **40:** 75 (March) 1916.

[2] Bolton, C.: J. Path. & Bacteriol. **24:** 429 (Oct.) 1921. Buxton: J. M. Res. **15:** 189, 1906; **16:** 17, 1907. Wells: J. Infect. Dis. **4:** 582, 1907; Am. J. Physiol. **18:** 156, 1907.

[3] LePlay: Compt. rend. Soc. de biol. **71:** 484, 1911.

[4] Norris, C. C.: Univ. Pennsylvania M. Bull. **21:** 119, 1908.

[5] Rubin: Surg., Gynec. & Obst. **12:** 117, 1911.

[6] Buchtel: Denver M. Times & Utah M. J. **31:** 305, 1911.

[7] Cunningham, R. S.: Am. J. Physiol. **59:** 1 (Jan.) 1922.

[8] DeRenzi and Boeri: Berl. klin. Wchnschr. **34:** 773, 1903.

[9] Bloomhardt, S. L.; Andrews, C. F., and Hetherington, R. R.: Surg., Gynec. & Obst. **24:** 474 (April) 1917.

Medicolegal

Lawyers Not Liable for Pay of Physician as Witness

(Potter v. Austin et al. (N. Y.), 190 N. Y. Supp. 712)

The Supreme Court of New York, Appellate Term, First Department, says that this was an action by the plaintiff, a physician, against the defendants, who were attorneys, to recover the sum of $50, the reasonable worth of services performed for them, consisting of attendance in court and testimony given for their client, at their special instance and request. The plaintiff testified that she received a subpena from the defendants to go to court and testify in the case of one Anna M. Synder against her landlord; that pursuant to said subpena she attended court and gave testimony in the trial of that case, and thereafter sent her bill for $50 to the defendants. Sarah Synder, a witness called in the plaintiff's behalf, testified as to the attendance at court of the plaintiff in the action of Anna M. Synder against the landlord, and that there was on deposit in the city chamberlain's office the infant's share (apparently the action was brought on behalf of an infant) of what was collected; that the lawyers, meaning the defendants in this case, told her and her husband that they would pay the physicians as witnesses and would subpena the plaintiff. She said, "They would pay the witnesses. They told us right in their own office that they would pay witnesses that they subpenaed—the doctors." The defendants denied all the allegations of the complaint except as to their copartnership and the plaintiff's authorization to practice in the state of New York, and set up as a separate and distinct defense that if any services were rendered by the plaintiff at their request, the request was made by them as agents and not as principals, with which fact the plaintiff was thoroughly conversant. The plaintiff did not testify as to any agreement with the defendants; and nowhere in the minutes did it appear that the testimony of the plaintiff was requested by the defendants with any agreement to pay her for her services; but it did appear from the plaintiff's own testimony that she was subpenaed as a witness, and as such she was, therefore, the court holds, only entitled to witness fees. The defendants acting as agents for a known principal and in the absence of a special agreement, their client and the fund were the proper sources out of which the plaintiff's services should be paid. In the trial court the plaintiff obtained a verdict and judgment for $50, but that judgment is reversed, with $30 costs, and the complaint dismissed on the merits, with costs.

Cruelty in Attempt to Have Wife Adjudged Insane

(Michels v. Michels (Me.), 115 Atl. R. 161)

The Supreme Judicial Court of Maine, in overruling exceptions to a decree of divorce for Mrs. Michels, says that a jury found in her favor on the allegation of cruel and abusive treatment. The outstanding fact, on which she placed great emphasis, was an attempt of her husband to have her committed to the state hospital for the insane, charging that she was insane. This unsuccessful charge of insanity, with its attendant publicity, might or might not constitute cruel and abusive treatment. It depended on the motive which prompted the institution of the proceedings. If the application, although unsuccessful, was made in good faith, in the honest and sincere belief that the wife was in such an unsettled mental condition that her own good and that of her family required her confinement and treatment in such an institution, such an act would be regarded as lacking entirely the essential element of cruel and abusive treatment. It would spring from kindness rather than cruelty. If, on the other hand, the husband, without just cause, wilfully attempted to have her committed to an insane asylum, such conduct seriously affecting her health, his act would obviously constitute cruel and abusive treatment within the meaning of the statute. In other words, it was not merely the act itself, but the motive which inspired the act, that was to be rigidly inquired into and determined by the jury, in this case; and a significant fact, which must have carried great weight, was that, only two months after his failure to secure his wife's commitment, the husband instituted proceedings to have a conservator appointed to take charge of his wife's property, alleging that, by reason of mental weakness, she had become incapacitated to care properly for her property. Here again the question of good faith or wilful persecution on the part of the husband was the crucial point; and the attempt to deprive her of the management of her property, like that to deprive her of her liberty, failed. Under all the circumstances, she was entitled to a decree of divorce.

Action for Services Rendered Nonresident Patient

(Page v. Peden (Iowa), 184 N. W. R. 1033)

The Supreme Court of Iowa, in affirming a judgment in favor of the plaintiff, in an action on an account, says that the defendant, formerly a resident of Iowa, became a resident of South Dakota in the spring of 1919. In the fall of that year, she returned to Iowa, where the plaintiff, a physician, attended her during confinement. It was to recover for those services that this action was brought. The defense relied on was the statute of limitations of South Dakota, which is six years on an open account. The contention was that, as that period had elapsed between the rendition of the services and the commencement of this action, it was barred under the provisions of the South Dakota statute. This position, however, was untenable. The section of the Iowa code says that when a cause of action has been fully barred by the laws of any country where the defendant has previously resided, such bar shall be the same defense in Iowa as though it had arisen there, but its further plain provision does not apply to causes of action arising within the state of Iowa. The services in question were rendered by the plaintiff, and the cause of action arose, in Iowa. It was, therefore, immaterial that the action could not be maintained in South Dakota because of the bar of the statute of that state.

Effect of Epilepsy on Testamentary Capacity

(In re Derusseau's Will (Wis.), 184 N. W. R. 705)

The Supreme Court of Wisconsin says that it has been surprised to find that the effect of epilepsy on testamentary capacity has been so seldom passed on by the courts of last resort. Only one such case was cited in the briefs of counsel, namely, *In re Michael Lewis' Will,* 51 Wis. 101, 7 N. W. 829. In the present case, the will in question was executed on April 29, 1912, a brother-in-law being named sole beneficiary, brothers and sisters of the testator being expressly excluded. At the same time, a contract was entered into between the brother-in-law and the testator, whereby the former, in consideration of $15 a month and his being named sole beneficiary, agreed to take the testator into his home and provide food, clothing, and medical attention for him during his life, and care for him as he would for one of his own infant sons. In January, 1917, the testator was removed to an asylum for the insane. He died in August, 1918, at the age of 39 years. The evidence showed that by his industry and frugality, notwithstanding the untoward conditions of his life, he had increased his small inheritance from $2,000 to $3,500. In a small way, he had become a capitalist, and had invested and reinvested his money with at least average prudence. Still it was strongly urged that any preponderance of the testimony as to the general business capacity of the testator was overcome by the fact that he had been an epileptic since infancy. There was testimony that he sometimes had epileptic seizures once or twice a day, sometimes once or twice a month; that sometimes he would be unconscious for an hour, sometimes for a day. But there was no proof of any seizure for some weeks before or after the execution of the will. The testimony showed that he first went to his notary public, and then to the man who prepared the will, and on both occasions in their judgment seemed in a normal frame of mind. Undoubtedly, he had long been the victim of a deplorable mental disease, and there probably had been some impairment of his mental powers before the execution of the will. Moreover, the testimony convinced the court that his mental and physical condition had greatly changed in the interval between the execution of the will and the commitment to the asylum. However, presumptions are not generally retrospective, and even if he was insane at the time of the commitment, it did not follow that he was insane four years and eight months before.

Neither insanity nor testamentary incapacity can be presumed from the fact that a testator has long suffered from epilepsy. It is true that such a condition may be an important fact, in connection with other facts, in the determination of the question; but it is a matter of common knowledge that many persons have long been the victims of this dread disease, and yet possessed in the intervals between attacks a high degree of mental power. It cannot be said that, because a person is an epileptic, he is therefore insane.

There was no testimony that the testator had hallucinations or delusions in the intervals between attacks. Neither the will nor the accompanying agreement was so complicated as not to be easily understood. The court is convinced from the whole testimony, including that relating to epilepsy, that the testator had sufficient capacity to comprehend perfectly the condition of his property, his relations to the persons who were or should or might have been the objects of his bounty, and the scope and bearing of the provisions of his will, and that he had sufficient active memory to collect in his mind, without prompting, the particulars or elements of the business to be transacted, and to hold them in his mind a sufficient length of time to perceive at least their obvious relations to each other, and be able to form some rational judgment in relation to them. The court therefore holds with the county judge and the circuit judge that the testator was competent to execute the will. He was profoundly conscious of his sad condition, and know that he could not be a welcome inmate in the households of his brothers and sisters, so the court does not think that it was unnatural for him under the circumstances to make some provision with his little property by which his deplorable condition could be to some extent ameliorated; and the court does not think that testamentary provisions of this character should be lightly set aside.

Physicians May Testify to Nonprofessional Matters

(Minnis v. Steele (Ind.), 132 N. E. R. 702)

The Appellate Court of Indiana, Division No. 2, referring to the parties in this case as appellant and appellee, says that appellee Steele filed a claim against the estate of a Mrs. Minnis for services rendered through a term of years, and obtained a judgment, which is affirmed. One of the contentions of the appellant, who was the administrator of the estate of Mrs. Minnis, was that it was error to permit a physician to testify as to certain conversations he had had with Mrs. Minnis, wherein she said that she wanted the appellee to be well paid for her services and that she wanted him to see that she was paid for such services. The witness testified that he had been the family physician of Mr. and Mrs. Minnis for more than thirty years; that Mrs. Minnis visited him at his office on business and talked to him about the appellee; that Mr. and Mrs. Minnis both came to his office and consulted him about their business, talked to him about the appellee, and talked over what they should give her, that she should be paid for her services. In short, the witness appeared to have been a personal friend and business adviser of Mr. and Mrs. Minnis as well as their family physician. They went to him with their business troubles and advised with him, and on such occasions talked with him concerning the appellee, and on at least one of such visits said they wanted her to be well paid for her services. Except as otherwise provided, all persons are competent witnesses in civil proceedings. The Indiana statute provides that "physicians, as to matters communicated to them, as such, by patients in the course of their professional business, or advice given in such cases," are not competent witnesses. The facts about which this physician testified were not matters reasonably within his professional business, or about which he would be expected to give advice, or that would likely be communicated by a patient to a physician as such. The fact that the witness was the family physician of Mrs. Minnis did not render him an incompetent witness as to the conversations about which he testified.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia. Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Atlantic City, May 26-28. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
International Congress of Ophthalmology, Washington, D. C., April 25-May 3. Dr. Luther C. Peter, 1529 Spruce St., Philadelphia, Sec'y.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Excelsior Springs, May 2-4. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. Frederick A. Spafford, Flandreau, Secretary.
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

March, 1922, **60**, No. 1

Analysis of Nervous Control of Cardiovascular Changes During Occlusion of Head Arteries in Cats. C. S. Winkin, New York.—p. 1.

Rôle of Sodium and Carbonate Ions and of Change in Sodium-Calcium Ratio in Contraction of Isolated Duodenal Segment of Albino Rat. F. S. Hammett and J. E. Nowrey, Jr., Philadelphia.—p. 48.

Rôle of Change in Hydrogen-Ion Concentration in Motor Activities of Small Intestine. F. S. Hammett, Philadelphia.—p. 52.

*Electrical Conductivity of Animal Tissues Under Normal and Pathologic Conditions. G. W. Crile, H. R. Hosmer and A. F. Rowland.—p. 59.

Effect of Diet on Weight of Hypophysis and Thyroid of Albino Rat, and on Action of Their Extracts on Isolated Small Intestine. L. M. Degener, Philadelphia.—p. 107.

Variations in Output of Bile Salts and Pigments During Twenty-Four Hour Periods. F. P. Wisner and G. H. Whipple, San Francisco.—p. 119.

Relationship Between Nervous and Hormone Control of Respiratory Center. J. J. R. Macleod and S. U. Page, Toronto.—p. 134.

Sensory Stimulation by Saturated Monohydric Alcohols. M. Irwin, Cambridge, Mass.—p. 151.

Responses of Circulation to Low Oxygen Tension. VI. Cause of Changes Observed in Heart During Extreme Anoxemia. C. W. Greene, Columbia, Mo., and N. C. Gilbert, Chicago.—p. 155.

*Influence of Blood Serum on Coagulative Activity of Tissue Extracts. C. A. Mills and S. Mathews, Cincinnati.—p. 193.

Electrical Conductivity of Animal Tissues.—From the experimental data presented by Crile, et al., it would appear that the intracellular changes in exhaustion and shock which are revealed by the microscope are paralleled by alterations in electric conductivity, and that both the histologic and the electric changes bear a direct relation to the vitality of the organ.

Influence of Blood Serum on Coagulative Activity of Tissue Extracts.—Rabbit serum has been found to be capable of causing as high as a thirty-fold increase in the coagulative activity of lung extract. This effect is gradually replaced by a diminution in the activity of the extract below the original as the mixture is left standing. According to Mills and Mathews, normal serum possesses this same power, but to a less degree, both as regards the primary activation and the later inactivation. Syphilitic serum acts exactly as does the normal serum. The practical importance of this activation of tissue extracts lies in its relation to the intravenous injection of protein solutions, such as organ extracts or blood serum, which may be harmless alone but may be activated sufficiently by the patient's blood to become exceedingly toxic.

American Journal of Public Health, Chicago

March, 1922, **12**, No. 3

Campaign Against Yellow Fever in Mexico. F. C. Najera, New York.—p. 181.

Present Sanitary Conditions at Guayaquil with Special Reference to Yellow Fever. C. V. Coello, Guayaquil.—p. 188.

Use of Fresh Water Fish as Consumers of Mosquito Larvae in Containers Used in Home. M. E. Connor.—p. 193.

Work of Massachusetts-Halifax Health Commission. B. F. Royer, Nova Scotia.—p. 195.

Import Diseases as They Affect Work of New York City Health Department. R. S. Copeland, New York.—p. 202.

Functions of Public Health Laboratory in Controlling Import Diseases. W. H. Park, New York.—p. 204.

Report of Committee on School Health Program.—p. 207.

Fatigue in Industry. E. L. Fisk, New York.—p. 212.

Relation of Public Health Nursing to Other Phases of Work of State Board of Health, with Special Reference to That of Division of Child Hygiene. R. M. Ehrenfeld.—p. 218.

New Garbage Reduction Works at Rochester, N. Y. E. A. Fisher, Rochester, N. Y.—p. 222.

Value of Cooperation Between Food Manufacturer and Food Official. J. P. Street, Indianapolis.—p. 225.

Archives of Internal Medicine, Chicago

March, 1922, **29**, No. 3

*Clinical Studies on Respiration. IX. Effect of Exercise on Metabolism, Heart Rate and Pulmonary Ventilation of Normal Subjects and Patients with Heart Disease. F. W. Peabody and C. C. Sturgis, Boston.—p. 277.

Studies in Diabetes Insipidus, Water Balance and Water Intoxication. J. F. Weir, E. E. Larson and L. G. Rowntree, Rochester, Minn.—p. 306.

Circulatory Compensation for Deficient Oxygen Carrying Capacity of Blood in Sever Anemias. G. Fahr and E. Ronzone, Madison, Wis.—p. 331.

*Hitherto Undescribed Tumor of Base of Aorta. G. R. Herrmann and M. T. Burrows, St. Louis.—p. 339.

*Bacillus Acidophilus and Its Therapeutic Application. L. F. Rettger and H. A. Cheplin, New Haven, Conn.—p. 356.

Efflux of Blood from Cartoid Artery of Dog and Its Expression by a General Empirical Formula. H. L. Dunn, Minneapolis.—p. 368.

Study of Blood Sugar Curves Following a Standard Glucose Meal. W. H. Olmstead and L. P. Gay, St. Louis.—p. 384.

Effect of Exercise in Heart Disease.—The investigations made by Peabody and his associates concerning dyspnea made on eleven ambulatory patients with heart disease disclosed that the oxygen consumption and heart rate were slightly greater than in a similar group of normal subjects while standing at rest. Under the same conditions the minute volume of the respiration was much greater in the patients with heart disease and the breathing was more rapid and more shallow. The slight amount of exercise involved in walking up sixty steps produced the same relative changes in oxygen consumption, pulmonary ventilation and heart rate in the two groups, but it caused more subjective dyspnea in the patients with heart disease. Exercise which was severe enough to cause a corresponding amount of dyspnea in normal subjects caused the same type of changes in oxygen consumption, pulmonary ventilation and heart rate, but they were greater in degree. The response to exercise of patients with heart disease was qualitatively the same as that in normals. Their greater liability to dyspnea depends on a quantitative limitation. Shortness of breath was most noticeable immediately after exercise was stopped, and at this time the pulmonary ventilation was largest. The return to normal of the minute volume of the respiration and of the heart rate was delayed in these patients. It is suggested that the two factors which account for the greater dyspnea in the cardiac patients are the inadequate circulation, which results in a delayed elimination of carbon dioxid, and the tendency to shallow breathing, which necessitates a relatively large pulmonary ventilation.

Tumor of Base of Aorta.—The assertion is made by Herrmann and Burrows that the tumor of the aorta attached to the heart which they found in their case has no counter part in the literature. The clinical symptoms were largely those of a tumor of the heart and gradually progressing myocardial change. Dyspnea was the chief symptom. In addition an ashen pallor, conspicuous cyanosis of the body and dilatation of the superficial abdominal veins on standing, and the spread of the cyanosis to the face on reclining, was such as might have resulted from a tumor pressing on the venae cavae. The roentgenogram of the chest taken at this time showed a shadow to the right and below the third rib which led to the provisional diagnosis of cardiac tumor. The electrocardiographic findings pointed definitely to pathology in the auricular muscle which, as necropsy showed, was associated directly with a tumor pressing on the auricle and atrophy of the underlying auricular muscle. The necropsy showed that this was a massive atheromatous tumor of what appeared to be an atypical arterial branch of the aorta. This branch or pedicle had the appearance of an artery obliterated by an excessive proliferation of its intima. Microscopically, this tumor was really a progressive degenerating fibrous wall of inflammatory origin. Leaving aside the inflammatory cells present, it was the picture of the ordinary atheromatous patch of the aorta. There was no evidence that it was or had been a neoplasm.

Bacillus Acidophilus in Treatment of Constipation.—The value of the *B. acidophilus* treatment was studied by Rettger and Cheplin in cases of chronic constipation with the symptoms of so-called autointoxication and other accompanying pathologic conditions, some of them acute; chronic diarrhea following an attack of bacillary dysentery; colitis, at times bloody, and more or less mucous; sprue and dermatitis (eczema). Viable cultures of *B. acidophilus* when used in sufficient amount and under the right conditions have important therapeutic properties. They are of particular merit in the treatment of chronic constipation and of diarrhea. The fullest benefit from the acidophilus treatment can be derived only when thorough bacteriologic examinations of the feces are made at frequent intervals.

Archives of Ophthalmology, New Rochelle, N. Y.

March, 1922, **2**, No. 2

Use of Living Sutures in Treatment of Ptosis. W. W. Wright, Toronto, Can.—p. 99.
Industrial Trauma in Relation to Development of Ocular Tuberculosis, Syphilis and Neoplasm. H. Barkan, San Francisco.—p. 103.
Ocular Manifestations of Multiple Sclerosis. W. A. Holden, New York.—p. 114.
Primary Intraneurol Tumors (Gliomas) of Optic Nerve. F. H. Verhoeff, Boston.—p. 120.
Nonsurgical Treatment of Malignant Epibulbar Neoplasms. E. B. Heckel, Pittsburgh.—p. 141.
Cysts and Cystic Tumors of Caruncle: with Special Reference to Sebaceous Cysts. J. Green, Jr., St. Louis.—p. 145.
Operating Hand Lamp for Ophthalmic Work. A. M. Ramsay, Glasgow.—p. 152.
Trifocals Minus Wafers. T. R. Chambers, Jersey City, N. J.—p. 154.
Remarks on Dr. C. Koller's Paper, "Physiologic Mode of Action of Mydriatics and Miotics—Explaining Their Effect in Hypertension (Glaucoma)." M. J. Schoenberg, New York.—p. 156.

Boston Medical and Surgical Journal

March 16, 1922, **186**, No. 11

*Acute Pancreatitis. D. F. Jones, Boston.—p. 337.
*Indications for Operation in Treatment of Injuries Involving Brain. D. Munro, Boston.—p. 342.
Concerning Type of Injury to Renal Epithelial Cells Which Increase Susceptibility of Cells to Action of General Anesthetics. W. DeB. MacNider, Chapel Hill, N. C.—p. 350.
Acute Puerperal Inversion; Report of Case. J. P. Cohen, Boston.—p. 352.

Acute Pancreatitis.—Experimental and clinical findings lead Jones to believe that there are probably two types of acute pancreatitis, with quite different etiology: (*a*) Interstitial pancreatitis due to infection of the interstitial tissue, the infection coming frequently from the biliary system; (*b*) pancreatic necrosis, a necrosis of the parenchymal cells, due to retrojection of bile into the duct of Wirsung or duodenal contents into the duct of Santorini. The treatment of the interstitial type, due to infection from a cholecystitis, is cholecystectomy. The treatment of pancreatic necrosis is drainage of the fatty capsule of the pancreas, and the pancreas itself. In addition, if the condition of the patient will permit, either the sphincter of Oddi may be cut, a choledochostomy or cholecystostomy done, depending upon the condition of the patient and the condition of the gallbladder and ducts found at operation.

When to Operate for Brain Injuries.—The indications for operation in injuries involving the brain according to Munro are: compound fracture of the skull, depressed fracture of the skull, and a rise in the intracranial cerebrospinal fluid pressure. He advises that all cases in which an injury to the brain has been sustained or is suspected, no matter how slight, should, as soon as the patient has recovered from the surgical shock, have the pressure of the cerebrospinal fluid measured, and the treatment should be based primarily on this finding alone.

California State Journal of Medicine, San Francisco

March, 1922, **20**, No. 3

*Treatment of Lacerated and Infected Cervix Uteri. A. V. Pettit, San Francisco.—p. 78.
*Investigation of "Provocative Wassermann" Controlled by Icebox Method. R. T. Shepardson, San Francisco.—p. 80.
Operability of Senile Prostate. W. B. Dakin, Los Angeles.—p. 83.
Diarrhea in Infants in Relation to Certain Food Intolerances. H. H. Yerington, San Francisco.—p. 85.
*Meaning of Passage of Intrapartum Meconium. M. Schulze, San Francisco.—p. 87.
Determination of Extent and Nature of Renal Lesion in Bright's Disease. T. Addis, San Francisco.—p. 90.
Recent Advances in Diagnosis and Treatment of Hay Fever and Asthma. A. H. Rowe, Oakland.—p. 94.
*Styloid Process in Tonsillectomy. J. A. Bacher, San Francisco.—p. 99.
Glucose and Alkalies in Surgery. A. Weeks and L. Briggs, San Francisco.—p. 100.

Treatment of Lacerated and Infected Cervix Uteri.—In hospital obstetric practice, in trained hands, Pettit considers the best prophylactic procedure against the development of infection of the cervix to be the routine exposure of the cervix in primiparas, after delivery, and suture of the lacerations. For the cure of infection and lacerations of the cervix, with the accompanying symptoms, certain types of amputation are the operations of choice. Trachelorrhaphy is preferable to cauterization if future pregnancy is a consideration. Cauterization, for the treatment of infection of the cervix, should only be undertaken if future pregnancy is no longer a consideration. The Sturmdorff conical enucleation of the glandular elements of the cervix possesses the virtue of high amputation, and should give the least possible interference with future pregnancies.

Provocative or Repeated Wassermanns.—Shepardson says that an equally valuable and less time consuming and laborious procedure is to have the patient return for repeated Wassermanns (to be done by both icebox and water bath methods) at varying intervals depending on the clinical indications and history. A so-called "provocative reaction" does in all probability occur. However, one cannot be sure in the face of all the uncertainties of the Wassermann reaction, that this effect is not due to some imperfectly comprehended factor either in serum, reagents, or technic. If a positive Wassermann does justify treatment, and in 17 per cent. of cases this can be obtained by the "provocative" procedure, it might be worth while employing in private practice, but not in clinical practice, where the amount of time necessary for the patient to stay away from work is too great to justify any benefit the patient might receive thereby.

Meaning of Passage of Intrapartum Meconium.—The passage of meconium by the child during labor, Schulze says, is in a large majority of cases entirely independent of fetal asphyxia. The passage of old meconium at the time of rupture of the membranes is of no prognostic value as to the later development of asphyxia. Passage of fresh meconium with rupture of the membranes, or later in labor, may or may not be associated with asphyxia. In the latter case changes in the fetal heart sounds are present also. Meconium appearing after other signs of fetal distress is frequently a sign of the onset of very deep asphyxia and the child may perish even though delivery be accomplished very rapidly. A strikingly high proportion of overlarge children pass meconium, in most cases without serious significance. The cause of the passage of meconium in cases without asphyxia cannot as yet be stated definitely.

Elongated Styloid Process.—Two cases of elongated styloid processes, presenting in the tonsillar fossae, have come under Bacher's observation. In neither of the cases was the diagnosis made before tonsillectomy. In the first case inspection of the fossa after uncomplicated tonsillectomy showed a sharp prominence covered with muscular tissue extending from above downward rather close to the anterior pillar. In the second case a snare wire was placed around the process and a roentgenogram made with the wire hanging from the process. Convalescence was uncomplicated in both cases.

Colorado Medicine, Denver

February, 1922, **19**, No. 2

Feeding Newborn Infant. F. P. Gengenbach, Denver.—p. 26.
Malnutrition in Children. E. L. Timmons, Colorado Springs.—p. 29.
Joint Injuries, with Special Reference to Fractures Extending into Joint. C. E. Tennant, Denver.—p. 32.
Indiscriminate Diagnosis of Tuberculosis. M. Levy, Denver.—p. 37.
Psychotherapy in Convulsive Disorders. E. J. A. Rogers, Denver.—p. 40.

March, 1922, **19**, No. 3

*Multiple Diverse Tumors Affecting Spinal Cord. P. Work, Pueblo.—p. 50.
Median Bar at Vesical Orifice. W. M. Spitzer, Denver.—p. 53.
Cystitis: Diagnosis. H. T. Low, Pueblo.—p. 59.
Treatment of Neurosyphilis. L. V. Tepley, Denver.—p. 63.

Tumors of Spinal Cord.—Work reports a case which demonstrates the examination findings of an extramedullary tumor, with unusually long duration of nonincapacitating symptoms with some operative relief, and the most unusual condition of two lesions, one epidural, the other subdural and of different pathology, the record of which was not suspected at the time of the first operation and which was not influenced by surgery. It further shows that in cord obstruction cases the localizing phenomena are those proper to the fiber highest point of interference with conduction. The growth first removed (epidural) was a mass of irregularly placed yellow connective tissue, apparently originating from an intervertebral disk, a fibroma. The subdural specimen last removed was a cyst wall firm and dense in consistency showing calcification and was classed as an osteoma.

Illinois Medical Journal, Oak Park

March, 1922, **41**, No. 3

Symposium on The A. M. A. and Its Component Societies Before North Side Branch of Chicago Medical Society, Feb. 2, 1922.—p. 165.
*Relation of Splenic Syndromes to Pathology of Blood. W. J. Mayo, Rochester, Minn.—p. 175.
Certified Milk. J. W. Van Derslice, Chicago.—p. 181.
Headache From Standpoint of Ophthalmology and Otolaryngology. G. H. Mundt, Chicago.—p. 183.
Effect of Occlusion of Coronary Arteries on Heart's Action and Its Relationship to Angina Pectoris. W. T. Longcope, New York.—p. 186.
New Bactericidal Agent (Neo-Silvol) for Use in Conjunctival Sac. H. S. Gradle, Chicago.—p. 193.
Tumors of Breast. C. E. Black, Jacksonville, Ill.—p. 193.
Chronic Intestinal Stasis. J. G. Young, Pontiac, Ill.—p. 201.
Dislocations and Fracture-Dislocations Occurring at Acromioclavicular Articulation. R. W. McNealy, Chicago.—p. 202.
*Anterior Branch of Middle Meningeal Artery; Its Anatomic Tunnel and Surgical Importance. J. E. Rowan, Chicago.—p. 205.
Roentgen-Ray Treatment of Carcinoma of Breast. A. W. Erskine, Cedar Rapids, Ia.—p. 209.
Medical Aspects of Malnutrition in Children. C. Hedger, Chicago.—p. 211.
Congenital Hypertrophic Pyloric Stenosis. J. A. Graham, Chicago.—p. 215.

Late Results of Splenectomy.—Mayo and his associates have splenectomized twenty-nine patients for splenomyelogenous leukemia with one operative death. This patient died from pulmonary embolus fourteen days after operation. Seven of these twenty-nine patients are known to be alive and in good condition more than three years following the operation, four more than four years, and one more than five years.

Anatomic Study of Middle Meningeal Artery.—The canal which transmits in the living the middle meningeal artery or the anterior branch of same, Rowan proposes to call a tunnel. In eighty-four complete skulls, only 25 per cent. were as described in anatomies, while 75 per cent. contained an anomaly, either a tunnel on both sides in 31 per cent., a tunnel on the right side only in 19 per cent., and a tunnel on the left side only in 25 per cent. In twenty-seven partial skulls examined he found only five free from tunnels, while the remaining twenty-two contained the tunnel for the artery, the percentage being 19 to 81. In the skulls examined he found a total of 110 tunnels in 195 sides, 56.4 per cent. The length of the tunnels varied from 3 to 5 cm. In operations for the removal of the gasserian ganglion and tumors of the brain low in the middle fossa, and especially in the Hartley-Krause operation, it is exceedingly likely that artery will be torn if a body tunnel is present, when reflecting the dura from bone. The roentgen ray fails to reveal whether a tunnel is present or absent. Its findings in regard to this condition are negative in the pictures taken to demonstrate the presence of tunnels in skulls known to contain them. The branches of the middle meningeal artery can be clearly defined, however, in skulls by means of the roentgen ray. It is not possible to tell whether the patient has a tunnel for the anterior branch or not before operation.

Indiana State Medical Association Journal, Ft. Wayne

Feb. 15, 1922, **15**, No. 2

Present Day Clinical Cardiology. G. R. Herrmann, Ann Arbor.—p. 39.
Epidemic Encephalitis. W. A. Fankboner, Marion.—p. 47.
Some Professional Short-Comings. W. A. Hollis, Hartford City.—p. 54.
Physician. Mysticism and Symbolism in Relation to History of Medicine. F. B. Wynn, Indianapolis.—p. 57.

Iowa State Medical Society Journal, Des Moines

February, 1922, **12**, No. 2

Relation Between Specialist and Profession. R. M. Lapsley, Keokuk.—p. 39.
Medical Profession. F. Billings, Chicago.—p. 40.
Roentgen-Ray Work in Country Practice. C. D. Enfield, Louisville, Ky.—p. 44.
Treatment of Diabetes. E. B. Winnett, Des Moines.—p. 47.
Relation of Hospital Standardization to Obstetrics. M. L. Tinley, Council Bluffs.—p. 49.
Highmorian Empyema. F. L. Secoy, Sioux City.—p. 50.
Outlook for Fourth Era of Surgery. R. T. Morris, New York.—p. 53.
Pyelitis. F. V. Hibbs, Carroll.—p. 54.
*Unusual Indication for Cesarean Section; Case Report. A. B. Deering, Boone.—p. 58.
Rôle of Alkaline Phosphates in Health and Disease. J. H. Dowd, Buffalo.—p. 60.

Hay-Fever and Asthma Cause Cesarean Section to Be Performed.—Deering relates the case of a pregnant woman who was suffering from hay-fever and asthma. For five days she had had a severe cough. She was having pains fairly regularly, every five to six minutes. Every uterine contraction brought on a severe paroxysm of coughing, very similar to the paroxysms of whooping cough. This cough, with which she would choke and frequently vomit, rendered her pains quite ineffectual. Delivery had to be effected by cesarean section.

Journal of General Physiology, Baltimore

March, 1922, **4**, No. 4

Theoretical Response of Living Cells to Contact with Solid Bodies. W. O. Fenn, Boston.—p. 373.
Change of Acid Agglutination Optimum as Index of Bacterial Mutation. P. H. De Kruif, New York.—p. 387.
Mechanism of Granular Growth of Rabbit Septicemia Bacillus Type G. P. H. De Kruif, New York.—p. 395.
Agglutination of Red Blood Cells in Presence of Blood Serums. C. B. Coulter, Brooklyn.—p. 403.
Relative Toxicity of Halides and Certain Other Anions. A. T. Cameron and M. S. Hollenberg, Winnipeg, Man.—p. 411.
*Effects of Radium Radiations on White Mice. K. Sugiura and G. Failla, New York.—p. 423.
Banana Gel. G. McGuire and K. G. Falk, New York.—p. 437.
Quantitative Laws in Regeneration. III. Quantitative Basis of Polarity in Regeneration. J. Loeb, New York.—p. 447.
Electrical Charges of Colloidal Particles and Anomalous Osmosis. J. Loeb, New York.—p. 463.

Effect of Radium on Sex Organs of Mice.—Doses of 1.9, 2.4 and 4.9 millicurie hours, produced no local skin effects, but accelerated the growth of the experiment animals. A dose of 6.8 millicurie hours produced a definite but mild skin erythema and retarded the development of lanugo hair. A dose of 1.9 millicurie hours had no apparent effect on the ovaries, while a slightly larger dose, 2.4 millicurie hours, caused permanent sterility. Large sublethal doses produced severe skin burns, retarded the body growth of the animals, but failed to sterilize the males. The males did not show even temporary sterility when the doses of radiation were close to the lethal dose, showing that the testes are more resistant than the ovaries. The ovaries of sterile females were generally atrophied and colored yellow. The normal histologic structure was altered. The characteristic findings were the destruction of the graafian follicles, with absence of ovum cells. The tests and the epididymis of the radiated mice appeared macroscopically and histologically normal, with the presence of abundant spermatozoa.

Journal of Industrial Hygiene, Boston

March, 1922, **3**, No. 11

Common Colds in Relation to Industrial Hygiene. H. G. Tobey, Boston.—p. 333.
*Infectious Arthritis of Spine. J. F. Curran and S. F. Foster, Worcester, Mass.—p. 339.
*Epinephrin Hydrochlorid Test (Goetsch Test) in Group of Normal Individuals. W. P. Van Wagenen.—p. 343.
Lighting and Ventilation of Factories, Hours of Labor and Health. J. S. Purdy, Sydney, Australia.—p. 349.

Infectious Arthritis of Spine.—Three cases are cited by Curran and Foster in which a strain of the back led to the discovery of an infectious arthritis. Attention is directed to the fact that many times trivial accidents involving the back are treated as muscular strains, which would be the natural diagnosis from superficial examination. In order to arrest early the more serious disorder of infectious arthritis it is good practice to make a roentgen-ray examination in all cases in which there is the least suspicion. Prompt detection is of assistance in locating any foci of infection, as it permits the application of corrective measures which will improve the patient's general condition. These cases also illustrate the need of particular care by industrial physicians in examining the backs of all employees.

Unreliability of Epinephrin Hydrochlorid Test.—The 20 per cent. of Van Wagenan's series of cases which reacted positively to the test make it seem unlikely that the epinephrin hydrochlorid can always be relied on in cases in which clinical observation is unable to establish a diagnosis of hyperthyroidism.

Journal of Urology, Baltimore

March, 1922, **7**, No. 3

*Lymphocystic Urethral Lesions: Evidence of Systemic Tuberculosis. P. S. Pelouze, Philadelphia.—p. 165.
Urethroscopic Findings in Functional Disorders of the Genito-Urinary Tract. A. L. Wolbarst, New York.—p. 209.
Use of High Frequency Current in Treatment of Lesions of the Deep Urethra. H. M. Young.—p. 221.
*Types of Nephritis which Lead to Uremia. N. B. Foster, New York.—p. 235.
Foreign Bodies in Bladder. R. V. Day, Los Angeles.—p. 243.

Lymphocystic Urethral Lesions.—The chief contention made by Pelouze is to the effect that patients presenting these urethral lesions have somewhere in the body an active tuberculous focus. They remain or recur as long as the coexisting tuberculous focus remains active in spite of all local treatment to the urethra, including destruction of the cysts. In the entire absence of local treatment to the urethra they disappear spontaneously after a more or less prolonged course of antituberculous treatment providing the patient's general health responds. Seventy-five living patients, or 83.3 per cent. of those in whom careful clinical studies were possible, showed strong evidences of an active tuberculous lesion. In these seventy-five cases the lesions were located in the lungs in 82.6; kidneys, 17.3; bladder, 14.6; epididymis, 6.6; prostate, 8.0; seminal vesicles, 1.3; peritoneum, 1.3, and bone, 2.6.

Types of Nephritis Which Lead to Uremia.—The evidence at present available, Foster says, shows only that uremia, in any of its forms, is a result of impaired renal function: the degree of impairment is directly proportionate to the number of renal elements (tubule and glomerulus) damaged. This seems quite probable, although not established.

Kansas Medical Society Journal, Topeka

February, 1922, **22**, No. 2

Basal Metabolism. H. N. Tihen, Wichita.—p. 31.
Characters and Events in Practice of Medicine. O. R. Brittain, Salina.—p. 35.
Doctor and Hospital. J. T. Axtell, Newton.—p. 39.
Fables for Doctor. R. Ade.—p. 41.

March, 1922, **22**, No. 3

Hospitals and Nurses. N. Bridge, Los Angeles.—p. 65.
Interrelations of Glands of Intestinal Secretion. J. T. Scott, St. John.—p. 67.
Fitter Families. E. Ernest, Topeka.—p. 71.

Medical Record, New York

March 18, 1922, **101**, No. 11

*Treatment of Arterial Hypertension with Low Sodium Chlorid Dietary. H. A. Houghton, New York.—p. 441.
Compensation for Ocular Injuries. F. Allport, Chicago.—p. 446.
Bactericidal Value of Antidiphtheritic Serum. F. Herb, Chicago.—p. 451.
Cancer a Blood Disease: Should be Treated as Such. R. Bell, London.—p. 453.
Coryza in Infancy and Childhood. J. H. Marcus, Atlantic City.—p. 455.
Surgical Experiences Before Development of Hospital. T. M. McIntosh, Thomasville, Ga.—p. 457.
Purpura; Report of Case. J. H. Darey, Sioux City, Ia.—p. 458.
*An Atypical Exanthem. D. Greenberg, New York.—p. 460.

Low Sodium Chlorid Dietary in Arterial Hypertension.—It has become increasingly evident to Houghton that sodium chlorid is the immediate and chief toxic agent, often associated, especially in cases with higher pressures, with excessive retention of water and possibly uric acid. The blood plasma of a patient with arterial tension should regularly show an excess of sodium chlorid content, and a high Ambard threshold. If this result is not obtained, pathologic processes may usually be looked for in the laboratory technic as well as in the patient. If the hypertension does not become normal within a reasonable time, either the patient's diet is not below 2 gm. in sodium chlorid content, which may be determined by a twenty-four hour urinary examination, or advanced anatomic nephritis is present which prevents rapid dechlorinization and dehydration. Time and proper diet will usually produce the desired results. Cardiac complications are immeasurably benefited by reduction of blood pressure, and this is the natural and rational method of giving relief. The low salt diet furnishes the best therapeutic measure.

Atypical Exanthem in Children.—Greenberg discusses three cases of fever associated with a maculopapular rash in children which could not clinically be classified as belonging to any of the well known acute exanthems. The illness began with fever and restlessness and vomiting; a slight congestion of the throat and soft palate. The temperature at the onset was 102.5 F. and fluctuated between 102.5 and 101 F. for the ensuing three days. On the morning of the fourth day the temperature was 100 F. and did not rise that day. About this time there was noticed a faint macular rash over the abdomen and buttocks. The macules were from 0.5 cm. to 1 cm. in diameter, discrete and became slightly papular and more numerous during the following two days, appearing on the thighs, chest, shoulders and a few on the neck. The rash began to disappear on the third day, so that within four days after its first appearance it had almost entirely disappeared. The maculopapular rash was pinkish to red in color and the lesions fairly regular in size and shape, being more or less round or oval. The size of the individual lesion did not vary much except that it became reddish instead of pinkish, and slightly papular instead of macular, as at the onset. The mucous membranes were negative except for slight throat congestion on the first two days. There was no desquamation, no gland enlargement.

Minnesota Medicine, St. Paul

March, 1922, **5**, No. 3

*Anaphylaxis to Food Proteins in Breast Fed Infants and Its Probable Relation to Certain Diseases of Nursing Infant, Especially Exudative Diathesis. W. R. Shannon, St. Paul.—p. 137.
*Manifestations of Spasmophilic Diathesis in Older Children. G. A. Scherer, Duluth, Minn.—p. 143.
Urinary Lithiasis in Children. G. J. Thomas and C. O. Tanner, Minneapolis.—p. 147.
Five Cases of So-Called Acrodynia. M. D. McNeal, Rochester, Minn.—p. 153.
Acute Intestinal Ileus. H. B. Zimmerman, St. Paul.—p. 156.
*Important Points in Differential Diagnosis of Gastric Ulcer and Carcinoma. H. S. Willson, Minneapolis.—p. 162.
Referred Pain in Heart Disease. C. N. Hensel, St. Paul.—p. 166.
*Epidemic of Paratyphoid Fever Among University Students. C. A. McKinlay, Minneapolis.—p. 172.
*Dystocia Due to Ovarian Tumors. F. J. Souba, Minneapolis.—p. 176.

Anaphylaxis to Food Proteins in Breast Fed Infants.—The skin reactions to food proteins were studied by Shannon in fourteen cases that were regarded as probable food disturbances. These infants were either exclusively breast fed or essentially so. Altogether in the entire series forty different food proteins were tried. Of this number twenty-seven foods gave positive reactions in one or more cases. Nine of these foods gave a wheal at the site of inoculation in one or more cases. Seven other foods gave questionable reactions in one or more cases. This leaves only six foods which did not give possible evidence of sensitization in one or more of the fourteen cases studied. Altogether 254 tests were done on the fourteen patients. Eighty of this number gave a positive result. Of these eighty positive tests sixty-nine were in response to foods that the infants had never eaten. Out of the eighty positive tests fourteen showed wheals, and of the fourteen wheals ten were to foods that the infants had never eaten. It is highly improbable that sensitization could have been inherited in these babies when the mothers did not react to skin tests and when they are not conscious of any discomfort on eating these foods. This being true. Shannon says, it must be assumed that sensitization is actively attained and that it could have come about only as a result of the ingestion of the foods through the breast milk. Experimental evidence is entirely against inherited sensitization through the father. Colic, vomiting, diarrhea, repeated respiratory infections, milk crust, seborrhea and eczema in breast fed babies, are often the result of allergic reactions to foods coming to the infant through the breast milk. In the cutaneous test on infants the erythematous reaction is more common than the wheal and therefore more important. Sensitization often is multiple and may be to a majority of the foods in the mother's dietary. Shannon suggests that the repeated exacerbations of eczema in breast fed babies may be due to newly acquired sensitization to foods the mother eats. The manifestations of exudative diathesis in nursing infants are the result of anaphylactic reactions to food proteins in the mother's dietary, and not a result of fat intolerance, in the majority of cases.

Spasmophilic Diathesis in Older Children.—While the chemistry of the blood in the spasmophilic diathesis may not reveal great changes in the calcium content, Scherer says there is a hyperexcitability of the nervous system which can be shown by the electrical reactions. The condition is relieved by the use of liberal doses of calcium, 6 gm. in twenty-four hours combined with cod liver oil, 8 c.c., twice daily. Increased electrical reactions were noted in six cases. These six children were brought in for examination because of extreme restlessness, peevishness, anorexia and disturbed sleep. Physical examination in all except two cases showed a normal child.

Differential Diagnosis of Gastric Ulcer and Cancer.—Willson states that in a large majority of stomach cases, by the time the symptoms appear the different elements that go to make a diagnosis are, in order of their relative value: Roentgen rays; history; physical examination; gastric analysis; stool analysis; other laboratory findings (blood, etc.).

Analysis of Epidemic of Paratyphoid.—In an epidemic of approximately 106 cases of paratyphoid fever among students, the clinical features were those of typhoid fever with variation in the occurrence of herpes about the lips in several cases, with unusually numerous and large rose spots, with comparatively sudden onset, with frequent profuse sweating, intermittent fever and often quite rapid lysis of fever. Complications were present in about 4 per cent. of the cases and the mortality rate was about 2 per cent. McKinlay is of the opinion that infection probably occurred through the contamination of bulk milk by carriers. Vaccination from one to three years previously did not confer immunity in the twenty individuals who had been previously inoculated with triple vaccine, or appreciably alter the course of the disease.

Dystocia Due to Ovarian Tumor.—Souba reports a case of multilocular cystadenoma of the ovary in a woman, aged 37, in which labor was impeded. The tumor was removed per vaginam immediately after the birth of the baby.

New Jersey Medical Society Journal, Orange

March, 1922, **19**, No. 3

Hay-Fever and Its Treatment with Glycerolated Pollen Antigen. R. O. Clock, Pearl River, N. Y.—p. 63.
Diagnosis of Diseases of Stomach. M. E. Rehfuss, Philadelphia.—p. 71.
Prevention of Mental Disease. A. Gordon, Philadelphia.—p. 75.
Monocular Exophthalmos. B. M. Howley, New Brunswick, N. J.—p. 77.

New York State Journal of Medicine, New York City

March, 1922, **22**, No. 3

Cervical Ribs: Surgical Treatment A. S. Taylor, New York.—p. 97.
Cesarian Section. J. K. Quigley, Rochester, N. Y.—p. 108.
Bags Versus Expectancy in Dry Labor. F. A. Dorman, New York.—p. 113.
Superstitions in Obstetrics. S. B. Blakely, Binghamton, N. Y.—p. 117.
Radium Therapy of Cancer of Mouth and Throat. C. E. Field, New York.—p. 121.
Acute Tubotympanic Catarrh. C. C. Cott, Buffalo, N. Y.—p. 124.
Early Treatment of Congenital Syphilis. T. B. Givan, Brooklyn.—p. 127.
Continued Use of Digitalis. H. E. B. Pardee, New York.—p. 131.
Nitroxygenized Ether Vapor. A. F. Erdmann, Brooklyn.—p. 134.
Agitation for Free Choice of Physician in New York and What It Leads To. E. V. Delphey, New York.—p. 136.

Northwest Medicine Seattle

February, 1922, **21**, No. 2

*Treatment of Brachial Plexus Injuries. A. W. Adson, Rochester, Minn.—p. 33.
Some Newer Tendencies in Therapeutics. A. D. Hirschfelder, Minneapolis.—p. 39.
Health Supervision of School Children. C. P. Knight, Portland, Ore.—p. 44.
Problems of Modern Diabetic Treatment. N. W. Janney, Los Angeles.—p. 47.
Unity in Medical Curriculum. H. B. Torrey, Portland, Ore.—p. 49.
Some Considerations of Cleft Surgical Technic. J. A. Pettit, Portland, Ore.—p. 52.
Remarks on Urology and Syphilis. J. G. Strohm, Portland, Ore.—p. 55.

Treatment of Brachial Plexus Injuries.—Forty-five patients suffering from birth palsy and fifty-six patients suffering from brachial paralysis due to injuries other than at the time of birth are the basis of Adson's paper. In the series than 2 years of age had a shoulder dislocation; five of the of forty-five birth palsies, only one of fourteen patients less ten patients between the ages of 2 and 5, and twelve of the twenty-one patients over 5 had dislocations. A review of the fifty-six palsies due to brachial plexus injuries shows: result of trauma to the shoulder and neck without fracture or dislocation (fourteen treated medically, nine operated on), twenty-three cases; result of trauma to the shoulder and neck associated with fracture of the clavicle or humerus (two treated medically, five operated on), seven cases; associated with dislocation of the clavicle or humerus, treated medically, five cases; result of belt injuries (seven treated medically, six operated on), thirteen cases; result of gunshot wounds (four treated medically, three operated on), seven cases; result of stab wounds (operated on), one case. In two of the patients the upper trunk was involved, in three the middle trunk, in one the lower trunk, in nine the upper and middle trunks, in three the middle and lower trunks, and in thirty-eight the entire plexus, either partial or complete. The injury was on the right side in thirty-three and on the left in twenty-three. Fourteen of the twenty-five operations were failures; eleven patients were improved to approximately 40 per cent. function. In fourteen patients with injuries the result of trauma to the shoulder and neck without fracture or dislocation, who were not operated on, there was an average of 45 per cent. of function. Thirty-two patients were not operated on; four failed to obtain function. No information was obtained from two, and twenty-six had approximately 45 per cent. return of function. Twenty-four patients were operated on; fourteen of these did not obtain return of function; ten had approximately 34 per cent. return. Failure resulted in 12 per cent. of the patients not operated on, and in 58 per cent. of those operated on. The data obtained reveal that the milder cases improve without interference, and that surgery offers but little in any of the brachial plexus injuries due to the type and position of the injury, except in cases of gunshot and stab wounds in which surgery is of great value.

Oklahoma State Medical Association Journal, Muskogee

January, 1922, **15**, No. 1

Syphilis in Newborn. R. M. Anderson and E. L. Yeakel, Shawnee.—p. 1.
Modern Method of Treating Syphilis in Infancy. C. V. Rice, Muskogee.—p. 5.
Child-Bearing Period. J. A. Hatchett, El Reno.—p. 7.
*Rare Complication of Measles: Bullous Eruption. J. R. Burdick, Tulsa.—p. 12.
Toxemia of Pregnancy. W. A. Fowler, Oklahoma City.—p. 15.

Bullous Eruption in Measles.—Burdick's patients were twins, aged 10 months. One child developed a bullous eruption on the fifth day, the other on the fourth day. The bullae were of large size (goose egg) and filled with fluid resembling the vesicle of a severe burn. The fluid at first was perfectly clear but later became cloudy. Microscopic examination showed many pus cells and some organisms in the smears. The measles rash was plainly seen between the bullae, which were fast increasing in number and size; marked congestion of the eyes, Kopliks, spots and a cough were noticed. At the end of the second day pieces of skin, 2 and 3 inches in size, commenced to roll up and peel off from the chest, back, face, abdomen and legs. The arms were the least involved. There was no involvement beyond the junction of the skin and mucous membrane. The eyelids, lips, nose and habia were very much swollen with loss of all the epidermis over and around them.

Pennsylvania Medical Journal, Harrisburg

March, 1922, **25**, No. 6

Treatment of Diabetes by General Practitioner. E. P. Joslin, Boston.—p. 373.
Ophthalmologist's Standpoint. E. A. Weisser, Pittsburgh.—p. 381.
Chemical Procedures of Use in Control of Diabetes. R. R. Snowden, Pittsburgh.—p. 383.
Diagnosis of Portal Cirrhosis. Report of Case. A. J. Simpson, Chester.—p. 389.

Nonsurgical Gall Tract Drainage As Aid to Surgeon. B. B. V. Lyon, Philadelphia.—p. 392.
Foundations of Disease and Their Practical Applications. R. Pemberton, Philadelphia.—p. 401.
History of Northern Medical Association. D. Riesman, Philadelphia.—p. 408.
Superstitions, Fallacies and Facts of Ancient Medicine. F. C. Knowles, Philadelphia.—p. 411.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1922, **26**, No. 9

Assemblage of Apparatus for Purpose of Exciting New Model Coolidge Tube in Oil at 200,000 Volts. F. Hernaman-Johnson.—p. 273.
Spectrometer Contrived for Purposes of Practical Radiology. A. March, K. Staunig and O. Fritz.—p. 285.
Regulation of Vacuum of Modern Therapeutic Roentgen-Ray Tubes. C. Andrews.—p. 293.

British Medical Journal, London

March 4, 1922, **1**, No. 3192

*Toxemias of Pregnancy. A. L. McIlroy.—p. 335.
*Tuberculosis in Wales. S. L. Cummins.—p. 338.
"Buffering" of Blood. A. V. Hill.—p. 340.
*End Results of Removal of Tonsils and Adenoids. H. S. Sington.—p. 341.
*After Results of Twenty-One Cases of Ileocolostomy Performed for Tuberculous Bones and Joint Diseases. H. Drummond.—p. 342.
Function of Chromaphil Tissues in Relation to Splanchnic Stimulation. A. W. Sheen and S. Vincent.—p. 343.
Relation of Corpus Luteum to Menstruation and Pregnancy. W. R. MacKenzie.—p. 343.
Mucocele of Frontal Sinus. J. Acomb.—p. 344.
Amebic Liver Abscess. L. Rogers.—p. 345.
Exophthalmic Goiter in Congenital Syphilis. N. F. Rowstron.—p. 347.
Pneumococcal Peritonitis Simulating Acute Gangrenous Appendicitis. J. F. Rey.—p. 347.
Intestinal Obstruction Due to Paralytic Ileus. C. L. G. Chapman.—p. 347.

Toxemias of Pregnancy a Public Health Problem.—McIlroy stresses the point that the main number of severe cases are preventable if treatment can be given in their early stages. Every pregnant woman should be kept under medical observation, and every case of albuminuria should be investigated. Every premature birth should be notified, no matter what period of pregnancy, and facilities should be given for examination of the ovum. The public health authorities should take up the question of toxemia of pregnancy just as they have taken up the question of syphilis. Antenatal beds should be provided in all maternity hospitals. Financial facilities should be given to research workers, especially in the domain of physiology, for the investigation of the normal function of human pregnancy.

Tuberculosis in Wales.—The tuberculosis of Wales, Cummins says, differs from that of England in certain well defined characters: The mortality rate is, on the whole, higher. The highest mortality, relatively to the numbers of the population, occurs not in the crowded town areas, but in the sparsely populated mountainous districts. The mortality tends to the "young adult type." Although the mortality is high among the population in general, it is less among infants and young children than in England. The clinical type in Wales appears to be more acute than in England. In those parts of Wales where the mortality is highest it does not show, as in England, a close correlation with the mortality from all causes, but outstrips this in a very marked degree, showing that some other factor or factors than faulty hygiene must be at work. The hypothesis advanced by Cummins is that where human beings are scattered and isolated, the passing of germs from one person to another is more or less restricted, except within the home. Where, on the other hand, human beings are herded together and constantly associated one with another, the germs carried by each are passed on indifferently. But the number of germs so passed on may be, and probably is, relatively small in most cases, except in infected houses. In these circumstances, in crowded communities, there should be in almost every individual some degree of infection with the tubercle bacillus. In the majority the degree of infection should be small, leading to the acquisition of a relative immunity rather than to active disease. The inhabitants of a large city must adapt himself to the bacteria that are so numerous in his surroundings in order that he may live at all. Therein, perhaps, lies the danger to those who quit the sparsely populated areas to seek the higher pay and the more attractive life of densely crowded towns. All these facts seem to point to the importance of varying degrees of acquired resistance as the essential factors underlying the differences between the tuberculosis of Wales and elsewhere. If these factors are, indeed, the fundamental ones, if Nature is gradually getting rid of tuberculosis, by a process of unconscious vaccination, then efforts at prevention should be directed to the discovery of a safe and efficient vaccine.

End Results of Tonsillectomy.—In twenty-four of fifty-two cases investigated by Sington, no further attendance was needed. In five cases, attendances were required for gastric or intestinal disorders only; in four cases, for congenital deformity; in four cases for zymotic diseases; in two cases, for appendicitis; and in ten cases for other disturbances unconnected with the throat. In only three cases—asthma, congenital heart, and bronchitis—was attendance after the operation for removal of tonsils and adenoids at all frequent, and in these instances it was very much reduced.

End Results of Iliocolostomy Done for Bone Tuberculosis.—Of the twenty-one patients operated on, three are known to be alive at the present time; one, with hip disease, is cured, while the remaining two are greatly improved. Five patients cannot be traced up to date; two of these were known to be well and healed two years after operation; the remaining three were not cured when last seen, eighteen months, twelve months, and three months, respectively, after the operation. Three died from intestinal obstruction following the operation, one on the fourth day, one on the eighth day, and one on the nineteenth day. In all three cases the diagnosis of intestinal obstruction was made early and operation was performed at once, but the serious general condition of the patients interfered with recovery. A boy with a discharging left hip joint was no better as the result of the operation, and succumbed to amputation at the hip joint thirteen months later. The remaining nine patients when traced were found to be dead as the result of tuberculosis either from the primary focus or from meningitis. They lived for periods varying from one to five years after the operation.

Edinburgh Medical Journal

February, 1922, **28**, No. 2

Asthma: Pathology and Treatment. J. J. G. Brown.—p. 54.
Cesarean Section: Indications and Technic. J. W. Ballantyne.—p. 74.
Diagnosis and Prognosis in Kidney Cases by Tests for Renal Function. J. D. Comrie.—p. 34.
Pneumoperitoneum of Pelvis as an Aid to Gynecologic Diagnosis. R. L. Impey.—p. 21.

Japan Medical World, Tokyo

February, 1922, **2**, No. 2

*Experimental Studies on Measles. R. Kawamura.—p. 31:
Early Diagnosis of Pulmonary Tuberculosis by Roentgen Rays. T. Miyahaha.—p. 35.
Cause and Treatment of Pleural Infection Following Operations on Pleural Cavity. H. Iijima.—p. 40.

Experimental Studies in Measles.—With blood taken sixty hours before the appearance of the eruption and only a few hours after the onset of fever of a measles patient, Kawamura was able to produce typical measles in monkeys by subcutaneous injection. For three generations positive results were obtained in monkeys, but experiments with rabbits and guinea-pigs were chiefly negative. The animals had a certain definite incubation period (from seven to nine days), with a slight fever, conjunctivitis, rhinitis, roseolar papular eruptions, Koplik's spots and leukopenia. Leukopenia occurred before the appearances of the eruption and the first stage of the febrile condition. There was no leukocytosis at any time. There was an increased number of neutrophils and decreased lymphocytes, and no marked changes in the other types. Histologically, in the corium there was marked increase of large mononuclear lymphocytes, and in the epithelium necrosis, vesicular swellings, cystic formations and parakeratosis were noticed. The leukocyte pictures and eruptions resemble very much tsutsugamushi disease.

Journal of Neurology and Psychopathology, Bristol

February, 1922, **2**, No. 8

Nature of Mental Deficiency. A. F. Tredgold.—p. 311.
*Comparative Study of Three Colloidal Reactions on Cerebrospinal Fluid. D. O. Riddel and R. M. Stewart.—p. 325.
*Phylogenetic Significance of Plantar Response in Man. G. de M. Rudolf.—p. 337.
*Iridocyclitis—Parotitis—Polyneuritis: New Clinical Syndrome. A. Feiling and G. Viner.—p. 353.

Result of Three Colloidal Reactions on Spinal Fluid.—In a comparative study made by Riddel and Stewart of spinal fluids in thirty cases of general paralysis the colloidal gold test and the colloidal benzoin reaction of Guillain, Laroche and Lechelle gave parallel results; the gum mastic reaction was in less close agreement. The colloidal gold and the gum mastic tests gave paretic curves in nonparetic fluids. The colloidal benzoin test gave paretic curves only in paretic fluids. Syphilitic curves were obtained in all three tests in cases that clinically were not examples of neurosyphilis. In the colloidal benzoin reaction a slight degree of precipitation in the middle series of tubes was often obtained with normal cerebrospinal fluid.

Phylogenetic Significance of Plantar Response.—The investigations made by Rudolf show that there is a flexor plantar response of a primitive character that occurs in the lower animals, in the majority of very young human infants (the infantile flexor response) and in certain cases of total transection of the adult human cord. The primitive flexor plantar response changes to an extensor response as development proceeds, either as the animal scale is ascended or as the child grows older, or as the spinal cord readapts itself to its altered conditions after transection. The extensor plantar response changes to a flexor plantar response in animals higher than the anthropoid apes, i. e., in man. Thus there is a succession of flexor, extensor, flexor, or F. E. F., responses both in the phylogeny of the race and in the ontogeny of the individual. In the case of total transection of the cord in man, the final adult flexor plantar response is not obtained. The theory that the alteration of the plantar response from extensor to flexor is due to the myelination of the pyramidal tracts is apparently incorrect; more probably it is due to the myelination of the peripheral nerves, which occurs at the eighth month of life. The hypothesis that the extensor plantar response of infants and of "spinal" man is an atavistic phenomenon dependent on the prehensile toe of our arboreal ancestors is not shown by these investigations to be incorrect. The normal adult flexor plantar response is due to the control of the brain over the lower centers of the cord, and this control is exercised only by the brain in its most highly developed form, i. e., the brain of man.

Iridocyclitis-Parotitis-Polyneuritis.—The syndrome described by Feiling and Viner consists of iridocyclitis and parotitis, with or without involvement of either cranial or peripheral nerves, and occasionally accompanied by cutaneous lesions. Whether this syndrome is produced by any specific infection or may occur as the result of several different infective agents is an open question. In the case cited no definite infective agent could be isolated.

Journal of State Medicine, London

February, 1922, **30**, No. 2

Do We Neglect the Industrial Skin Sufferer? E. P. White.—p. 47.
The Problem of the Working Mother. A. L. McIlroy.—p. 60.
*Biologic Characters of Leptospira Icterohemorrhagiæ. A. S. Griffith.—p. 70.

Biologic Characters of Leptospira Icterohemorrhagiae.—Semigelatinous bovine serum, to which had been added a small quantity of fresh citrated blood of a normal guinea-pig was used by Griffith for the routine cultivation of the spirochete. Virulence tests have been made on the guinea-pig and rat only. Guinea-pigs may sometimes possess a very high degree of natural immunity to the disease. The rat is resistant to the inoculation of spirochetes which are highly virulent to guinea-pigs. The spirochetes are not, however, all destroyed in the body of the rat, but some may pass into the kidneys where they live and multiply, and from which they are excreted with the urine intermittently. The long persistence of the spirochete in the kidneys of a rat may provide a simple and inexpensive means of preserving a virulent strain for laboratory purposes. Young recently isolated cultures of the spirochete are pathogenic for guinea-pigs and produce in them the same type of disease as tissue spirochetes. The virulence of the cultivated spirochete is, however, soon lost. None of the guinea-pigs inoculated developed spirochetosis. The preparation of a therapeutic antispirochetal serum is also discussed by Griffith.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1922, **25**, No. 4

Care and Treatment of Ear in Tropics. W. S. Sharpe.—p. 37.
*Detection and Identification of Maltose, Galactose, Saccharose and Inulin by Mycologic Method. A. Castellani and F. E. Taylor.—p. 41.

Detection of Maltose by Mycologic Method.—Castellani and Taylor state that the simplest way of carrying out the method to determine whether a substance is or is not a certain carbohydrate, is to test on the substance whenever possible the action of two germs known to be identical in all their fermentative reactions except on that particular carbohydrate. For instance, in order to see whether a given chemical substance is maltose, the substance may be tested with two organisms identical in all their biochemical reactions except their action on maltose, one fermenting it, the other not.

Lancet, London

March 4, 1922, **1**, No. 5140

*Nerve Supply of Parietal Peritoneum and Subperitoneal Tissues. V. Z. Cope.—p. 415.
Duodenal Regurgitation into Stomach During Gastric Digestion. C. Bolton and G. W. Goodhart.—p. 420.
*Infantile Mortalities of Rich and Poor. D. Forbes.—p. 426.
Shortening of Postoperative Convalescence: Differences Between British and Continental Treatment. H. E. Claremont.—p. 427.
Twilight Sleep: Seventy-Five Cases. H. M. Gerson.—p. 428.
Femoral Hernia of Unusual Size. G. Keynes.—p. 429.
Case of Abdominal Pregnancy. W. G. Nash.—p. 429.
Cesarean Section in Falkland Islands. F. G. W. Deane.—p. 430.

Nerve Supply of Parietal Peritoneum.—The clinical application of knowledge of the nerve supply of the parietal peritoneum, Cope says, depends on the various ways in which irritation of the nerve terminals may be made known. The manifestations depend partly on the nature of the irritant. The local pain due to parietal irritation varies in amount and diagnostic value according to the part affected. When the subperitoneal tissue lying over a muscle becomes edematous and irritated, movement of the subjacent muscle causes local pain. Under certain conditions pain results from abnormal states of the viscera. No referred pain of any localizing value is ever furnished by the nondemonstrative areas. That part of the abdominal lining in which diagnosis is most aided by referred pain is the diaphragmatic area. Pain is referred to the right shoulder from the under surface of the right side of the diaphragm, and similarly from the left side to the left shoulder. The maximum site of pain when the dome is irritated is the acromioclavicular joint. If ain is felt equally on top of both shoulders a median irritation is presented. Cope points out that when a patient comes to the surgeon with symptoms of intestinal obstruction an almost painless femoral hernia often proves to be the source of the trouble. In such cases there is referred pain in the abdomen, but the local pain, though present, is so slight as to be overlooked by the patient. If a complete coil of intestine be present in the sac there may be greater tenderness, but if only a knuckle of intestine or omentum there may be little or insignificant pain.

Infant Mortality Among Rich and Poor.—Forbes states that the chances of survival of the newly born infant are not materially influenced by the social and sanitary conditions under which the mother lives during pregnancy, and given equally favorable surroundings the infants of the various classes have equal chances of survival after birth. The mortality among the infants of the rich in the first year of life is less than one half of the mortality among the infants of the very poor. The fall in infantile mortality from diarrhea is likely to continue. In the poorest it is seven times greater than in the well to do. The infantile mortality rate from bronchitis and pneumonia is five times as great in the poorest as in the well to do.

Medical Journal of Australia, Sydney

Jan. 21, 1922, **1**, No. 3

Roentgen-Ray Link Between Medicine and Dentistry. D. Smith.—p. 57.
*Induction of Labor Versus Cesarean Section. A. Sherwin.—p. 59.
Survey of Effect of Venereal Disease Legislation in Western Australia for Period of Five Years. R. C. E. Atkinson.—p. 65.
Radical Abdomino-Perineal Operation for Cancer of Cervix and Vagino-Rectal Septum. H. H. Schlink.—p. 67.
*Case of Spontaneous Rupture of Heart. G. A. Birnie.—p. 68.

Jan. 28, 1922, **1**, No. 4

Prophylaxis of Venereal Diseases. P. Fiaschi.—p. 85.
Prophylaxis in Venereal Diseases. L. E. Ellis.—p. 93.
Failure of Tartar Emetic in Treatment of Two Cases of Hydatid Disease. N. H. Fairley.—p. 94.
Two Cases of Placenta Praevia. J. L. T. Isbister.—p. 96.
Four Cases of Amebic Dysentery. H. C. Colville.—p. 96.

Induction of Labor Versus Cesarean Section.—Sherwin is an ardent advocate of induction of labor as against cesarean section. He says that induction of premature labor in selected cases must appeal strongly to the thinking obstetrician, firstly on account of the simplicity of its performance and its undeniably satisfactory results to mother and child and secondly on account of the active mental exertion and patient observation necessitated in determining the precise moment for its performance. This very reason, unfortunately, would tend to make it unpopular with the overworked general practitioner, coupled with a natural timidity that inopportune interference might prove disastrous to his patient and so bring discredit on himself. To such, cesarean section, which can readily be performed by any one possessing ordinary operative ability, enhanced by the theatrical glamor which still surrounds the operation, appears the far easier method of dealing with a complicated labor.

Spontaneous Rupture of Heart.—Birnie reports the case of a woman, aged 74, who for a week had not been feeling well, but on the previous day had been able to walk about. For no apparent reason she had remained in bed on the day of the attack, and at 3 p. m. had sat up suddenly, had called out loudly and had immediately fallen back apparently unconscious. This attack lasted only a few moments and was followed by severe pain and vomiting, and a little later the bowels acted into the bed. The heart sounds were feeble, but regular in rhythm, the rate being 84. Percussion showed no evidence of increased cardiac dulness. The lungs were clear. Nothing abnormal could be detected in the abdomen. With stimulation, the pulse gradually returned, at first feeble and regular, but later became completely irregular. This continued for about half an hour, when the pulse suddenly became regular again. The apex beat was in the nipple line. At intervals she sat up and retched violently; throughout the pain was apparently intense. She died five hours later. A postmortem examination disclosed the pericardium full of blood. The weight of the heart was 255 gm. It contained some patchy fibroid areas. Both coronary orifices were partially occluded by atheroma. The coronary arteries were calcified. On the anterior wall of the left ventricle, 1.25 cm. from the interventricular septum and 3.2 cm. from the apex, there was a perforation about 1.25 cm. long. The endocardial aspect showed a large, ragged, perforated area covered by an adherent, fairly recent antemortem clot, channelled through the center. The heart muscle in the neighborhood of the rupture showed old fibrosis and muscle atrophy, with great thinning of the wall. An organizing antemortem thrombus was attached to the site of the rupture, suggesting a preliminary splitting of the endocardium, followed later on by a rupture through the organizing clot and the overlying thinned heart wall.

Practitioner, London

February, 1922, **108**, No. 2

Aortic Regurgitation. S. Russell-Wells.—p. 77.
Clinical Aspect of Hypertension. L. T. Thorne.—p. 102.
*Negligible Glycosuria. O. Leyton.—p. 113.
Milestones in Refraction Work. E. Clarke.—p. 119.
Glaucoma (Simple Chronic). H. Smith.—p. 131.
Acute Abdominal Conditions. L. Bromley.—p. 137.
Prevention of Venereal Diseases. M. W. Browdy.—p. 144.

Negligible Glycosuria.—The average quantity of dextrose in the urine of healthy people is about 0.02 per cent. A comparatively small number of healthy human beings excrete about 0.5 per cent. of dextrose in their urine; this may be considered either a fault in their metabolism, similar to alkaptonuria and cystinuria, or a fault in their structure, like webbed fingers and harelip. To these cases Leyton applies the term negligible glycosuria which has the advantage of describing the complaint, although it does not refer to any pathologic cause, but since the pathologic cause is unknown, perhaps this is no disadvantage. The peculiarity of the disease is that the individual passes a urine which contains from 0.1 to 1.0 per cent. dextrose, the percentage varying in different cases, but usually being fairly constant in the same individual. Neither the quality nor quantity of the food taken makes any appreciable difference to the percentage of sugar in the urine excreted, in the majority of cases. Negligible glycosuria is not associated with any symptoms whatever, and, therefore, the condition is discovered when a routine examination is being conducted for life insurance or some other cause. The recognition of the condition is important not only in order to prevent healthy individuals from being treated as diabetics, but also to meet the argument occasionally raised by true diabetics when they are beginning to forget the benefits derived from correct treatment. Leyton has during the last two years examined eighteen persons who had negligible glycosuria; several of them had been treated for diabetes mellitus. Three cases are in the same family.

Archives Médicales Belges, Liége

September, 1921, **74**, No. 9

*Chronic Intestinal Stasis. V. Pauchet.—p. 801.
Mental Tests of the Insane, Idiots and Imbeciles. H. Hoven.—p. 814.
Examination in Angina Pectoris. Danzin.—p. 833.

October, 1921, **74**, No. 10

Extraction of Foreign Bodies from the Esophagus and Upper Air Passages. E. Henrard.—p. 897.
Serodiagnosis of Tuberculosis by Complement Fixation. G. Ichok.—p. 908.
Training in Mathematics Required for General Chemistry and Alimentary Chemistry. H. Dackweiler.—p. 924.

Chronic Intestinal Stasis.—A somewhat similar article by Pauchet was summarized in The Journal, April 1, p. 1008.

Archives de Médecine et de Pharm. Militaires, Paris

November, 1921, **75**, No. 5

Ictero-Hemorrhagic Spirochetosis. de Vezeau de Lavergne.—p. 353.
Three Cases of Leprosy in a Senegalese Regiment. Laporte.—p. 373.
Leprosy in a Chinese Workman in France. P. Biérer.—p. 379.
Weil-Félix Test Reaction in Typhus. Laporte.—p. 382.

Bulletin de l'Académie de Médecine, Paris

Feb. 14, 1922, **87**, No. 7

*Mothers' Home. Bosc.—p. 193.
Typhoid in 1921 at Tenon Hospital. P. Emile-Weil.—p. 196.
*Roentgen Treatment of Blood Producing Organs in Pulmonary Tuberculosis. F. Trémolières and P. Colombier.—p. 198.
Primary Cancer in Pleura. A. Rémond and Minvielle.—p. 204.
Juvenile Osteo-Arthritis. J. Silhol.—p. 206.

Maternal Home.—Bosc describes the workings of the annex to the Maternity at Tours which provides a home for nursing women and gives them a daily stipend of 1.25 francs. This sum is doubled if they will suckle another child also. These *maisons maternelles* are being inaugurated in different cities, and are doing a fine work. At the Tours institution there has been no death among the forty-six children, and only one child has been abandoned by its mother. The woman thus has a home as long as she wishes while she is nursing the children in whole or in part. His communication was referred to a committee for discussion of ways and means to have every maternity thus supplemented with a mothers' home.

Radiotherapy in Pulmonary Tuberculosis. — Trémolières and Colombier have been applying the roentgen rays to stimulate the functioning of the blood-producing organs as an aid to the defensive forces in pulmonary tuberculosis. Five cases are described in detail of the total twenty-three thus treated. All were in an advanced stage of the disease, rebellious to sanatorium treatment, and mostly with cavities. All have been decidedly improved. The spleen, sternum and long bones were the regions exposed, and the results justify, they think, further application of this indirect radiotherapy of tuberculosis. Patients able to rest or do only light work seemed to do better than those who had to keep at hard work.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 20, 1922, **46**, No. 2

*Familial Little's Disease. H. Roger and Smadja.—p. 72.
Imported Kala-Azar at Paris. Klippel and Monier-Vinard.—p. 76.
*Myelitis in Adults. G. Etienne, A. Stroup and J. Benech.—p. 86.
Relations Between Syphilis and Diabetes. Villaret and Blum.—p. 90.
*Primary Acute Plague Edema. G. Delamare.—p. 94.
Diaphragmatic Eventration. A. Louste and E. Fatou.—p. 98.
*Malaria with Addison's Disease. A. Chauffard, Huber and Clément.—p. 117.
Aneurysm of Right Carotid in Man. Pinard and Mendelsohn.—p. 125.
Polyneuritis After Bacillary Dysentery. Coyon and Debray.—p. 129.

Little's Disease in Two Sisters.—The children are 10 and 7 years old, and the symptoms indicate predominance of the spinal cord. There are signs of inherited syphilis, and the father has a positive Wassermann reaction.

Serotherapy of Myelitis in Adults.—Three new cases are reported of the cure of acute myelitis in adults under antipoliomyelitis serum. In one the paraplegia had developed suddenly the third day of an infectious sore throat. The paralysis of the legs was total, and the arms showed slight paresis. The serotherapy was begun the fourth day of the paralysis, and by the fourteenth all the symptoms had retrogressed under it in the first case. The myelitis was more diffuse in the other cases, and the antiserum was not given till the ninth week, but the man of 40 was able to get up and walk the tenth day.

Primary Acute Plague Edema.—The sailor, 45 years old, presented a primary, acute, serohemorrhagic and diffuse edema of the subcutaneous tissue as the only manifestation—except for a small focus of congestion at the base of the right lung—of bubonic plague. He died the eightieth hour, before any buboes had developed.

Chronic Malaria.—The malaria was contracted during military service in the Near East, and it had been supposedly cured by eighteen months of quinin treatment. The malaria roused again when the quinin was suspended, and symptoms of Addison's disease became superposed on the malarial paroxysms, with also unilateral atrophy of the optic nerve and peripheral polyneuritis. Inflation of the suprarenal region by the Carelli method revealed atrophy of the left suprarenal, and adhesions around it. Great improvement has been realized under quinin and arsenicals, but suprarenal treatment has not shown much benefit.

Journal de Médecine de Bordeaux

Feb. 25, 1922, **94**, No. 4

Pathogenesis and Treatment of Edema. P. Mauriac.—p. 103.
Bactericidal Action of Certain Alcoholic Appetizers. B. Auché and M. Jobard.—p. 106.
Gastrectomy for Midgastric Cancer. Charrier and Princeteau.—p. 107.
Malaria and Tuberculosis. L. Verdelet.—p. 110.
Recurring Urticaria Traced to Wool Mattress. R. Damade.—p. 111.

Journal de Radiologie, Paris

February, 1922, **6**, No. 2

Roentgen Ray Examination of Tumors in the Left Hypochondrium. L. Mallet and R. Coliez.—p. 57.
Fracture of Head of Radius. L. J. Colaneri and Delay.—p. 68.
Diagnosis of Diverticulum in Duodenum. R. Freissly.—p. 69.
*Pleural Suppuration from Foreign Body. Chauviré.—p. 74.
Roentgen Ray Observation of Volvulus of the Stomach. A. Rosselet and R. Gilbert.—p. 76.
Radium Applicator for Gastric Cancer. A. Jentzer.—p. 81.

Pleural Suppuration from Foreign Body in Thorax.—The foreign body in the case described was a drain tube left from a previous intervention a year before. Roentgenoscopy first explained the persisting pleural suppuration during all these months. The black rubber tube was 8 cm. long.

Journal d'Urologie, Paris

December, 1921, **12**, No. 6

Phthalein Tests of Kidney Functioning. G. V. Tardo.—p. 393.
Extraprostatitis of Urethral Origin. Aversenq.—p. 413.
Rupture of Varicose Vein in Bladder. G. Marion.—p. 417.
Ureometer for the Ureosecretory Constant (Ambard Index). L. Ferria.—p. 419.

Néoplasmes, Paris

Jan. 15, 1922, **1**, No. 1

*The Erythrocytes in Cancerous Blood. A. Robin.—p. 5.
Comparative Value of Roentgenotherapy, Radium Therapy and Surgery in Treatment of Cancer of the Tongue. P. Delbet.—p. 17.

The Erythrocytes in the Course of Malignant Tumors.—Robin reviews what various writers have contributed to this subject, as well as the results of his own research. The great variety of findings and the fluctuations in the individual case are striking. Nothing characteristic of cancer or any type of cancer seems to have been discovered.

Presse Médicale, Paris

Nov. 5, 1921, **29**, No. 89

Fixation of Complement in Tuberculosis. Rieux and Zoeller.—p. 881.
Arsenicals and Serotherapy in Gangrene of Lung. L. Cheinisse.—p. 886.

Feb. 11, 1922, **30**, No. 12

*Action of Radium on Uterine Cancer. M. Letulle.—p. 121.
Respiratory Changes in Blood Pressure. Constantin and Soula.—p. 123.
*Arsphenamin Treatment of Syphilis. M. Pomaret.—p. 124.
Latest Literature on Quinidin in Heart Disease. L. Cheinisse.—p. 126.

Action of Radium on Uterine Cancer.—Letulle gives photomicrograms of the uterus removed in a number of cases after a course of radium treatment. A fibrinoid necrosis of the vessels is a constant finding.

Arsphenamin by Intramuscular Injection.—Pomaret reports the experimental, chemical and other bases for his conviction that the intramuscular route is the preferable one for administration of the arsenicals in syphilis.

Feb. 15, 1922, **30**, No. 13

*Roentgenography of the Kidney. Delherm and Laquerrière.—p. 133.
Bismuth Stomatitis. R. Azoulay.—p. 134.
*Pathology of the Parotids. Marthe Erlich.—p. 138.

Injection of Gas to Outline the Kidney.—Delherm and Laquerrière applied the Carelli-Sordelli method of inflation of the bed of the kidney with oxygen or carbon dioxid, and state that their experience with forty cases has been free from any serious by-effects, while the radiographic findings have been rendered amazingly instructive. Their article is illustrated and the technic described. (Compare with editorial in The Journal, Oct. 1, 1921, p. 1108.)

Pathology of the Parotids.—Erlich writes from Warsaw that the parotids were distinctly enlarged in 25 per cent. of 1,576 children examined. The proportion showing this hypertrophy of the parotids was largest between the ages of 2 and 6. Only a very few of these children had ever had mumps. She suggests that privations in diet may be a factor in this pathology of the parotids, and urges that the parotids of animals with deficiency diseases should be investigated.

Progrès Médical, Paris

Feb. 4, 1922, **37**, No. 5

*Functioning of Ovaries During Gestation. H. Vignes.—p. 49.
Tumors of the Pituitary Gland. Lereboullet.—p. 52.
Cellulitis and Neuralgia. Wetterwald.—p. 55.
Differential Diagnosis and Treatment of Acute Delirium and Delirium Tremens. H. Damaye.—p. 57.

Functioning of Ovaries During Gestation.—Vignes has devoted two years of clinical and experimental research to the functioning of the ovaries during gestation. He believes that the rôle of the ovary is not devolved on any of its particular elements; and that it is absurd to base theories on the activity of the interstitial or other cellular elements. He says that there are two kinds of elements in the ovary: the ovum, and what he terms the *agent de liaison* between the ovum and the organism. The ovum seems to secrete a very active substance that he calls *substance x*, of the nature of which we have no knowledge. The cells of the ovary are the support of the ovum; they give it assistance and can, by reversive action, protect the organism against its activity. The *x* substance is absorbed by the lipoids in the lutein cells and forms a complex acting on physiologic functions. In case of pathologic overproduction of the *x* substance, there is more production of lutein cells. The hyperluteinism thus is the consequence of excessive ovarian functioning, and not its essence. He then summarizes the different modifications undergone by the ovaries during gestation.

Revue Franç. de Gynécologie et d'Obstét., Paris

December, 1921, **16**, No. 12

*Jaundice in the New-Born. F. A. Deluca.—p. 641.
Organotherapy in Fowls. C. Ouy-Vernazobres.—p. 645.
*Hysterectomy for Fibroma Entailing Abortion. A. Grosse.—p. 658.
Place of Pituitary Extract in Obstetrics. L. M. Pierra.—p. 661.

Jaundice in the New-Born.—Deluca's discovery of laceration of the dura mater or meningeal hemorrhage in 36 per cent. of 554 infant cadavers has already been summarized in these columns, March 11, 1922, p. 766. The disintegration of the extravasated blood explains the jaundice. In five cases reported, this cause for the icterus neonatorum was beyond question. The jaundice in such cases is merely a sign, a symptom of the meningeal hemorrhage. The latter is more likely to occur with protracted labor, instrumental delivery and in cases of syphilis.

Fibroma Interfering with Pregnancy.—The large fibroma had entailed nonreducible retroversion of the uterus, and this had led to abortion. Grosse's subtotal hysterectomy probably warded off serious complications as the 4 months' fetus was found profoundly infected.

Schweizerische medizinische Wochenschrift, Basel

Feb. 23, 1922, **52**, No. 8

Mechanism of Genital Prolapse. H. Meyer-Rüegg.—p. 189.
Rectal Examination in Obstetrics. A. Labhardt.—p. 193.
Present Status of Vitamin Question. E. Rothlin.—p. 195. Conc'n in No. 9.
Hydatidiform Mole Before the Menopause. E. Frey.—p. 201.
Amyloid Tumors of the Mesentery. M. Ecoffey.—p. 202.

Archivio Italiano di Chirurgia, Bologna

December, 1921, **4**, No. 6

*Vicious Circle After Gastro-Enterostomy. G. Razzaboni.—p. 553.
Emphysema After Lesions of Thorax. C. Gamberini.—p. 643.
Case of Volvulus of Stomach. D. Giorgacopulo.—p. 660.
Fracture of Odontoid Process of Axis without Symptoms from Spinal Cord. G. Pieri.—p. 669.
Autoplastic Correction of Relics of Membranous Pericolitis. F. Nassetti.—p. 685.

The Vicious Circle After Gastro-Enterostomy.—Razzaboni's critical, clinical and experimental study of the acute vicious circle fills nearly 100 pages, including nearly twenty pages of bibliography. The practical deductions emphasize the gravity of the disturbances resulting from the vicious circle. Although improved technic has rendered it much rarer than of yore, it still happens occasionally, even when no cause for it can be discovered. Once installed, and rebellious to change of position and the stomach tube, the only relief is from a new operation, and for this a supplementary anastomosis, with or without gastrostomy, or a new gastro-enterostomy or a plastic operation on the stomach according to Kraske should be considered. Early intervention is the only means to ward off irreparable damage. His numerous plates of his experimental findings confirm the autodigestion of the mucosa, and injury of the liver, pancreas, etc.

Pediatria, Naples

Feb. 15, 1922, **30**, No. 4

*Agglutinins in Diagnosis of Typhoid. S. Maggiore.—p. 145.
Blood Pressure in Whooping Cough. F. de Angelis.—p. 152.
*Food Requirements of Breast-Fed Infant. C. Pestalozza.—p. 158.
The Pirquet Diet System. U. De Gironcoli.—p. 170.

Agglutination Test.—Maggiore's tables show that while the serum of typhoid patients will agglutinate their own typhoid bacilli, it may not have any agglutinating action on typhoid bacilli from other subjects, while the serum from others may agglutinate all the strains. Agglutination tests therefore may give negative findings unless the individual typhoid bacilli are used.

Food Requirements of the Infant.—Pestalozza here reports another series of research on a healthy infant, recording its weight before and after feeding every day for twenty-four weeks, during which time the breast milk was given daily chemical analysis, and the proportions of fat, lactose and albuminoids recorded and compared with the infant's weight week by week. The tables and charts reproduced give thus a standard for comparison. The child had doubled its weight in 120 days, and never displayed any tendency to vomiting or diarrhea. One table gives the normal standards as determined by other pediatricians. He gives also the energy quotient, the growth quotient, and the number of calories from week to week.

Policlinico, Rome

Feb. 6, 1922, **29**, No. 6

*Wassermann Reaction. S. de Villa and A. Ronch.—p. 185. Conc'n No. 7, p. 217.
*Leukemic Hematoma. V. Aloi.—p. 192.
The Hydatid Cyst Thrill. B. Masci.—p. 194.
*Advantages of Combined Treatment for Cancer. G. Rocchi.—p. 195.

Experimental Study of Wassermann Reaction in Children.—De Villa and Ronch report extensive research at the children's clinic in Rome in charge of Luzzatti. Sixteen tables show the findings with various lipoids, human milk, serum, etc., used as amboceptor or antigen. It was apparently established that cholesterin or a mixture of lipoids can be used for the antigen in the Wassermann reaction. Human milk can also serve as a partial antigen, and human serum as a partial amboceptor. The serum from the colostrum of women, syphilitic or not, can substitute completely the syphilitic amboceptor, but can never serve as an antigen. The proportion of cholesterin in the blood has no influence on the Wassermann reaction. The final conclusion is that the antigens function by their lipoid content, and that the amboceptors of syphilitic serums are of albuminoid proteic nature.

Spontaneous Hematoma.—The man of 30 developed a rapidly growing tumor in the back below the scapula. It was due to extravasated blood which spread around the right half of the chest. Puncture showed the blood count characteristic of leukemia. The previously healthy man died in less than two months from the first symptom, which had been the pain from pressure as the hematoma developed.

Combined Treatment of Cancer.—Rocchi urges combination of operative measures with radium and roentgen-ray treatment, especially deep radium treatment.

Riforma Medica, Naples

Jan. 16, 1922, **38**, No. 3

*Sciatic Neuritis from Lead Poisoning. E. Tedeschi.—p. 49.
*Influence of Glucose on Bacteria. D. Franceschelli.—p. 52.
*Chronic Appendicitis in Adolescents. O. Cignozzi.—p. 55.
Source of Error in Three-Glass Test of Urine: The Cystitis-Phosphaturia Syndrome. G. Tomasinelli.—p. 58.
Forensic Import of Contusion of Bed of Kidney. E. Aievoli.—p. 60.

Sciatic Neuritis from Lead Poisoning.—The first of Tedeschi's four cases was in a type-setter of 40 with a history of lead colics. The right sciatic nerve finally developed a toxic neuritis, involving the tibialis, the features of the case testifying to a radicular origin. The painful paresthesia during micturition and other sensory disturbances seemed to point to the second sacral root. The man changed to another trade, and the symptoms gradually subsided until, in a few months, nothing was left of the neuritis but a vague ache and slight hypotrophy. The second patient, a house painter, presented the same clinical picture of neuritis of the right sciatic nerve, with the additional feature that rapid bending the head forward caused pain in the right lumbosacral portion of the spine. The two other cases were superposable on the others, all affecting the right leg, with more or less impairment of electric reactions, motor and sensory functioning, and trophism. The textbooks say that toxic neuritis is usually bilateral, and that the arms are the predominant site.

Influence of Sugar on Infections.—The virulence of streptococci seemed to be enhanced when phlorizin diabetes was induced in rabbits. Staphylococci did not seem to be affected, and no effect was apparent from sugar fed in large amounts or injected in the animals.

Stunting of Growth by Chronic Appendicitis.—The assumption that the chronic appendicitis was responsible for the dystrophia and infantilism of several adolescents, of whom illustrations are given, was confirmed by the rapid development to the normal standard after appendicectomy.

Rivista di Clinica Pediatrica, Florence

October, 1921, **19**, No. 10

*Aneurysm in Child's Aorta. M. Pincherle and Dalla Volta.—p. 577.
*Schick Reaction in Nurslings. M. Flamini.—p. 621.

Aortitis in a Child.—In connection with a case in a boy of 7, with two aneurysms in the arch of the aorta, Pincherle and Dalla Volta review the bibliography on aortitis, atheromasia and ectasia of the aorta in children. They have thus compiled over 100 cases. Among the more common causes recorded are syphilis, rheumatism, various acute or chronic infections, toxic action (principally alcohol) or endotoxins (especially from kidney disease). In the case personally observed, the child had chronic nephritis.

The Schick Reaction in Young Infants.—Flamini obtained a positive reaction in 17 per cent. of 250 infants 3 or 4 months old; in 29 per cent. of 135 from 4 to 8 months old; in 36 per cent. of 30 from 8 to 12 months; in 46 per cent. of 45 from 1 to 2 years old, and in 50 per cent. of 80 children between 2 and 3. The test applied to the 190 nursing women elicited a positive response in 32 per cent. Among the 60 thus giving a positive reaction, only 4 of the infants they were suckling displayed a positive reaction, while 38 of the infants were positive among the 130 suckled by negative women. That is, 56 nursing infants had a positive reaction, showing the presence of diphtheria antitoxin in their blood, while their mothers did not have it. Flamini argues that this shows that the infants have developed the antitoxin on their own account. Some substance formed in their blood seems to behave like an antitoxin for diphtheria; it may be some product of the glands or tissues. Its production may gradually cease as the infant grows older.

Archivos Latino-Amer. de Pediatría, Buenos Aires

November-December, 1921, **15**, No. 6

*Acute Phlebitis in Children. L. Morquio.—p. 538.
*Epidemic Encephalitis and Chorea. G. Aráoz Alfaro.—p. 546.
*Disturbance in Typhoid Immunization. J. Bonaba.—p. 557.
*Treatment of Pott's Disease. J. M. Jorge.—p. 573.
Masked Tuberculosis in Children. R. Cibils Aguirre.—p. 581.
Feeding Infants with Congenital Debility. Américo Mola.—p. 612.
Peritonitis From Inherited Syphilis. Acuña and Casaubon.—p. 631.
Progressive Lipodystrophia. A. Carrau.—p. 645.
Active Immunization Against Diphtheria. P. de Elizalde.—p. 650.
Ossification in Children. V. Escardó y Anaya.—p. 662. Conc'n.
Medical Treatment of Hydrocephalus. J. C. Navarro, J. P. Garrahan and E. A. Beretervide.—p. 668.

Acute Phlebitis in Children.—Morquio's analysis of the literature confirms the exceptional character of acute phlebitis in the limbs in children. He has never encountered it himself but twice. In both cases the phlebitis of the left femoral vein had followed typhoid, in girls of 9 and 10. The interval had been six weeks in one case, and the typhoid nature of the sickness had not been recognized. The symptoms had been those of scarlet fever. But the phlebitis was unmistakably a manifestation of typhoid septicemia. The phlebitis ran a two or four months' course to final recovery in the two cases.

Chorea.—Aráoz Alfaro argues that the facts observed in epidemic encephalitis have demonstrated that ordinary chorea in the majority of cases is a mild encephalitis, localized mainly in the striate body, and due to various infectious agents acting on an unstable nervous system, constitutionally or temporarily substandard. The infectious agent most commonly involved is the one that is responsible for acute articular rheumatism. Other infectious and toxic agents are also liable to induce it in the predisposed, and intense emotional stress may be the occasional cause.

Recurrence of Typhoid.—Bonaba reports two cases in which children of 10 and 13 had recovered from a long attack of typhoid, and developed typhoid anew after a few days of good health, the second attack a typical typhoid. In four other children the typhoid relapsed forty-five or fifty days after apparently complete recovery. The relapse manifested itself only as a slight but prolonged fever, the spleen enlarging, with positive seroreaction and blood cultures. One of these children had a skin disease, others a tuberculous focus, or acute rheumatismal joint process, and he is inclined to think that these secondary infections modified the natural typhoid immunization process. In another child of 12 a tuberculous process in the sternum and clavicle and adjacent glands seemed to annul the effect of vaccination against typhoid, so that the girl developed severe typhoid although supposedly protected by the recent complete vaccination. This is the only instance of failure of vaccination to protect in his experience, and it seems rational to ascribe it to the preexisting tuberculosis. There was no agglutination after the vaccination in this case. The typhoid fever speeded up the previously latent tuberculosis, with promptly fatal meningeal involvement.

Pott's Disease.—Jorge urges a campaign in favor of horizontal reclining on a hard bed as the routine treatment of progressive tuberculosis of vertebrae. By this means suppurative and nervous complications are warded off, and the spine does not develop a gibbus.

Semana Médica, Buenos Aires

Dec. 1, 1921, **28**, No. 48

*Cancer of Appendix. J. R. Ríos.—p. 739.
*Retrograde Esophagoscopy. J. M. Jorge.—p. 753.
*Wounds of the Eyes in General Practice. R. Argañaraz.—p. 756.

Primary Cancer of the Appendix.—Ríos' patient was a young woman and the appendix was removed under the diagnosis of chronic recurring appendicitis, but it proved to be the seat of primary malignant disease. He thinks that this is more common than generally recognized, and that this is a further argument for appendicectomy whenever the abdomen is opened up for any purpose. In all the cases published, the age in the majority was between 20 and 30; his patient was 21. Cases even younger than this are known; he cites 4 cases at 5, 6, 8 and 9 years of age, and 4 at 15 or 16; one at 52; one at 70 and Rogg's case at 80. Women formed 60 or 70 per cent. of the total. Several of the patients were tuberculous. In 83 per cent. the diagnosis had been appendicitis; in 7 per cent. the cancer in the appendix was a necropsy surprise, and in 10 per cent. a surprise in the course of a laparotomy for other causes.

Retrograde Esophagoscopy.—Jorge was unable to locate the plate of false teeth in the esophagus by direct inspection in these two cases, but he accomplished this and safely removed the foreign body through an opening in the stomach. The procedure was facilitated by passing a sound through the mouth into the stomach. This located the cardia at once, and acted as a guide for the esophagoscope.

Penetrating Wound of the Eye.—The practitioner consulted in a case of this kind may have to decide whether there is a foreign body in the eye, as the fate of the eye may depend on this first examination. The main thing is to prevent infection. Alcohol, ether or iodin should not be used around the eyes. Argañaraz advises instilling 2 or 3 drops of a 1 per cent. solution of cocain, and then copiously flushing the conjunctival sacs with saline. If the wound is in the cornea, he advises introducing a little of a 1 : 1,000 mercuric chlorid salve, applying a cotton bandage, and referring the patient to the nearest eye clinic. But if there is hernia of the iris, this should be reduced first. If it cannot be reduced, he advises to snip off the herniated portion, level with the cornea, with fine scissors. This simple intervention allows the corneal wound to heal naturally. He expatiates in conclusion on the great benefit from parenteral injection of milk in every grave suppurative process in the eye. His practice is a daily intragluteal injection of 5 c.c. of fresh milk, heated to 90 C. for three minutes only.

Siglo Médico, Madrid

Jan. 7, 1922, **69**, No. 3552

Germ Carriers and Contaminated Waters. C. M. Cortezo.—p. 1.
Treatment of Pulmonary Tuberculosis by Natural Agents. Ramón Villegas.—p. 3. Cont'd.
*Operative Treatment of Pulmonary Tuberculosis. Sauerbruch.—p. 5.
The Kidneys and Glycosurias. J. Caballero y Fernández.—p. 8. Cont'd.
Campaign for Public Health in Spain. L. Muñoz Antuñano.—p. 11. Cont'n.

Operative Treatment of Pulmonary Tuberculosis.—Sauerbruch extols the fine results that can be realized by extensive resection of ribs to mobilize the wall of the chest in cases of chronic unilateral tuberculosis, with cavities, in which conditions prevent artificial pneumothorax. Improvement follows in a large proportion of the cases, and it amounts to a permanent cure in a third of them. A combination of resection of ribs, above or below, plus an artificial pneumothorax over the rest is often effectual. Jacobæus advocates severing the adhesions with the galvanic cautery under direct thoracoscopy, but Sauerbruch prefers to this the combination of rib resection and artificial pneumothorax, as answering the same purpose with less danger. The adhesions may contain vessels and bronchial twigs, and hemorrhage or infection might be entailed by severing them. Extrapleural tamponing may aid, the lung gradually shriveling and retracting away from the tampon. He does not approve of the use of a filling. He regards direct opening up of a cavity with rigid walls as justified, and advises not to reserve it for the last resource. He has operated on the lung in 481 cases, and 40 per cent. were benefited. They were all rebellious to years of climatic-dietetic treatment. The most brilliant successes, he adds, were in persons who continued or resumed their self-support.

Jan. 14, 1922, **69**, No. 3553

Treatment of Acute Malaria. Sadi de Buen.—p. 29.
Biologic and Curative Action of Secondary Rays Obtained by Silver Ionophoresis. F. Ghilarducci.—p. 34.

Jan. 21, 1922, **69**, No. 3554

Diaphragmatic Hernia; Two Cases. J. Codina Castellví.—p. 57. Conc'n No. 3555.—p. 89.
*Protein Therapy for Infants. J. Díaz Rodríguez.—p. 60.

Protein Therapy in Gastro-Enteritis in Infants.—In the case described, the long chronic enteritis had resisted the whole arsenal of ordinary measures. The bottle-fed child, 20 months old, had had digestive disturbances from the second month of age. It had been given breast milk for three months, and goat's milk after this. Diaz gave an injection of 0.5 c.c. of goat's milk in the abdominal wall; 1 c.c. was injected three days later, then 2 c.c., and then 4 c.c.—all at three-day intervals. There was no febrile reaction, but the whole condition rapidly improved until the child seemed normal and lively. The retrospective diagnosis was anaphylaxis to the special milk that had been used, and the anti-anaphylactic injection cured this.

Deutsches Archiv für klinische Medizin, Leipzig

Jan. 24, 1922, **138**, No. 3-4

*Infantilism. Borchardt.—p. 129.
*Roentgen Examination of Heart Functioning. F. M. Groedel.—p. 144.
*Nonprotein Nitrogen in Blood and Tissues. I. Barát and G. Hetényi.—p. 154.
*Reflux of Pancreatic Juice into Stomach. G. Deusch and H. Rürup.—p. 165.
*The Blood in Exophthalmic Goiter. G. Deusch.—p. 175.
*The Humidity and Insensible Perspiration. O. Moog.—p. 181.
*Production of Urea by Diseased Liver. G. Hetényi.—p. 193.
*Origin of Cheyne-Stokes Respiration. F. Herzog.—p. 200.
Blood Reaction with Kidney Disease. H. Straub and K. Meier.—p. 208.
*Ether-Treated Tubercle Bacilli. W. Fornet.—p. 229.
Acute Interstitial Myocarditis. A. Hafner.—p. 236.
Diagnostic Import of Catalase Content of Blood. E. Segali and M. Händel.—p. 243.

Infantilism.—Borchardt explains the various causes for the arrest of development which entails that certain physical and mental properties of the growing individual correspond to an age younger than the age actually attained. The cause may be inherited, or it may be some injury of the germinative tissue, or some upset in the endocrine system, or some external influence, infectious, toxic or alimentary. Some of these injurious influences seem to exert their action by inducing a lack of lecithin, "that important and indispensable stimulus for growth." Reduction of the amount of total nourishment does not entail infantilism in animals, but depriving them of certain "body bricks"—the tryptophan and lysin of the protein molecule—arrests the growth. Only when the lacking lysin is restored to the food does growth proceed. Syphilis, tuberculosis, tetanus and diphtheria toxins all seem to have the property of binding lecithin, and the lecithin is thus withdrawn from its physiologic purposes. Leprosy, malaria, pellagra and echinococcosis probably have this same lecithin-depriving action, as also certain nutritional disturbances and intoxications. Alcohol is preeminently a toxin for lipoids. He saw a boy of 5 who had actual delirium tremens, his father letting the boy drink with him. The child did not look older than the age of 3.

Roentgen Examination of Heart Functioning.—Groedel concludes this analysis of what we can learn from roentgen examination of the heart with the statement that the darker shadow in the hilus region of the lung—indicating stagnation in the circulation—is the only early sign of failing compensation in the heart action.

Nonprotein Nitrogen in Blood and Tissues.—The residual nitrogen content of the tissues physiologically is higher than that of the blood.

Reflux of Pancreatic Juice Into the Stomach.—Tests of forty persons demonstrated that trypsin finds its way into the stomach probably regularly, but it is digested by the gastric juice unless gastric secretion is much below par. Hence no conclusions as to pancreas secretion can be drawn from the stomach content unless it is known that the secretion of hydrochloric acid is below 0.5 per thousand.

The Blood in Exophthalmic Goiter.—Deusch tabulates the blood viscosimeter and the serum refractometer findings in eleven persons with exophthalmic goiter. The refractometer findings show the state of the protein metabolism at the moment. They thus give a general insight into the progress upward or downward in a given case.

Influence of Humidity on Insensible Perspiration.—Moog was surprised to find in tests of five persons that the insensible perspiration continued the same regardless of the greater or less humidity of the air. This could not occur if the insensible perspiration were merely an ordinary evaporation process. If this were the case, the amount of water cast off through the skin would diminish with increasing humidity, while the reverse of this was the rule in his tests.

Urea-Forming Property of the Liver.—Hetényi reports that with pathologic conditions in the liver, the synthesis of urea from ingested ammonium salts takes twice or three times as long as usual.

Origin of Cheyne-Stokes Respiration.—Herzog declares that the varying carbon dioxid content is a consequence, not the cause of cyclic breathing. He ascribes this to a periodical disturbance in the regulation of the respiration by the vagus—a periodical variation in the *selbststeuerung*. He found characteristic changes in the relative duration of the inspiration and expiration phases in nine cases of Cheyne-Stokes respiration he has been studying.

Improved Tuberculin for Diagnostic Purposes.—Fornet relates that ether fumes bubbling through a culture of tubercle bacilli at 40 C. gradually dissolve away the waxy cover of the bacilli. The surface of the fluid becomes coated with a creamlike substance. The bacilli thus freed from their waxy shell grow more luxuriantly and rapidly; they cast off their products profusely, and they become susceptible to influences against which they were previously protected. They thus are much more effectual when used for diagnostic purposes than ordinary tuberculin. Besredka accomplishes much the same purpose by cultivating the bacilli on an egg yolk and lecithin medium; this also tends to dissolve the waxy coat of the bacilli. (W. Fornet, now of Saarbrücken, was chief of the state prophylaxis of typhoid in Germany at one time.)

Deutsche medizinische Wochenschrift, Berlín

Jan. 19, 1922, **48**, No. 3

Treatment of Malignant Growths. Sauerbruch.—p. 83. Cont'd.
The Effect of Laryngectomy on the Speech. P. Sudeck.—p. 85.
Significance of Iso-Agglutination for Direct Blood Transfusion; Also the Effect of Drugs, Anesthesia and Roentgen Irradiation on Iso-Agglutinins. R. Eden.—p. 85.
Modern Prophylaxis Against Diphtheria. H. Opitz.—p. 87.
Chemical Composition of Floccules Formed in Serologic Reactions in Syphilis. E. Epstein and F. Paul.—p. 89.
*Reinfusion of Own Blood in Tubal Abortion. B. Töpler.—p. 92.
Generalized Emphysema. J. Duken.—p. 93.
Cholesterin Content of Kupffer's Stellate Cells. Stöcker.—p. 93.
Case of Myelitis Gripposa Acuta. S. S. Semenow.—p. 94.
Treatment of Chronic Gastric Ulcer. R. Kovjanic.—p. 94.
Unreliable Clinical Thermometers. K. Scheel.—p. 95.
Treatment of Burns. Tunger.—p. 95.
Modified Type of Saccharometer. Lassar-Cohn.—p. 95.
Present Status of Clinical Psychiatry. E. Kretschmer.—p. 95.
Inflammations of Female Genital Organs. W. Liepmann.—p. 96.

Reinfusion of Own Blood with Tubal Abortions.—Töpler reports twenty-four cases and expatiates on the smooth recovery after the reinfusion although the anemia was extreme, the pulse scarcely perceptible, and the dyspnea and collapse profound. In two of the cases the ovum was in the abdominal cavity; the others were tubal abortions. The blood was scooped up out of the abdomen, clots and all, and strained through eight layers of mull into an Erlenmeyer jar, where it was diluted with saline and kept at body temperature in the water bath until it could flow through a cannula into the median vein. He is convinced that some of these women could not thus have been tided past the danger point with saline alone.

Jahrbuch für Kinderheilkunde, Berlin

January, 1922, **97**, No. 1-2

Pathology of Infectious Toxicosis in Infants. F. Göppert.—p. 1.
*Infiltration in Myocardium in Lymphatism. H. Rieder.—p. 9.
*Food and Gastric Secretion. P. Hoffmann and S. Rosenbaum.—p. 46.
*Leukolysins. E. Stransky and E. Schiller.—p. 55.
Bilateral Athetosis in Children. E. Thomas.—p. 61.
*Concentrated Flour Gruel for Infants. E. Rachmilewitsch.—p. 78.
*Alkalinity of Blood in Infants. E. Krasemann.—p. 85.
*Butter-Flour Gruel and Butter-Flour Milk. H. Flesch and F. v. Torday.—p. 103.

Infiltration in Myocardium in Children Dying Suddenly.—In 7 of 9 cases of sudden death in young children, Rieder found the same infiltration of the myocardium with lymphocytes and round cells that Riesenfeld has recently reported in 5 cases of primary idiopathic hypertrophy of the heart in infants. These children were 9 to 18 months old and had been apparently healthy all their lives until dyspnea, cyanosis, vomiting and convulsions suddenly developed and soon proved fatal. No other pathologic changes were found except the more or less pronounced lymphatism. In 3 of Rieder's 9 cases, a fall was the direct cause of death, but the lymphatism, the excentric hypertrophy of the heart, and the microscopic findings were the same as in the others. In the others, death occurred so rapidly that no diagnosis had been made. In 4 of the children the thyroid was enlarged; several had eczema, and all had a history of some infectious disease. The round-cell infiltration seemed to be of inflammatory origin, not a mere manifestation of the general lymphatism. This is ample to explain the excentric hypertrophy of the heart and the sudden collapse of the heart in some of the cases. In 9 control cases of death from ordinary causes in children with lymphatism, the heart was hypertrophied but there was no round-cell infiltration. The sudden death in Rieder's and Riesenfeld's cases recall Feer's compilation of 21 cases of "eczema death." Karrer has published 2 cases of this kind with round-cell infiltration in the myocardium, and in one of them he found staphylococci in various organs. This throws light on cases of sudden "eczema death." The eczema and the myocarditis are evidently connected, and the lymphatic status is responsible for the gravity of the disturbances from the other causes.

Gastric Secretion in Relation to the Food.—In this fourth article on the pathogenesis of acute alimentary nutritive disturbances in infants, Hoffmann and Rosenbaum report that in all their tests albumin stimulated the secretion of gastric juice when it was in a higher concentration than in human milk. Otherwise not; and fats and carbohydrates were likewise inert in this respect. Peptonized albumin was more active than plain albumin, while trypsin-predigested albumin was less active.

Digestion Leukopenia in Infants.—Stransky and Schiller present arguments against the assumption of a production of leukolysins as the cause of digestion leukopenia. Whatever the cause may be, it is not this.

Artificial Feeding for Infants.—Rachmilewitsch describes experiences with what he calls a concentrated fluid flour decoction. Flesch and Torday describe their results with the butter-flour gruel and the butter-flour-full milk mixture.

Alkalinity of the Blood in Infants.—Krasemann endorses the reliability of Rohonyi's simple test for acidosis in the blood. By shaking up the blood in the air, the carbon dioxid content comes to equal that in the air, and by removing the albumin with alcohol, the proportion of sodium bicarbonate in the blood can then be estimated with alizarin red. Examining the blood with a given carbon dioxid tension, the amount of sodium bicarbonate is an index of the amount and concentration of the acids in the blood. Acidosis seems to be the rule in very young infants, the more pronounced the younger the infant, as also in the clinical pictures of toxicoses.

Mitteil. a. d. Grenzgeb. d. Med. u. Chir. Jena

1922, **34**, No. 4

*Consequences of Hyperthymization. R. Demel.—p. 437.
*Meiostagmin Test for Cancer. W. Schemensky.—p. 451.
The Appendicitis Question. Rheindorf.—p. 463.
*Dilatation of Esophagus. H. Meyer.—p. 484.
*Sugar Content of Blood in Surgical Affections. E. Seitz.—p. 514.
Diverticulum in Duodenum. H. Holzweissig.—p. 527.
*Foreign Cells in Human Goiter. L. Merk.—p. 554.

Experimental Research on the Thymus.—No influence on the skeleton or organs of rats could be detected from feeding thymus tissue. But implantation of the thymus from normal rats into others of the same litter was followed by more rapid growth of the bones in length and in maturity. The grafted rats seemed to be livelier and stouter. The influence of the thymus on the growth of the skeleton was apparent also when the thymus was removed from other rats. No functional influence on the sexual glands, suprarenals or pituitary from the hyperthymization could be detected.

The Meiostagmin Reaction in Cancer.—Schemensky examined the urine from twenty-four certain cases of cancer and nineteen dubious cases. The findings confirm that the stalagmometer quotient of the urine is a reliable index of the presence or absence of malignant disease, in the overwhelming majority of cases. The high stalagmometer findings are due probably to the elimination of protein waste in the cancer cases. His tabulations show the details and suggest that the course of the case will probably clear up the few contradictory findings.

Dilation of the Esophagus and Spasm of the Cardia.—Meyer found an ulcer in an hour-glass stomach with spasm of the cardia, and nothing but the ulcer to explain the spasm. In another case an ulcer in the esophagus was responsible for the spasm at the cardia. Benign spasm of the cardia may simulate cancer, and necropsy first reveal the blunder. In this second case, pulmonary tuberculosis may have been responsible for the cardiospasm. Lead poisoning might likewise explain it as an autonomic neurosis. Lead has a remarkable affinity for the vagus nerve. Cardiospasm is rare in children, but Meyer reports a case in a child of 7. The opening in the diaphragm was unusually large, and this was sutured. The cardia became more permeable thereafter, but the esophagus is still abnormally large. A number of other cases of various origins are described. Resection of the cardia was done in five cases, once from above and four times from below the diaphragm. With intermittent spasm and other disturbance from vagotonia, hypnosis, atropin and lavage of the stomach might be tried. With permanent spasm, mechanical distention is required, or a cardioplastic operation. The spasm returned recently in two such cases after operative treatment. In the terminal stage, dysphagia atonica, the esophagus sags below the cardia, so the obstruction here may be mechanical rather than spastic.

The Blood Sugar in Surgical Affections.—Seitz here discusses tuberculosis, cancer, salpingitis, gastric ulcer and gallbladder and thyroid disease in relation to the outcome of alimentary hyperglycemia tests. In staphylococcus, streptococcus and tubercle bacilli infections the predisposition to hyperglycemia seems much enhanced. In fifty-two cases of hyperthyroidism, test ingestion of sugar or injection of suprarenal extract confirmed the irritability of the sympathetic nervous system in the graver conditions. The return to a normal response after thyroidectomy is another argument in favor of the utility of operative reduction of the thyroid.

Foreign Cell Formations in Human Goiters.—Merk calls attention to some microscopic bodies he has found in certain thyroids. They seem to be spores or rusty scales or ovum-like bodies. They show a bright yellow tint in certain lights, and he is inclined to regard them as of protozoon origin.

Medizinische Klinik, Berlin

Jan. 15, 1922, **18**, No. 3

- *Gonorrhea a Chronic Disease. A. Buschke and E. Langer.—p. 65.
- Traumatic Neuroses. P. Horn.—p. 70.
- Arsphenamin plus Mercuric Chlorid in Syphilis. E. Schmidt.—p. 74.
- *Recurrent Paralysis with Mitral Defect. Frida Klein.—p. 76.
- *Amyostatic Encephalitis. H. Vollmer.—p. 78.
- *Skin Manifestations of Uratic Diathesis. E. Pulay.—p. 79.
- Physical Measures in Heart Disease. E. Tobias.—p. 80.

Chronic Gonorrhea.—The importance of gonorrhea as a general disease, the foci usually inaccessible to direct medication, impresses the necessity for perfecting specific vaccine therapy as apparently the only way to root out the disease in many cases.

Recurrent Paralysis.—The left recurrent paralysis in the young man had developed with a mitral defect of rheumatismal origin.

Amyostatic Encephalitis.—The case in the 2 year old child is distinguished by certain unusual motor and reflex disturbances.

The Skin Manifestations of Gout.—This is Pulay's fifteenth instalment of his series on diseases of metabolism in connection with skin disease. His heading is "The Vagotonic Manifestations in the Skin as the Expression of the Uratic Diathesis." Besides urticaria, angioneurotic edema and pruritus, he includes chronic recurring eczema in this group. The high uric acid content of the blood is a feature of this form of eczema, although the content in the urine is normal or below. In one child with the skin lesions characteristic of the exudative diathesis, the hyperuricacidemia was pronounced. The share of vagotonia and a gouty tendency in the clinical picture was confirmed by the benefit from measures to combat the uratic diathesis, but above all by the cure under treatment of the pruritus—which is the inaugural symptom in all this group—and atropin is effectual for this. Abnormal metabolic processes, retention of uric acid, are the primal cause, acting on an unstable vasomotor system. It must be borne in mind further that the endocrine glands are under the control of the vegetative nervous system. The uric acid metabolism in cases with excessive or deficient endocrine functioning should be studied, and likewise the behavior of the uric acid metabolism after removal of different endocrine glands.

Münchener medizinische Wochenschrift, Munich

Jan. 13, 1922, **69**, No. 2

- Orthopedic Correction of Diminished Muscular Tonicity and Deep Anesthesia in Tabes Patients. H. von Baeyer.—p. 37.
- Character and Origin of Pus Cells in Gonorrheal Conjunctivitis and Urethritis. L. Kraus.—p. 38.
- Treatment of Tumors with Arsphenamin. P. Matzdorff.—p. 42.
- Experiences with Neo-Silver-Arsphenamin. F. Zimmern.—p. 43.
- Endolumbar Injections of Arsphenamin in Syphilis. T. Benedek.—p. 44.
- Butter-Flour Mixture in Infant Feeding. H. Schlossmann.—p. 46.
- *Incidence of Goiter in Schoolchildren. J. Kraeuter.—p. 47.
- External and Internal Migration of Ovum. Hanns Baur.—p. 48.
- Domestic Substitutes for Senega and Ipecacuanha. Grimme.—p. 50.
- Availability for the General Practitioner of the Flocculation Reaction in the Diagnosis of Syphilis. R. Weiss.—p. 51.
- Painless Labor. E. Zweifel.—p. 52.
- Arteriotomy. T. Gluck.—p. 53.
- Pathologic Anatomy and Nomenclature of Pulmonary Tuberculosis. F. Marchand.—p. 55. Begun in No. 1, p. 1.
- Need of Rubber Gloves in Bandaging Wounds. A. Krecke.—p. 58.

Incidence of Goiter in Schoolchildren.—Kraeuter examined in Munich 1,840 schoolgirls ranging in age from 3 to 19; 56 per cent., or 973, presented goiters of various sizes—mostly diffuse and parenchymatous. The age group 14-15 was most affected (doubtless associated with puberty), there being 339 goiters (20 good sized) in this group, a percentage of 62.5 per cent. Hyperthyroidism was manifest in 1.5 per cent. of the children examined. Operation had been performed on 1.2 per cent., and there were recurrences in 0.7 per cent. Only 1.6 per cent. of those affected were receiving treatment. Compression symptoms were manifest in 0.3 per cent. Kraeuter refers to Marine's successful trials with iodin treatment of 1,000 schoolgirls in Cleveland, Ohio, in 1917, and to the good results secured with iodin treatment by Klinger in 1919 in endemic sections of Switzerland. She would like to see a systematic treatment of schoolgirls in Munich instituted and recommends Klinger's small dosage. Klinger reported, in the case of 1,000 pupils from 6 to 14 years old who received treatment for fifteen months, that most of the goiters disappeared and the few that remained became much smaller. (Marine's experiences were summarized in The Journal, Dec. 1, 1917, p. 1911; Klinger's, Feb. 26, 1921, p. 621.)

Therapeutische Halbmonatshefte, Berlin

Oct. 15, 1921, **35**, No. 20

- Circulatory Weakness in Acute Infectious Diseases. Bingold.—p. 617.
- Experimental Bases for Systematic Muscular Exercise in Treatment of Diabetes. M. Bürger.—p. 622. Conc'n No. 21. p. 657.
- Mixtures of Analgesics. E. Starkenstein.—p. 629.

Wiener Archiv für innere Medizin, Vienna

Nov. 15, 1921, **3**, No. 1-2

- *Nephritis from Chilling. F. Gaisböck.—p. 1.
- *Technic for Percussion. A. Lehndorff.—p. 45.
- Diagnosis of Internal Disease by Galvanopalpation of the Skin. M. Kahane.—p. 67.
- Value of Coin Test in Clinical Diagnosis. V. Kollert.—p. 111.
- *Pathogenesis of Essential Hypertonia. H. Kahler.—p. 125.
- *Research on Jaundice. R. Strisower.—p. 153.
- *Polyglandular Insufficiency. A. Edelmann and P. Saxl.—p. 227.
- Paracardiac Areas of Dulness. G. Felsenreich.—p. 235.
- Determination and Interpretation of Diastolic Pressure. S. Peller.—p. 249.
- Cardiac Asthma in Relation to Pulmonary Edema. L. Hess.—p. 263.
- Elimination of Iron in Urine. F. Kisch.—p. 283.
- Sweat Secretion in Man. S. Peller and R. Strisower.—p. 297.
- Differential Diagnosis of Uremic Conditions. H. Beth.—p. 309.
- *Low Blood Pressure and the Kidneys. A. Müller-Deham.—p. 323.
- Quinin in Treatment of Heart and Vessels. R. Singer and H. Winterberg.—p. 329.
- Acropachia. K. Paschkis.—p. 365.

Nephritis from Chilling.—Gaisböck in experimenting on rabbits found that acute inflammation of the kidney could be induced by direct chilling of the organ. Chilling to 9 or 10 C. induced nephritis of the glomerular-tubular type, while with chilling to 3 or 4 C. there were degenerative changes as well as inflammatory. The changes, however, seemed to be able to heal in time. Severing the splanchnic nerve or decapsulation beforehand did not seem to modify conditions, except that the latter was followed by proliferation of connective tissue, a traumatic nephritis. Inoculation with streptococci at the time of the chilling entailed an acute interstitial nephritis with severe changes in the glomeruli and entire parenchyma.

Improved Percussion.—Lehndorff arrests the spread sideways of the vibration from the percussion stroke, as a means of magnifying the actual findings. Any one can convince himself of the advantages of this by percussing in the center of a large metal ring, fastened to a long handle, and placed lightly on the wall of the chest; then repeating the percussion with the ring pressed down hard into the skin. This arrests the lateral vibrations, without modifying those inside the ring, and they are heard stronger and clearer than before.

Pathogenesis of High Blood Pressure.—Kahler tabulates the findings in 135 cases of essential hypertonia, and explains the various factors involved. In one group of cases, lumbar puncture reduced the blood pressure permanently. This can be due only to the fact that in this group the high blood pressure was the result of some primary toxic or circulating irritation of the vasomotor center, and that this irritation was relieved by the lumbar puncture.

The Duodenal Juice in Jaundice.—Strisower's summary of ninety-four cases of jaundice, with chemical analysis of the duodenal juice, demonstrates among other points that the proportion of bile pigment in the duodenal juice and qualitative tests for albumin in the same, are important from both the diagnostic and prognostic standpoints.

Cachexia with Glandular Insufficiency.—Three cases are described in which there was polyglandular insufficiency of the glands with an internal and with an external secretion. The patients were two women and one man, all in the fifties, and the course of the disease to the fatal outcome ranged from twelve weeks to eight years. Atrophy of the tongue, anacidity of the gastric juice, moderate diarrhea, fat stools and osteoporosis in 2 cases, sclerodermia in 2 were the most striking manifestations. The thyroid was very small, the pancreas atrophied in 2, and, in all, the internal organs were small and atrophied.

The Kidney Functioning with Low Blood Pressure.—Deham's figures show great disturbance in elimination of water, as well as in the concentrating power of the kidneys, in seven cases of pathologically low blood pressure with nephritis, Addison's disease, gastric cancer or duodenal ulcer.

Wiener klinische Wochenschrift, Vienna

Jan. 5, 1922, **35**, No. 1

*Treatment of Tetania Parathyreopriva. A. Eiselsberg.—p. 1.
Rejuvenation After Prostatectomy Not a "Steinach Manifestation." V. Blum.—p. 2.
*Conduction of Sound in the Nose. L. Réthi.—p. 4.
*Sugar Content of Spinal Fluid in Disease. H. Kahler.—p. 8.
Treatment of Varicose Veins with Mercuric Chlorid. Fischer.—p. 11.
Fluctuations of Complement in Guinea-Pigs. W. Loew.—p. 12.
Atypical Case of Typhoid. H. Zweig.—p. 13.
Injections of Iodin in Parenchymatous Keratitis and in Hereditary Syphilis. A. M. Rosenstein.—p. 14.

Treatment of Parathyreoprival Tetany.—Eiselsberg states that of 2,588 strumectomies performed during the last twenty years, he observed 6 fatal cases due to tetany. In 4 cases more or less extensive pneumonia was found at necropsy. Three of the operations were necessary owing to relapses. General anesthesia was employed in only one case. In one case spontaneous tetany had occurred before the operation; immediately after the operation the symptoms became exceedingly severe, and death resulted in four hours. In 2 of these 4 cases, transplantation of parathyroids had been done. Besides the 6 fatal cases of tetany, there were 6 other severe cases. In a woman of 32 the tetany became chronic; a cataract developed; transplantation of thyroid and later of parathyroids was done, which brought about improvement. Later, during the cold season, paroxysms of tetany were frequent, whereby thyroid treatment helped. In one patient the eating of bread precipitated the attack of tetany. In one woman, bilateral cataract developed eleven years after the operation. A similar case of formation of bilateral cataract occurred in a Vienna hospital after operation. In addition there were a number of cases of mild tetany. Symptoms resulting from removal of thyroid are not helped by drugs; only organotherapy is efficacious. On the other hand, symptoms arising after removal of the parathyroids may often be relieved by the use of drugs. Sometimes epilepsy develops from tetany, in which transition the loss of the parathyroids plays a part. (A similar article by Eiselsberg was summarized recently on page 767.)

Conduction of Sound in the Nose.—Réthi reports research on conduction of sound in the nose, and on the effect of the breadth of the nose on the voice in singing.

Changes in the Sugar Content of the Cerebrospinal Fluid in Internal Diseases and Nervous Affections.—Kahler discusses the possible causes of the increase of sugar in the cerebrospinal fluid in most inflammations or overstimulated conditions of the brain. It may be due either to an abnormal permeability of the choroid plexus for sugar or an abnormally copious secretion of glucose by the plexus cells. Both conceptions are possible in view of Blumenthal's finding that the cerebrospinal fluid is formed by transudation and by secretion. The fact that Yoshimura demonstrated the presence of glycogen in the plexus cells, which he regarded as the forerunner of the sugar in the spinal fluid, lends weight to the secretion hypothesis. On the other hand, we cannot be sure but that abnormal metabolic processes in the brain substance itself may lead to an increase in the sugar content of the spinal fluid.

Zeitschrift für Kinderheilkunde, Berlin

Jan. 31, 1922, **31**, No. 5-6

*Tryptophan Requirement and Supply in Children. T. Ide.—p. 257.
*Influence of Saline Infusion on Infants. K. Scheer.—p. 290.
Infection with Syphilis Intra Partum. H. Rietschel.—p. 293.
*Syntropia of Morbid Conditions. Luise v. Seht.—p. 298.
*"Toxicosis" and "Intoxication." L. Langstein and H. Langer.—p. 314.
*Acute Nutritional Derangement. H. Langer and E. Mengert.—p. 319.
*Intestinal Bacteria. A. Adam.—p. 331.
*Artificial Feeding of Infants in Institutions. H. Davidsohn.—p. 367.
*Initial Diarrhea in the New-Born. L. Hauschild.—p. 399.
*Inflammation of Dental Germ in Infant. G. Dietrich.—p. 407.

Tryptophan Requirement in Children's Diet.—Ide reports research on the tryptophan content of colostrum, milk and other foods given young children, and calculates the optimal proportion. The work issues from the children's clinic in charge of Pirquet, and the calculations are by Pirquet's diet system.

Subcutaneous Injection of Saline in Infants.—Scheer replies to Stoltenberg's article criticizing his research on the effect of injection of sodium chlorid on the chlorid and nitrogen content of infants' serum.

Association of Morbid Conditions in Children.—Seht here describes the results of further study of what she calls the syntropia of diseases in children, the mutual attraction and relations between different morbid conditions, simultaneously or in sequence. The findings in 1,151 children at the Munich children's clinic showed a pronounced syntropia between cystitis and the hemorrhagic diathesis, as also between endocrine derangement and inherited syphilis, and nephritis and skin disease, especially impetigo. Other syntropias are rachitis with tuberculosis and pneumonia; spasmophilia and pneumonia; goiter with tuberculous syphilis, and nephritis and enuresis with syphilis.

Toxicosis a Vague Term.—Langstein and Langer urge the dropping of the terms toxicosis and intoxication to express a certain pathologic condition in infants. They explain that the only actually characteristic feature of the toxic reaction is the impairment of consciousness, and this is the guide to treatment. They advocate calling it dyspepsia with menacing or manifest coma.

Anticolon Bacillus Serotherapy.—Langer and Mengert's figures speak in favor of a colon bacillus antiserum. They used sheep serum for the purpose, the animals treated with a large number of strains of colon bacilli from severer cases of dyspepsia.

Intestinal Bacteria.—The fifth instalment of the results of Adam's research is devoted to the physiologic import of *Bacillus bifidus* with different diets. The tabulated findings fill sixteen pages.

Artificial Feeding of Young Infants in Institutions.—Davidsohn declares that a distinction must be made between the benign and the malignant form of diarrhea in very young infants. The benign form yields when more nourishment is given, while the malignant form requires abstention from food. This is directly injurious in the benign, the initial diarrhea. Differentiation is based on the general condition; it is only slightly impaired in the benign form, and there is no dark circle around the eyes. Sometimes only the lack of benefit from temporarily increasing the amount of calories in the food will reveal that it is the malignant type. Since the amount of calories has been systematically increased as the one thing needed for this benign initial diarrhea, the mortality in the institution has dropped from 20 to 3 per cent. Hauschild relates that bacteriologic examination in these cases of initial diarrhea always gave negative findings.

Dental Germ Process in Infant.—Dietrich adds another to the fourteen cases he has found on record in which an inflammatory process starting in a dental germ had induced sequester formation. In his case the process was in the lower jaw, and the young infant had erysipelas.

Zeitschrift für Urologie, Leipzig

December, 1921, **15**, No. 12

Transvesical Removal of Diverticulum in Posterior Wall of Bladder. Engelberg.—p. 496.
Pyelography. G. Praetorius.—p. 498. Reply. Barreau.—p. 507.
*Nephropexy for Abnormal Kidneys. S. P. Fedorow.—p. 508.

Nephropexy with Pathologic Kidneys.—Fedorow relates that he cured some patients by suspending the single horseshoe kidney, and thus relieving them of all their previous disturbances from this source. In 2 cases described in detail, the single kidney was movable in various directions. In 3 other cases the kidney had slid down into the right or left iliac fossa, and the disturbances were corrected by nephropexy, as also in 4 cases of movable cystic kidney. Some of the cysts were opened during the operation, which was a further advantage. His experience thus encourages lumbar nephropexy with abnormal and pathologic kidneys, suspending the kidney with a flap from the capsule or the walls of the opened cysts. He always used stout iodized catgut for the suspension.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 24, 1921, **2**, No. 26

*Radicular Athetosis. C. T. van Valkenburg.—p. 3056.
*The Actual Sugar Content of Urine. G. C. Tervaert.—p. 3065.
*Gastric Achylia from Lack of Teeth. A. Willemse.—p. 3069.
Nulliparae Among Women with Uterine Cancer. H. T. Deelman.—p. 3073.
Exfoliating Eczema of the Lips. J. Lankhout.—p. 3075.
Recent Literature on Endocrine Glands. F. J. Stuurman.—p. 3077.

Dec. 31, 1921, **2**, No. 27

Opening a Tonsil Abscess with Finger. W. S. Stekhoven.—p. 3152.
Committee report on Revaccination Findings.—p. 3154.
Two Unusual Abdominal Wounds: Recovery. L. van der Wilk.—p. 3158.

Radicular Athetosis.—Van Valkenburg reports two cases in men of 26 and 42. The tremor is most pronounced in the arm but is evident throughout that whole side of the body. He analyzes these and similar cases, calling attention to what he styles the kinetic anesthesia.

The Sugar Content of the Urine.—Tervaert has been applying parallel tests with Benedict's, Nagasaki's and Sumner's technic, and was impressed with the precision, simplicity and reliability of Sumner's method. He quotes the directions for it from the *Journal of Biologic Chemistry* **47**:5, 1921.

Gastric Achylia.—Willemse has sifted out a group of cases with symptoms of gastric achylia, which he ascribes to lack of enough teeth for proper mastication.

Jan. 7, 1922, **1**, No. 1

Editing the Tijdschrift. G. van Rijnberk.—p. 5.
*Dietetic Treatment of Gastric Ulcer. J. Schrijver.—p. 10.
Primary Cancer of the Vagina. J. H. Engelkens.—p. 27.
How Man Learned to Walk. W. A. Mijsberg.—p. 34.
Nitritoid Crises in Three Serial Cases. C. Goedhart.—p. 42.
Gestation in Uterus Saccatus. J. A. van Dongen.—p. 43.
Atactic Form of Polyneuritis. M. W. Scheltema.—p. 45.
*Medical Folklore. F. M. G. de Feyfer.—p. 48.
*Medicine and the Physician in Old Prints. G. van Rijnberk.—p. 59.
*Steinach Vegetabilis. H. Pinkhof.—p. 71.

Dietetic Treatment of Gastric Ulcer.—Among the epoch-making names in the history of dietetic treatment of gastric ulcer from Cruveilhier to date, Schrijver mentions Lenhartz, Fütterer of Chicago (1902) Moynihan and the Mayos, and Mathieu's warning against ascribing to the ulcer or the diet what is really the result of swallowing of air. Schrijver comments on Boas' latest works on gastric cancer which show a modification of his former views. He emphasizes now that gastric ulcer is essentially a chronic disease. The long intervals of good health, up to twenty and thirty years, have always misled us as to the nature of gastric ulcer. Occult bleeding, Boas almost confesses now, does not have the significance he formerly ascribed to it. Schrijver himself keeps the patient absolutely quiet in bed, and has him sip slowly each hour a glass of pasteurized or boiled milk (250 gm.) each with 2 tablespoonfuls of lime water. If the stomach feels still full, he waits till the next hour. The mouth is rinsed and the tongue wiped several times during the day. The patient can thus take comfortably up to 3 or 3.5 liters of milk a day, and this can be kept up—which is seldom necessary—for two or three weeks or more. Buttermilk can be used if desired, adding two teaspoonfuls of sweet cream to each glass. With a bleeding ulcer, all food has to be withheld, and fluids supplied by the rectal drip. Then a glass of milk with half lime water is allowed every two hours; the next day, the same every hour; the third day, only one third lime water. The milk acts against both bleeding and pain in the stomach. Rarely does the occult bleeding keep up longer than a week. The prompt relief of pain usually is an aid in excluding gallstones and cancer. The flakes of casein are finer with lime water, and this helps to bind more of the acid. The milk does not stimulate the appetite, and hence there is no psychic gastric juice to contend with. The ice bag helps to control bleeding, and scraps of ice in the mouth quench thirst. If the ulcer returns after a year of cautious dieting, he advises calling in the surgeon.

Medical Folklore.—De Feyfer discusses in particular the practice of protecting the sick or the diseased part by strewing it with ashes, flour, clay, etc., or wrapping up with paper or wool, or wearing garments on which special healing properties had been conferred by contact with some holy relic.

The Physician in Old Illustrations.—In this fifth instalment of his long work on medicine in art, van Rijnberk gives eleven reproductions of prints from the seventeenth century, portraying military surgery and artificial limbs.

Steinach Vegetabilis.—Under this heading Pinkhof gives directions from Tobias Katz, 1706, for sexual rejuvenation by food and herbs when the testicles have become insufficient from any cause. He refers in particular to the plant satyrium, or cynosorchis, and the external application of salves, etc.

Acta Chirurgica Scandinavica, Stockholm

Dec. 20, 1921, **54**, No. 3

*Localization in Cerebellum. A. Troell and C. Hesser.—p. 211.
*Fistulas Between Jejunum and Colon. N. Hellström.—p. 282.
Bedcarriage Construction. S. Orell.—p. 312. In English.

Localization in the Cerebellum.—Troell and Hesser report that the effect of partial lesions of different parts of the cerebellum confirms the assumption that the lobulus ansiformis is the center for the extremities on the same side, but not exclusively so. Otherwise their findings all conflict with Bolk's views, as they explain. They give the details of thirty-one experiments and the resulting widely varying symptoms from the cerebellar deficit at different points. (In German).

Peptic Fistula Between Jejunum and Colon.—Hellström states that diarrhea was the first symptom in all the thirty-five cases he has compiled from the records. Then came eructation and fecal vomiting, followed by emaciation and aggravation of the general condition, and, lastly, pains. The periods of intermittence in the diarrhea were short and the diarrhea kept very persistent. In a case personally observed, in a man of 25, the symptoms of gastric ulcer returned five months after posterior retrocolic gastro-enterostomy. Then the stomach was severed close to the pylorus, but no new ulcer was found in the stomach as anticipated. The relief was transient, and the pains returned day and night, with vomiting several times a day, and up to twenty watery stools a day. The laparotomy disclosed the fistula between the jejunal gastro-enterostomy loop and the colon. The numerous diffuse and firm adhesions rendered resection very difficult, but the adherent portions of the stomach, jejunum and colon were removed. The patients were all men in the thirty-five cases he has compiled; unilatefal exclusion of the pylorus had been done in nine cases. (In English.)

Ugeskrift for Læger, Copenhagen

Dec. 22, 1921, **83**, No. 51

*Water Test in Orthostatic Albuminuria. H. C. Gram.—p. 1791.
Bronchial Asthma and Chronic Constipation. Petersen.—p. 1798.

Dec. 29, 1921, **83**, No. 52

Barbital in Vomiting of Pregnancy. H. Jacobæus.—p. 1823.
Special Diets in Hospitals. E. Faber.—p. 1829.

Jan. 5, 1922, **84**, No. 1

Bismuth and Arsenic in Treatment of Syphilis. Ehlers.—p. 4.
Emetin in Treatment of Amebic Dysentery. C. Ditlevsen.—p. 9.

The Water Freshet Test in Orthostatic Albuminuria.—Gram applied Strauss' water drinking test to eight young people with orthostatic albuminuria, the ages ranging from 11 to 24. The test was applied with the subjects constantly reclining, and was repeated on another day with the subjects up and about. A marked difference in the outcome was evident between the pure orthostatic cases and those of nephritis of the orthostatic type. This double test may thus prove useful in differentiating cases in which the orthostatic albuminuria is due to the relics of some nephritis. The details are tabulated for each case. With genuine orthostatic albuminuria, far more urine is voided reclining after the test than when up and about, while the reverse is the rule with nephritis.

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CHRONIC INFECTIOUS ARTHRITIS

STATISTICAL REPORT, WITH END-RESULTS *

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It is generally recognized that the end-results of treatment of patients who suffer from a recognized disease entity are a fair measurement of the success of the management and treatment, and also of the correctness of the ascribed cause and of the character of the morbid process. We present herewith the end-results of the treatment of a series of patients with chronic deforming arthritis.

Seventeen years ago, one of us (F. B.) began a study of chronic deforming arthritis (arthritis deformans, rheumatod arthritis) in connection with a clinical investigation of focal infection.

In 1910 it was decided to make an intensive clinical research of chronic deforming arthritis. For this purpose a group of workers was organized, consisting of clinicians, pathologists and laboratory technicians, all of whom were members of the faculty of Rush Medical College and of the staff of the Presbyterian Hospital. The Otho S. A. Sprague Memorial Institute made a financial contribution and repeated it annually for the support of ten beds in the Presbyterian Hospital for indigent patients with the disease. Reports of some of this work have been presented by a few of the workers.[1]

In the decade of 1905 to 1915, 577 patients who complained of arthritis were admitted to the service of Dr. Frank Billings in the Presbyterian Hospital, Chicago. Approximately 85 per cent. of these were admitted during the period of 1910 to 1914 inclusive. One hundred and sixty-six of these patients were classified as having acute arthritis, and are not included in this report. The remainder, 411 patients, suffered from chronic arthritis and constituted the basis of study and investigation, both clinical and statistical. In 1917, a questionnaire was mailed to all of the 411 patients and 309, or 75.2 per cent., made satisfactory answers. The exigencies due to the World War prevented a thorough study and publication of the results of the treatment of these patients at that time. For two years following the armistice, local conditions were such that it was necessary to delay the report. To obtain still more definite information of the results of the management and treatment, a similar questionnaire was sent again in August, 1921. Satisfactory replies were received from 226, or 54.9 per cent., of the patients.

Seventy of the patients were admitted to the hospital only for diagnosis and opinion, and remained from one to three days. One hundred and thirty-four patients were in the hospital from one to three weeks, a time considered sufficient for a thorough study of the condition and for the removal of recognized primary foci of infection. Two hundred and seven of the patients were under observation and management in the hospital for periods varying from four to six weeks, and in a few instances for as long as one or two years.

The statistical tables presented herewith will be made more understandable by a description of the pathology, the morbid anatomy and the principles that guided the management and treatment.

PATHOLOGY

Primarily and fundamentally, the clinical research was based on the probability that chronic deforming arthritis is, as a rule, infectious in character; that the chief etiologic factor is a focus of infection either single or multiple, usually located in tissues communicating with a mucous surface and sometimes with a cutaneous surface; that secondary etiologic foci are often present in lymph nodes, proximal to primary foci and to infected joints, and that both primary and secondary foci of infection may be the source of bacteremia of varying intensity for a period or for intermittent periods of time.

The result of a bacteremia on the host is dependent on the virulence and also on the number of bacteria in the blood stream. The defensive and offensive powers of the blood and of the other tissues of the host may be sufficient and adequate to overcome the invading pathogenic agents, with no lasting injury to the patient; or the invading micro-organisms may be so virulent or their number may be so enormous in the blood stream that the defensive and offensive forces of the host are overwhelmed with a result that may jeopardize the health or the life of the patient. It must be recognized, too, that the resistance of the

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* Read before the Chicago Society of Internal Medicine, Feb. 27, 1922.

[1] Billings, Frank: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, Arch. Int. Med. **9**: 484 (April) 1912; Chronic Focal Infection as a Causative Factor in Chronic Arthritis, J. A. M. A. **61**: 819 (Sept. 13) 1913; Clinical Aspects and Medical Management of Arthritis Deformans, Illinois M. J. **25**: 11, 1914; Focal Infection, J. A. M. A. **63**: 899 (Sept. 12) 1914; Systemic Diseases of Focal Origin, in Forchheimer's Therapeusis of Internal Diseases **5**: 169, 1914; The Principles Involved in Focal Infection as Related to Systemic Disease, J. A. M. A. **67**: 847 (Sept. 16) 1916; Focal Infection, Lane Medical Lectures, New York, D. Appleton & Co., 1917; Focal Infection, the Oxford Medicine, 1919, New York, Oxford University Press, p. 317. Davis, D. J.: Chronic Streptococcus Arthritis, J. A. M. A. **61**: 724 (Sept. 6) 1913. Jackson, Leila: Experimental Arthritis in Rabbits, J. Infect. Dis. **12**: 364, 1913. Rosenow, E. C.: The Etiology of Articular and Muscular Rheumatism, J. A. M. A. **60**: 1223 (April 19) 1913.

host, which is always relative and never absolute, may be further diminished by exhaustion and debility due to physical and mental overwork, starvation, chronic diseases, prolonged exposure to cold and wet, and other factors. Lessened resistance of the host due to exposure to extreme cold or wet, or to excessive fatigue especially, may intensify the virulence of the pathogenic invaders in the primary foci, may promote the occurrence of bacteremia, and may precipitate infection of the systemic tissues of the host. It should be remembered, too, that, with a bacteremia, noninfectious morbid conditions of joints due to faults of posture or weight-bearing, to trauma and the wear and tear of life, may increase the susceptibility to joint infection.

In this study we excluded acute infectious arthritis characterized by purulent exudates in the joint tissues and synovial sac which are caused by virulent strains of the streptococcus, pneumococcus, gonococcus, staphylococcus and other bacteria. Chronic infectious deforming arthritis is not attended with purulent exudates, and, if suppuration occurs in the joint tissues during the course of this disease, it is due to secondary sepsis.

This clinical research was centered on a study of the strains of streptococci isolated from the etiologic primary and secondary foci and from the infected periarticular tissues and synovial sac and from the joint exudate. The green-producing strains of the streptococcus were very predominant in pure and in mixed cultures. In animal experimentation the green-producing strains showed evidence of varying virulence, but usually were nonpyogenic. The hemolytic strains varied in virulence also; some strains produced purulent exudates in the joints of the intravenously injected animal, while other strains caused arthritis with serous or serofibrinous exudates. The quality of tropism was evident in many strains of the isolated bacteria, as manifested by the apparent affinity for the tissues of the joints, and some strains showed a marked affinity for muscular tissues. In a few patients, mildly virulent strains of gonococci were isolated from the only recognizable primary foci. These nonpyogenic strains caused arthritis with serofibrinous exudate in the intravenously injected rabbits.

This study of the character of the bacteria isolated from the primary foci and from the infected joint tissues and muscles of patients, and their effect on intravenously injected animals, was considered presumable evidence that chronic infectious arthritis is usually caused by strains of streptococci which are usually nonhemolytic and of low virulence, and occasionally by nonpyogenic strains of gonococci. The bacteria reach the joints through the blood stream, and lodge in the small vessels of the periarticular tissues, in the terminal vessels of the subserosa, and in the branches of the nutrient artery which end in the epiphysis. The reaction of the infected tissues is consistent with the degree of virulence of the infectious invaders which may be compared to minute emboli. Clumps of bacteria may block the small blood vessels, or the endothelial proliferation caused by the infection may obstruct the small blood vessels; local hemorrhages occur, and there may be a serofibrinous exudate manifested by edema and swelling of the periarticular tissues, and the synovial sac may contain more or less serofibrinous fluid. The infection may be confined to the periarticular tissues or may be a simple synovitis or, if the infection occurs in the epiphysis of the bone entering into the joint, primary ostearthritis may result. The severity of the local joint infection and the degree of general systemic disturbance is apparently dependent on the virulence of the invading infectious agents and on the number of bacteria which primarily reach the joint tissues. If the virulence of the micro-organisms is relatively high, the onset may resemble acute rheumatic fever. If the virulence is relatively low, the onset may be insidious and manifested by symptoms of slight involvement of the periarticular tissues only and usually of distal joints. The severe types of infection are usually progressive, and the character of the morbid changes of the joint tissues is hypertrophic or proliferative. The milder types are usually associated with morbid changes of a degenerative or atrophic character.

MORBID ANATOMY

Nichols and Richardson[2] have given an excellent description of the morbid anatomic conditions of the joints in chronic infectious deforming arthritis. They state that the morbid changes, both hypertrophic or proliferative and atrophic or degenerative, cannot be differentiated etiologically. They suggest that the morbid changes are due to the reaction of the tissues excited by toxins derived from infectious invaders or from faulty metabolism and other sources. In this group of patients were individuals who presented all types of arthritis: periarthritis and ostearthritis and synovitis; and individuals also exhibited typical hypertrophic or proliferative changes in one or more joints, while in other joints the morbid changes were atrophic or degenerative. The hypertrophic type was most frequently found in the young and vigorous individuals. Two of the children presented good examples of Still's disease, both typical examples of focal infection. Hypertrophy of bone in the form of Heberden's nodes and hypertrophic or atrophic changes in the larger joints were in evidence in the elderly patients of the group. Several patients presented typical villous arthritis of the knee joint, while in other joints the infection was manifested by milder anatomic forms of synovitis or periarthritis.

The study of this group of patients justifies the view that these morbid tissue changes are probably secondary to the primary reactions of the joint tissues due to the presence of the invaders or their toxins. If the embolic mode of infection is accepted, the tissue reaction includes the blocking of blood vessels by bacterial emboli and by endothelial proliferation with small perivascular hemorrhages and serofibrinous exudate in the tissues and in the synovial sac, with a tendency to subsequent cellular proliferation and secondary sclerosis and contraction. These morbid conditions interfere with the local blood supply and with the nutrition of the infected joint tissues. Repeated doses of the infectious micro-organisms having their source in the primary or secondary etiologic foci will cause renewed and increased damage to the joint tissues. The relative ischemia that results will be followed by malnutrition of the infected tissues. The local morbid condition will be aggravated by the systemic malnutrition and lessened tone of the general circulation from which these patients suffer usually. It is fair to assume that the local malnutrition and morbid changes in the tissues associated with general debility will lead to secondary degenerative changes in the joint structures.

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[2] Nichols, E. H., and Richardson, F. L.: Arthritis Deformans, J. M. Res. **16**: 149, 1909.

The marked secondary morbid changes which occur in chronic infectious osteoarthritis, characterized by the tendency to the formation of new bone, must be due to faulty metabolism. In ostearthritis of the hip, knee, ankle, elbow, wrist, jaw and the spinal column, it is not unusual to find the ligaments converted into bone. This is so pronounced in some cases of ostearthritis of the spine that the bony overgrowth has been likened to the hardened tallow of a guttering candle. The cartilage and the muscle tendons surrounding some joints may become partly or wholly converted into bone. It is difficult to explain the influences which seem to stimulate the conversion of the lower types of these tissues, muscle tendons, ligaments and cartilage into the higher type bone, although the change is explicable on the fact that they have the same mesenchymal origin.

Apparently the part which a deficient blood supply and the consequent poor tissue nutrition may play in the conversion of ligaments, cartilage and muscle tendons into bone was illustrated in some of our patients. One woman, who suffered from a chronic infectious polyarthritis of moderate severity, wore a cast on one ankle when she was admitted to the clinic. This had been applied three or more months before as an experimental method of relieving the lameness of the ankle. When the cast was removed, the joint was found completely ankylosed. This experience was amplified by the same results of fixation of joints in other patients. It is well known that a joint immobilized by a plaster cast or by other means for a considerable period of time undergoes degenerative changes which may be presumed to be due to arrested function, to poor blood supply and to the consequent poor nutrition of the tissues. Other patients who entered the clinic exhibited one or more joints partly or completely ankylosed, who gave the history of surgical treatment by means of forcible flexion and extension of the joints to correct deformity. The resulting traumatism, added to the existing morbid anatomy, apparently promoted rapid bony ankylosis.

A considerable number of the patients showed diminished carbohydrate tolerance and an increase in the blood sugar. Some patients exhibited moderate blood nitrogen retention associated with slight albuminuria and cylindruria. Digestive disturbance was a common observation, especially of those patients who had suffered from the disease for several years. Coincident involvement of the cardiovascular apparatus was found in many of the patients advanced in years, with the associated degeneration of blood vessels and increase of blood pressure.

CHRONIC INFECTIOUS MYOSITIS

General chronic infectious myositis, with but slight involvement of the joints in the early stages of the disease, was a clinical entity in this group. The morbid tissue changes of the infected muscles was produced apparently in the same manner as the infection of the joints. Examination of the infected muscle tissue of animals intravenously injected with living nonhemolytic streptococci showed embolus-like clumps of bacteria in the small arteries, endothelial proliferation blocking the vessels, and small perivascular hemorrhages. The examination of the muscular tissues of the infected animals one or more months after the experimental injection revealed focal connective tissue overgrowth, obliteration of small arteries, and a contraction of the muscular bundles due to the connective tissue sclerosis. This histologic examination of the infected human muscle, which was removed under local anesthesia and always with the consent of the patient, showed similar morbid changes characterized by connective tissue overgrowth and contraction.

Some of the patients complained of pain, and this was associated with tenderness of the nerve trunks and of muscle bundles to which the nerves were distributed. This was interpreted as infectious neuritis or perineuritis due to the same infectious micro-organisms.

The deformity of joints in these patients was due to bony overgrowth, to involuntary overaction of flexor muscles to relieve intra-articular pressure, and also to contraction of muscles due to morbid tissue changes caused by infection of the muscles.

CLINICAL COURSE

The onset of the disease in 136 patients was characterized by acute symptoms manifested by acute or subacute arthritis, fever, increase of pulse rate and general discomfort. In 265 patients the onset was insidious. The relation of the onset to the end-result of the management and treatment is shown in Table 9. The clinical study of the group justifies the opinion that the progressive character of the disease is explained by the persistence of the primary or secondary etiologic foci through the failure of their complete eradication. The resulting intermittent bacteremia and reinfection of joint tissues serves to explain the occurrence of exacerbations and the persistence of the morbid conditions which are so characteristic of the disease. The persistence of the joint infection after the spontaneous disappearance of the surgical eradication of the primary and secondary etiologic foci finds explanation probably in the continued presence of the infectious agents in the joint tissues or in tissues which are in situations which do not permit of exploration, as, for example, in the mesenteric and other lymph nodes. After the removal of the etiologic foci of infection, the failure to apply a rational available management and treatment to correct remediable tissue defects explains the failure of improvement or of recovery in some of these patients.

MANAGEMENT AND TREATMENT

The management and treatment of this group of patients was based on the principles that relate to the cause, the mode of infection and the character of the morbid anatomic changes. Primarily, this involved the location and eradication of the apparent etiologic focus of infection. The location of the real focus of infection was difficult occasionally, and at times impossible. The diagnosis and location of the primary focus sometimes required the highest clinical skill and the cooperation of qualified specialists, laboratory investigation and the use of diagnostic instruments of precision, including the roentgen ray. In some patients the failure to eradicate completely the etiologic focus by surgical measures defeated the subsequent management and treatment. The failure to locate the real focus of infection at the beginning was illustrated in some of these patients. Two men of middle age, both of whom exhibited moderately severe periarticular arthritis associated with myositis, showed infected tonsils and associated apical infection of some of the roots of the teeth. These foci of infection were eradicated surgically, and immediate partial recovery resulted. Relapses occurred in both instances, and later both patients developed evidences of calculous cholecystitis. After successful surgical treatment of this infection, both patients made complete recovery. Another patient, a woman, improved for a period after the removal of apparently infected tonsils and the extraction of some infected teeth, and then relapsed into a worse condition. She soon developed classical evidences of acute appendicitis, returned to the hospital, and, after appendectomy, made a prompt and complete recovery. It is probable that the failure to locate and to eradicate the real focus of infection in some of the other patients was the cause of the poor end-result.

The management adopted to overcome the systemic infection, to promote improvement of morbid tissues and to restore function of the joints included the general physical improvement of the patient by the selection of a properly balanced diet, the use of restorative and palliative drugs, attention to personal and general hygiene, a cheerful environment, and the employment of physical therapy, including hydrotherapy, thermotherapy, electrotherapy, occupational therapy, mechanotherapy, and regulated passive and active exercise.

While an attempt was made to select a balanced diet, individual peculiarities were considered. Some patients with a low carbohydrate tolerance, others with blood nitrogen retention or with a deficient output of urinary solids due to some morbid kidney condition, and others with manifest defective digestion were given a suitable diet to meet the individual condition. General malnutrition was met by a full, nourishing diet. Some patients were apparently benefited by a deficient but balanced diet over short periods of time. Patients with anemia were given hematinic and other tonics. Pain and soreness of joints and muscles and general discomfort were palliated by salicylic acid compounds. When possible, constipation was corrected by the proper diet and, when necessary, by simple laxatives. Bed rest was maintained during the stage of acute manifestation, and for very painful joints. Painful and sore joints were immobilized by means of splints or plaster casts applied for short periods of time. As soon as the absence of pain and soreness permitted, passive exercise was begun and increased cautiously day by day.

The results of this study emphasize the fact that the primary and fundamental purpose of all forms of physical therapy is to attempt to restore the general and local blood circulation and the nutrition of the tissues, and also the function of the disabled organs. The general debility which was manifested in a majority of these patients was associated with poor general circulation of the blood. The local blood supply of the infected joints and muscles was deficient also because of the general debility of the patient and because of the character of the morbid anatomic changes.

It was found that the improvement of the general condition of the patient by proper diet, rest, environment and other measures aided in the restoration of the tone of the general circulation. The tone of the general circulation was notably improved also by the rational application of hydrotherapy in the form of an alternating hot and cold shower or spray bath under considerable pressure. It was found that this type of hydrotherapy is equivalent in its tonic effects to a cold plunge bath, and at the same time is devoid of the shock and the unpleasant features of the latter. The circulation of the infected joints was improved also by the local application of the alternating hot-cold spray. Dry heat applied for a short period daily by means of hot air baking, by electric radiant light and by other simple means greatly improved the local blood circulation and at the same time palliated pain and soreness. Diathermy was not used. The proper application of massage, Swedish movements, calisthenics and other active exercises, such as walking, were found to be very helpful at the proper period in the treatment. Occupational therapy suitable for both bed and ambulatory patients was very useful in the restoration of the function of a special group of muscles and, in addition, was a valuable form of diversion to these unfortunates.

The general and special surgeons of the staff cooperated in the correction of deformities by the forcible extension of overflexed extremities by tenotomy and other measures when indicated. The experience gained in the application of forcible movements of the joints, if attended with considerable injury to the tissues by the breaking up of dense adhesions, justifies the opinion that this method of treatment may do more harm than benefit.

The experience gained in this study justifies the opinion that the general improvement of the patient who suffers from chronic infectious arthritis, which will usually follow the rational application of the measures of management and treatment described, will do more to restore the natural resistance of the patient to further local or general infection and to rid the tissues of the infectious invaders, than any other form of treatment. However, in the management and treatment instituted, autogenous vaccines of killed streptococci, a polyvalent horse serum, and nonspecific proteins injected intravenously were used with some of the patients. The autogenous vaccines were made in the laboratory of the hospital and in the laboratory of the John Rockefeller McCormick Institute for Infectious Diseases from strains of streptococci obtained from (*a*) cultures made from primary and secondary foci of infection and from infected muscles and infected joint tissues of patients; (*b*) strains of streptococci obtained from the joint tissues and muscles of laboratory animals intravenously injected with strains obtained from infected human tissues, and (*c*) autogenous strains *a* and *b* sensitized with the polyvalent horse serum mentioned. These autogenous vaccines were used hypodermically in doses of from 50 millions to 2 billions repeated at intervals at from five to seven days. The effect of the vaccines was studied by noting the local, the general and the focal reaction, and by estimating the opsonic index of the blood of the patient before and after each vaccination. Experience showed that a medium dose of from 300 million to 500 million of the vaccine was quite as effective as larger doses, and this standard dose was finally adopted. The local reaction was usually manifested by slight local tumefaction, occasional slight redness of the skin, and a moderate degree of soreness. The general reaction was almost always objectively negative; subjectively, patients sometimes expressed a feeling of improvement or of greater discomfort. Focal reaction was usually objectively negative, but the patients sometimes complained of greater discomfort in the affected joints or muscles from twelve to twenty-four hours after the vaccination. The opsonic index usually showed an upward curve, but did not disclose evidence of improvement in the immunity of the patient, and after a year of steady application it was abandoned because its value as a measurement of the effect of the vaccination did not justify the great amount of work it entailed.

The polyvalent streptococcus horse serum was made by the intravenous injection of two horses with approximately sixty strains of nonhemolytic and hemolytic streptococci under the direction of Dr. J. J. Moore. Its specificity was tested by an estimation of its contained opsonins. The serum was used in the treatment of eighteen patients by injecting it subcutaneously in gradually increasing doses at intervals of from five to ten days. The local reaction to the injections of the serum was evidenced by a considerable local tumefaction of the subcutaneous tissues, some redness of the skin, and by a considerable soreness, which continued for a day or longer; the general reaction was usually positive, as shown by a slight rise in the body temperature, a moderate increase in the pulse rate, and a complaint of greater soreness of the joints. The focal reaction was not evident objectively, but virtually all of the patients who received the serum complained of greater discomfort in the infected joints. After one or more injections of the serum, practically all of the eighteen patients became sensitized to the serum, and subsequent doses caused anaphylactic or anaphylactoid shock. The anaphylactic shock was so severe in a few of the patients that it was decided to abandon it because the results of the treatment did not show sufficient benefit to justify the risk which its use involved. The autogenous vaccines sensitized with the polyvalent horse serum did not prove to be of greater benefit than the unsensitized antigen. The intravenous injection of foreign protein, bacterial and others, was usually attended with serious reactions, characterized by chill, followed by high febrile temperature, rapid pulse and great general discomfort. The opposition expressed by patients to the repetition of a second or third treatment restricted its general use. Some patients suffering from the milder types of arthritis were manifestly improved by the intravenous injection of the foreign protein. The small experience with the use of foreign proteins intravenously in this study does not justify an opinion as to the merits of this form of treatment of chronic infectious arthritis.

Of the 411 patients, 229 received autogenous vaccine, eighteen received vaccine and serum, and 164 were treated without vaccines or serum.

STATISTICS

The questions included in the questionnaire[3] were:

1. Have you had any additional focus of infection about the nose, throat, jaws or elsewhere since you were in the clinic?
2. Have you had any marked setbacks in your general condition?
3. (*a*) How much are you able to do in the way of work with the upper extremities? (*b*) How much are you able to do in the way of walking, with or without artificial appliances?
4. What is the condition of your spine?
5. What is the condition of your general health, particularly as regards weight, appetite, bowel movement, etc.?
6. How fully have you carried out the management with particular reference to forms of calisthenic and other exercise, tonic hot-cold-hot bath, avoidance of fatigue and proper food?
7. What treatment prescribed by us or others (exclusive of Question 8) have you had since you last attended the clinic?
8. Have you used with or without your doctor's advice any vaccines, serum, etc., and if so, what kind?
9. General remarks.

TABLE 1.—AGE INCIDENCE AT ONSET OF DISEASE

Age	Males	Females	Total	Osler's Series
1-10	1	4	5	21
11-20	15	29	44	72
21-30	50	62	112	108
31-40	37	58	95	107
41-50	23	53	76	83
51-60	25	35	60	66
61-70	4	15	19	27
71-80	0	0	0	4
Doubtful	0	0	0	12
Total	155	256	411	500

The youngest patient was a girl, aged 4 years, and the oldest was a man, aged 68. It is to be noted that the period of greatest incidence was in the third and fourth decades of life; 207 patients (50.3 per cent.) appear in these groups. In 161 patients (39.1 per cent.) the disease occurred before the age of 30 years. For the purpose of comparison, the figures of the incidence of the disease in the series reported by Osler are given in Table 1. It will be noted that 256 of the patients in this series were females and 155 were males. In the 500 patients reported by Garrod, which did not include patients with spondylitis, 411 were females. The group reported by Osler represented 256 females and 244 males. All of these reports indicate that the disease occurs more frequently in the female than in the male sex.

TABLE 2.—AGE INCIDENCE ON ADMISSION TO THE CLINIC

Age	Males	Females	Total
1-10	0	2	2
11-20	6	14	20
21-30	30	42	72
31-40	49	54	103
41-50	28	64	92
51-60	24	53	77
61-70	17	23	40
71-80	1	4	5
Total	155	256	411

On admission to the clinic, ninety-four patients (22.3 per cent.) were 30 years of age or less. This is in agreement with the statistics of Osler, in which 22 per cent. were under 30 years of age on admission to the hospital. The greatest age incidence on admission to the hospital was in the fourth and fifth decades.

TABLE 3.—DURATION, BY YEARS, OF DISEASE PREVIOUS TO ADMISSION TO THE CLINIC

Age	Males	Females	Total
0-1	28	39	67
1-2	29	37	66
2-3	18	39	57
3-4	16	16	32
4-5	11	25	36
5-6	4	18	22
6-7	4	9	13
7-8	4	10	14
8-9	4	11	15
9-10	5	7	12
10-15	17	24	41
15-20	8	10	18
20 or more	7	11	18
Total	155	256	411

Table 3 is a more detailed statistical compilation of the information given in Table 2. One hundred and thirty-three patients (32.3 per cent) had suffered from the disease less than two years, on admission to the clinic, while seventy-seven patients (18.7 per cent.) had the disease more than ten years before they were admitted to the hospital.

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[3] Questions 7 and 8 were included only in the questionnaire sent in 1921.

TABLE 4.—OCCUPATIONS REPRESENTED

	Males	Females	Total
Indoor Occupations:			
Housework	0	195	195
Salespersons (clerks)	35	7	
School (student)	7	12	
Teacher	4	12	
Merchant	14	0	
Manager	8	0	
Nurse	1	7	
Garment worker (seamstress)	2	6	
Stenographer	1	7	
Telephone operator	0	7	
Lawyer	6	0	
Banker	4	0	
Brewer	3	0	
Barber	2	0	
Baker	1	0	
Shoemaker	1	0	
Printer	1	0	
			148
Total indoor occupations			343
Outdoor Occupations:			
Building trades	23	0	
Farmer	18	0	
Physician	13	1	
Engineer	6	0	
Artist	2	1	
Minister	1	0	
Total outdoor occupations			65
No occupation given	2	1	
			3
Total	155	256	411

The possible contributory etiologic influence of occupation is shown in Table 4. It will be noted that the 195 women patients (47.4 per cent.) were engaged in some form of general housework. One hundred and forty-eight male and female patients (36 per cent.) were engaged in some other form of indoor occupation, making a combined total of 343 (83.4 per cent.) of the 411 patients who were engaged in indoor occupations. Sixty-five patients (15.6 per cent.) were engaged in outdoor occupations, and it is of interest to note that of these, fourteen (3.4 per cent.) were physicians. In the series reported by Osler, a large majority of the patients had been engaged in indoor occupations.

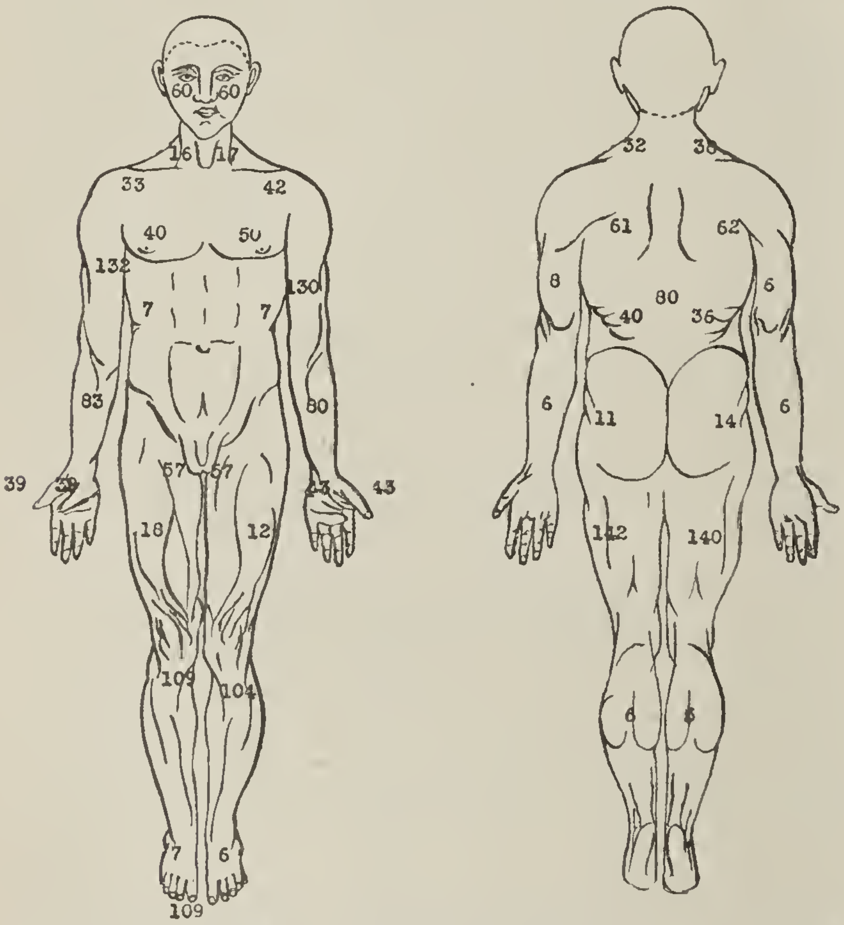

Fig. 1.—Morbid anatomic changes due to true myositis and to spasmodically contracted and atrophic muscles.

The attempt to classify the patients on the basis of the apparent anatomic changes is shown in Table 5. It will be noted that 311 patients exhibited the mixed types of the disease. One hundred patients were fairly representative of pure types of either ostearthritis, periarthritis or myositis. Not all of the thirty-four patients classified as myopathic were free entirely of some joint involvement, but the incidence of myositis was predominant.

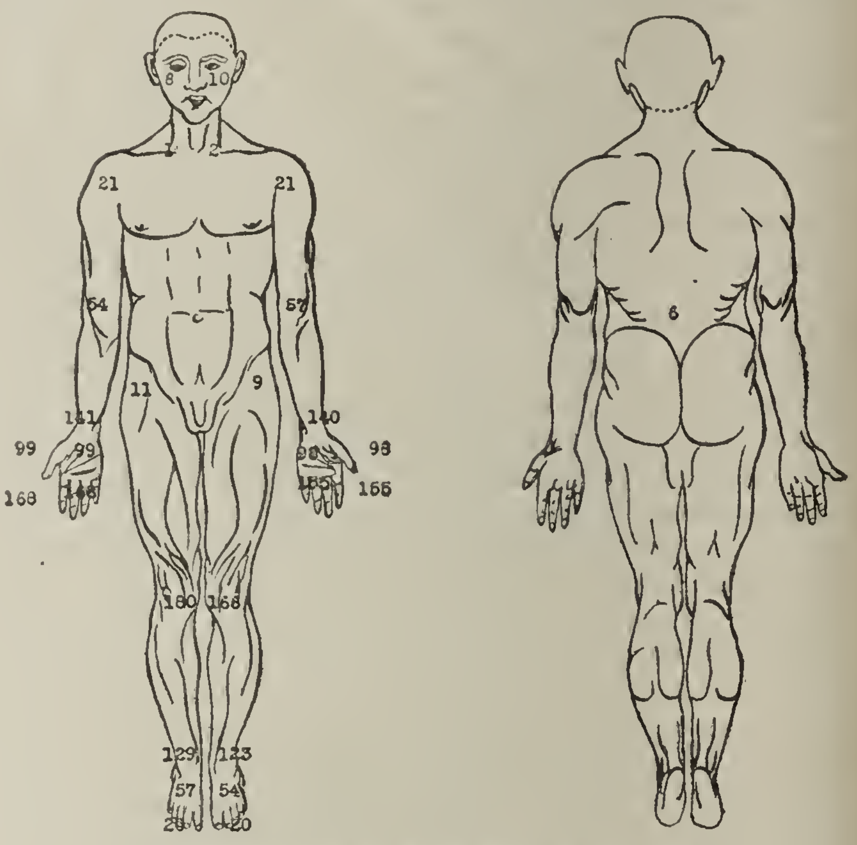

Fig. 2.—Incidence of periarthritis in the joints.

The classification of the disease based on the morbid anatomic conditions serves a useful purpose in a clinical description of the disease. This study of the group of patients indicates that the several degrees of morbid anatomic conditions recognized in such a classification are more properly stages of the development of the infectious process in the joints. The element of time in which the disease has existed must be taken into consideration in any attempt to classify the disease on an anatomic basis.

TABLE 5.—TYPE OF INVOLVEMENT

Mixed:		
Predominant myopathic	58	
Predominant periarthritic	208	
Predominant ostearthritic	45	
		311
Virtually Pure:		
Myopathic	34	
Periarthritic	55	
Ostearthritic	11	
		100
Total		411

In Figure 1, the numerals indicate morbid anatomic changes of muscles due to true myositis and also to spasmodically contracted and atrophic muscles.

In Figure 2, the numerals indicate the incidence of periarthritis of the respective joints. Attention is directed to the fact that spondylitis of periarthritic type was encountered in six patients.

In Figure 3, the numerals indicate the incidence of ostearthritis, which includes twenty-six patients with spondylitis.

It will be noted, in Table 6, that no primary or secondary focus of infection was found in twenty-five patients. As stated previously, there exists always the possibility that a focus of infection may exist in some organ or tissue inaccessible to methods of examination. Table 6 indicates the site of single or multiple foci of infection in 386 patients.

TABLE 6.—PROBABLE FOCI: HOW OFTEN AND IN WHAT COMBINATIONS THEY WERE FOUND

	No.		No.
None found	25	Tonsil and apendix	1
Tonsil only	205	Tonsil, uterus and tube	6
Tonsil and teeth	97	Teeth only	27
Tonsil and sinus	4	Teeth and sinus	1
Tonsils, teeth and sinus	4	Teeth and pus tubes	1
Tonsil and bronchi	1	Teeth and prostate	1
Tonsil, teeth and bronchi	2	Sinus only	1
Tonsil, teeth, bronchi and sinus	1	Prostate and genito-urinary tract only	12
Tonsil and prostate	9	Uterus and appendages only	4
Tonsil, teeth and prostate	2	Middle ear only	1
Tonsil and gallbladder	2	Bronchi only	1
Tonsil, sinus and gallbladder	1	Enterocolitis	1
Tonsil and enterocolitis	1		
Total			411

Table 7 indicates the number of times that a primary or secondary focus of infection was found in designated sites.

In connection with the statistics of the incidence and the location of primary foci of infection, it should be added that, as to the previous existence of foci of infection, evidenced by the histories obtained at the time of admission of the patients to the clinic, forty-four patients (10.7 per cent.) denied knowledge of previous focal infection. Two hundred and twenty-one patients (53.7 per cent.) gave a definite history of attacks of tonsillitis. Seventy-two patients (17.5 per cent.) had suffered from attacks of rheumatism, and forty of these patients presented evidences of valvular defects of the heart. Thirty-five patients (8.5 per cent.) had suffered from dental infection. Seventy-four (17.6 per cent.) confessed to previous genito-urinary infection.

TABLE 7.—NUMBER OF TIMES EACH FOCUS WAS CONSIDERED A PROBABLE SOURCE OF INFECTION

	No.		No.
Tonsil	336	Prostate and genito-urinary tract	24
Teeth	136	Gallbladder	3
Sinus	12	Enterocolitis	2
Bronchi	5	Appendix	1
Uterus and tubes	12	Middle ear	1

The preponderance of nonhemolytic types of streptococci is shown in the statistics as made from the infected excised lymph glands, joint tissues and pieces of muscle and from foci of infection (Table 8). Comment has already been made on the varying degree of virulence which characterized the isolated bacteria.

TABLE 9.—RELATION OF TYPE OF ONSET TO END-RESULTS; BASED ON 1917 RETURNS

	Worse or Unimproved	Improved	Practically Recovered or Cured	Dead	No Report	Total
Acute onset	23	42	30	4	37	136
Insidius onset	53	97	39	12	64	265
No record	3	3	2	1	1	10
Total	79	142	71	17	102	411

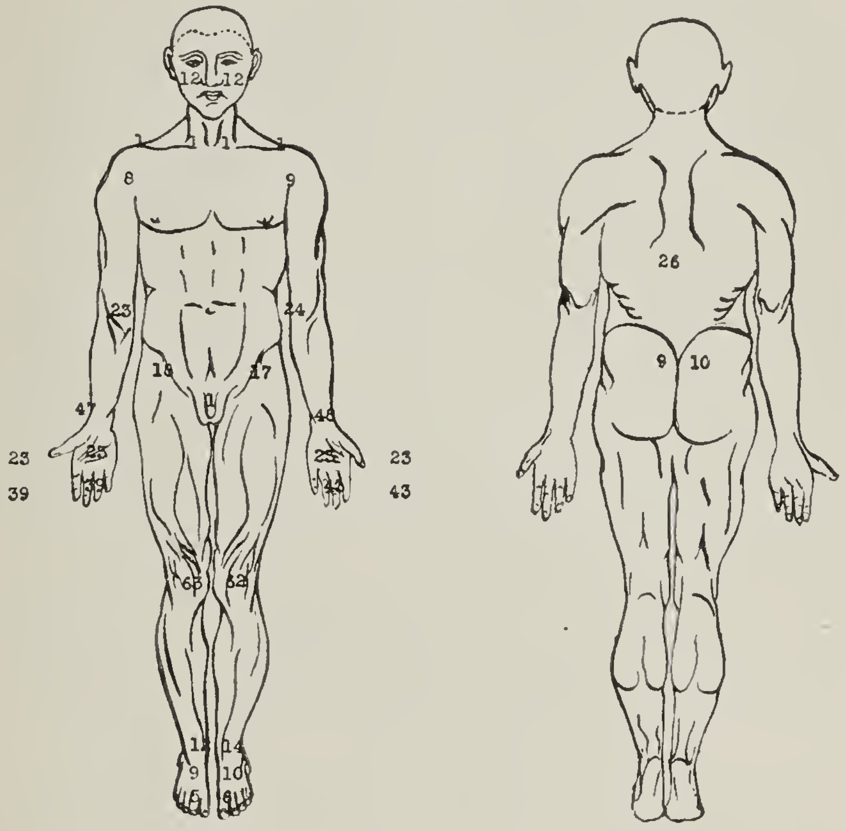

Fig. 3.—Incidence of ostearthritis.

It is a generally accepted opinion that the more acute the onset of infectious arthritis, the more favorable the prognosis for improvement and cure, and that the more insidious the onset, the less favorable the prognosis for improvement or cure. This opinion is substantiated in the statistics of Table 9. Twenty-two per cent. of the patients in whom the disease was manifested by an

TABLE 8.—ORGANISMS OBTAINED

Focus of Infection	No Streptococci Found	Not Removed, No Record, or Removed Before Admission	Only Streptococci Found Were Hemolytic Streptococci	Only Streptococci Found Were Nonhemolytic or Green Producing Streptococci	Mixed Streptococci: Nonhemolytic Predominating	Mixed Streptococci: Hemolytic Predominating	Gonococci Only	Mixed Gonococci and Streptococci	Staphylococci Only	Total
Tonsil	0	82	20	34	150	50	0	0	0	336
Teeth	16	29	8	63	39	5	0	0	1	161
Sinus	3	0	1	5	3	0	0	0	0	12
Bronchi	0	0	0	0	4	1	0	0	0	5
Prostate and genito-urinary tract	6	0	2	10	0	1	6	2	3	30
Uterus and tubes	1	2	0	8	1	0	0	0	0	12
Gallbladder	0	2	0	0	1	0	0	0	0	3
Appendix	0	1	0	0	0	0	0	0	0	1
Stool	5	0	1	1	0	0	0	0	0	7
Ear	0	0	0	0	1	0	0	0	0	1
Gland	6	1	1	19	1	0	0	0	0	28
Joint	6	1	1	5	1	0	0	0	0	14
Muscle	1	0	0	7	0	0	0	0	0	8
Bursa	0	0	0	1	0	0	0	0	0	1
Fibrous node	0	0	0	1	0	0	0	0	0	1
Blood	3	0	0	1	0	0	0	0	0	4
Total	47	118	34	155	201	57	6	2	4	624

acute onset recovered, as compared with 14.7 per cent. of the patients who recovered in whom the disease was characterized by an insidious onset, and 16.8 per cent. of the patients manifesting acute symptoms showed end-results which were unimproved or worse, and 20 per cent. of the patients in whom the disease began insidiously remained unimproved or became worse.

TABLE 10.—DURATION OF DISEASE IN RELATION TO END-RESULTS, BASED ON 1917 RETURNS

Duration	Worse or Unimproved	Improved	Practically Recovered or Cured	Dead	No Report	Total
Less than 2 years..	12	36	42	4	39	133
More than 2 years.	67	106	29	13	63	278
Total.........	79	142	71	17	102	411

It is generally accepted that a more favorable result of treatment of an infectious disease will result if early treatment is instituted. This principle is especially applicable to the treatment of chronic infectious arthritis. If the treatment and management which has been described is applied to patients who suffer with chronic infectious arthritis before irremediable anatomic morbid changes have taken place, a majority of the patients will recover or, at any rate, will be vastly improved, and the disease may be brought to a standstill. It will be noted that in the group of patients who were admitted to the clinic within two years of the onset of the disease, forty-two recovered, while of the group of patients who were admitted at a period of more than two years of the onset of the disease only twenty-nine recovered.

TABLE 11.—RELATION OF VACCINE THERAPY TO END-RESULTS, BASED ON 1917 REPORTS

	Worse or Unimproved	Improved or Greatly Improved	Practically Recovered or Cured	Dead	No Report	Total
Vaccine.......	55	89	39	7	39	229
Percentage of total cases...	13.3	21.6	9.4	1.6	9.4	44.7
Percentage of vaccinated...	24.0	38.9	17.0	3.1	17.0	100
Mixed vaccine and serum...	3	6	4	1	4	18
Percentage of total.........	0.73	1.46	0.97	0.27	0.97	4.4
Percentage of treated cases	16.6	33.3	22.2	5.5	22.2	100
No vaccine or serum........	21	47	28	9	59	164
Percentage of total.........	5.2	11.4	6.8	2.2	14.3	39.9
Percentage of unvaccinated	12.8	28.6	17.0	5.4	36.0	100
Total	79	142	71	17	102	411
Percentage of total.........	16.6	34.6	17.3	4.1	24.8	100

In estimating the comparative results of treatment with vaccines and serum and without these so-called specific therapeutic agents, it will be noted (Table 11) that 229 patients received autogenous vaccines, of whom eighty-nine patients (38.9 per cent.) of those vaccinated were improved, and thirty-nine (17 per cent.) of those vaccinated recovered; that of eighteen patients who received mixed vaccine and serum, six (33.3 per cent.) were improved, and four patients (22.2 per cent.) of those who received serum recovered; that of 164 patients who did not receive either vaccine or serum, forty-seven (28.6 per cent.) were improved and twenty-eight patients (17 per cent.) who were unvaccinated recovered. These statistics confirm and substantiate the opinion which we have expressed on former occasions that specific remedies in the form of bacterial antigens are of little or no value in the treatment of chronic infectious arthritis.

The importance of physical therapy in the treatment of chronic arthritis is shown in Table 12. Of 186 patients who carried out the management described, 114 (61.2 per cent.) were improved, and sixty-one (32.8 per cent.) recovered. Of ninety-two patients who did not carry out the advised management, twenty (21.5 per cent.) improved and five (5.4 per cent.) recovered. Each patient who remained long enough in the hospital was instructed and educated in carrying out feasible and available types of physical therapy in their homes. Emphasis was made of the importance of the daily application of different types of physical exercise and of hydrotherapy when available. Each patient was especially directed to avoid excessive fatigue and to follow periods of exercise with rest in the recumbent posture. Letters were written to the family physician giving the details of the method of management and emphasizing the need and the value of physical therapy daily. In the earlier periods of the work, autogenous bacterial antigens were prepared and sent to the family physician with directions for their use.

TABLE 12.—RELATION OF MANAGEMENT TO END-RESULTS, BASED ON 1917 REPORT

	Worse or Unimproved	Improved	Practically Recovered or Cured	Dead	Total
Carried out management....	11	114	61	8	194
Did not carry out management........................	68	20	5	8	101
No record......................	0	8	5	1	14
Total.....................	79	142	71	17	309

The value of the management and of physical therapy in the treatment of these patients was emphasized over and over again by the improvement of patients who returned to the hospital for further management and treatment the second and the third time because they did not improve at home. In practically every instance the failure to improve at home was found to be due to the failure to carry out faithfully the management described because of indifference on the part of the patient and members of the family and, in some instances, because of the lack of interest on the part of the family physician.

TABLE 13.—END-RESULTS, BASED ON ANSWERS TO QUESTIONNAIRE, 1917-1921

Answers to Questionnaire	Total Answers Received	No Answers Received	Worse or Unimproved	Improved and Greatly Improved	Practically Recovered or Cured	Dead
1917...........	309	102	79	142	71	17
Percentage of total........	75.2	24.8	16.6	34.6	17.3	4.1
Percentage of answers.....	....	....	25.5	46.0	23.0	5.5
1921...........	225	185	51	44	92	39
Percentage of total........	54.9	45.1	12.4	10.7	22.2	9.4
Percentage of answers.....	....	....	22.7	19.6	40.5	17.3

Table 13 gives the end-result of the treatment of 309 patients who replied to the questionnaire in 1917, and 225 patients who replied in 1921. In 1917, 142 of the 309 patients (46 per cent.) were improved, and seventy-one (23 per cent.) recovered. In 1921, of 225 patients, practically all of whom were included in the statistics of 1917, forty-four (19.6 per cent.) were improved, and ninety-two (40.5 per cent.) had recovered. It will be noted that in the answers received in 1917, 143 patients (34.6 per cent.) of the total patients of the series were improved, and seventy-one patients (17.3 per cent.) of the total number of patients had recovered.

In estimating the end-results, so far as possible the term "improvement" indicates improvement both anatomic and functional, and the restoration of the patient to the degree which permits of the assumption of life's responsibilities; by "recovery" is meant both anatomic and functional recovery.

CONCLUSION

This clinical investigation confirms and substantiates the present point of view of a majority of clinicians who have had the opportunity to make a careful investigation of chronic deforming arthritis, that it is primarily an infectious disease, and that the infectious micro-organisms which are the cause are usually strains of nonhemolytic streptococci of relatively low virulence, or occasionally strains of nonpyogenic gonococci or even of other bacteria of mild pathogenicity.

The cause of the remarkable transformation of the fibrous tissues which enter into the joint structure and also of muscle tendons, into bone, is an interesting subject for future investigation. If the remarkable results of the animal experiments reported by Oxhausen[4] can be substantiated, it may be possible to apply preventive measures which will obviate these disabling, irremediable secondary morbid changes.

AMYTONIA CONGENITA, COMPLICATED BY ACUTE CHOLECYSTITIS OF TYPHOID ORIGIN

REPORT OF CASE

WILLIAM GERRY MORGAN, M.D.
AND
DANIEL D. V. STUART, JR., M.D.
WASHINGTON, D. C.

History.—A schoolboy aged 7 years, first seen by one of us (W. G. M.), Aug. 6, 1918, complained of difficulty in walking, with recurrent attacks of nausea and vomiting, and loss of weight. The family history was unimportant, excepting for the fact that the parents were first cousins. Two younger children were healthy and of normal development. One younger brother died in infancy of an acute intestinal disease. At the birth of the patient, labor was normal. As an infant he had been breast fed. No convulsions had occurred during infancy. Speech and dentition began at the usual age, and intellectual development always appeared rather above par. During the first year of the patient's life, the tendon reflexes in the legs were noted as being "not normal" by his uncle, a physician. The child sat erect when 7 months old, but made no attempt to walk until 16 months of age. At that time he was given thyroid extract in unknown dosage, and within three weeks was walking. This medication was continued intermittently for the next two years, and his walking and the general muscular tone of the lower extremities improved slowly but steadily up to the time of examination. The patient had always been constipated, and at 3 years of age he had the first of the attacks of gastro-enteric disturbance complained of. From then to the date of examination, they occurred with some regularity every three months. These seizures, unvarying in type, were characterized by sudden onset, fever, flushing of the skin, intense thirst, nausea and vomiting; and their average duration was about twenty-four hours. One attack was accompanied by general convulsions and followed by coma lasting two days. The date of this was uncertain.

Examination.—This revealed only a markedly distended abdomen, with some tenderness in the lower left quadrant. The urine contained a trace of albumin, and there was much undigested meat in the stools. A moderate grade of anemia was present (hemoglobin, 64 per cent.; red corpuscles, 4,050,000; white corpuscles, 5,000). Neurologic examination was not made at this time, but it was noted that the patellar reflexes were absent and that coordination in the lower extremities was blunted. The case was diagnosed as one of chronic constipation, with recurrent attacks of acetonemia. Under dietary regulation, with exercises in bowel control and a gymnastic regimen, the attacks ceased, daily unaided bowel evacuations became the rule, and the child gained in weight and general strength.

Subsequent History.—Two months later (October, 1918), the patient was taken to the Mayo Clinic at Rochester, Minn., on account of the difficulty in walking. A copy of the report brought back with him from that institution gives the diagnosis as "muscular dystrophy; probably congenital defect." Avoidance of fatigue was advised, and the statement made that prognosis was "probably good."

The child's general state remained good under occasional observation (W. G. M.) until Feb. 24, 1921. At that time he developed recurrent attacks of sharp abdominal pain referred to the right costal border, accompanied by some vomiting and a return of constipation. Two days later, slight elevation of temperature was present, but no leukocytosis. The condition was regarded as an acute cholecystitis, and cleared up in one week. March 12, the patient was again taken ill with headache, distress in the umbilical region, and general malaise. The temperature at this time was slightly elevated, and the leukocyte count was 6,000. The tentative diagnosis of typhoid fever was made, and blood was taken for a Widal test. Two days later he had an attack of epistaxis, the leukocytes dropped to 5,000, and the Widal test was reported positive. The disease pursued an uneventful course to recovery.

Neurologic Examination.—May 16, the child, now 9 years and 8 months old, was first examined neurologically by one of us (D. D. V. S.) He showed a striking freedom from the muscular asthenia which might be expected to follow an acute infectious disease, and this had been noticed by his parents immediately on his getting up. His father stated that there had been a slow but progressive gain in strength of the muscles of the child's back and legs since the gymnastic exercises mentioned had been started.

The cranial nerves were normal throughout.

There was slight swaying; the patient stood with marked lordosis.

The gait was waddling. The general movements of the left leg in walking were weaker than those of the right leg, but the right foot toed in because of greater weakness of the peroneal group on that side.

Examination of the superficial reflexes disclosed the pharyngeal, abdominal (upper and lower) and cremasteric active and equal on the two sides; plantar stimulation was followed by plantar flexion on both sides; descending tibial irritation was followed by dorsal flexion on both sides.

Examination of the deep reflexes disclosed the jaw active; biceps, triceps and wrist, active and equal on the two sides; the knee-kicks were not obtained; the ankle-jerk was active on the right, and somewhat diminished on the left.

There was weakness of the lumbar group and of all musculature of the lower extremities, especially marked in the right peroneal group. There was marked hypermobility of the hips, knees and ankles. There was no weakness of the face, upper extremities or anterior trunk muscles, and no atrophies or psuedohypertrophies. There was a rhythmic coarse tremor of the extended fingers. Electric examination of the affected mucles could not be made at this time, but later (June 2) a decided reduction of stimulability by both currents was noted. Reaction of degeneration was not present

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[4] Oxhausen, G.: Ueber einfache aseptiche Knochen und Knorpelenkrose, Chondritis desiccans und Arthritis deformans, Verhandl. d. deutsch Gesellsch. f. Chir., Berlin **62**: 40 (Part 1), 446 (Part 2) 1912.

All tests were very clumsily performed in both lower extremities, probably because of weakness. There was no incoordination in the upper extremities.

There were no psychotic symptoms. Intellectual development was apparently normal; no psychometric tests were used.

There was no disturbance of the sensory status.

The neurologic diagnosis was amyotonia congenita (Oppenheim's disease).

COMMENT

This condition is uncommon enough to be considered something of a curiosity. Holmes[1] states that up to 1920 approximately 125 cases had been reported in the twenty years since Oppenheim first described the disease. Since the appearance of Holmes' work, a fairly extended search has resulted in the finding of only six further reports.

According to the classical description, amyotonia congenita is a condition present at birth or noted when the child first attempts to walk; it is characterized by atony, flaccidity, and weakness (not paralysis) of the muscles of the lower extremities and sometimes of the trunk. The musculature of the head and upper extremities has been reported as involved in only a very few cases, though there seems to be no anatomic reason why it should escape. The tendon reflexes are, of course, absent or diminished; and the affected muscles show marked quantitative reduction of excitability with both faradism and galvanism; but the reaction of degeneration is never found. They do not undergo any pseudohypertrophy. The lack of tone is so pronounced that the legs can usually be moved about in a flail-like manner; and the weakness may be of any degree, from just enough to produce a loose waddling gait and difficulty in rising, to a state so extreme as to prevent any voluntary movement. The disease is chiefly to be distinguished from the progressive muscular dystrophies and the spinal form of progressive muscular atrophy. It does not appear to be hereditary, nor is there any special familial tendency to its occurrence. With regard to prognosis, these patients seem especially prone to the development of respiratory troubles, in which involvement of the trunk muscles may play a part. Aside from this possibility, a slow but steady improvement has generally been noted.

As to the pathology, there is a distinct cleavage of opinion, perhaps because few cases have come to necropsy. Oppenheim himself states in his textbook that he believes the symptoms to be due to a lack of development of the muscle fibers and perhaps of the anterior horn cells of the cord; not a degeneration. On the other hand, the condition has been regarded as an actively degenerative one, notably by Spiller and Griffith,[2] who studied a case in 1911, and by Kaumheimer,[3] whose investigations were made in 1913. The latest pathologic findings of which we have record are embodied in the paper by Holmes already referred to. His patient died of pneumonia, and he makes a full report, taking up the histopathology of the brain, spinal cord, blood vessels and muscles. He found no degenerative changes in the tissues studied, and explains his findings on the assumption of "a delayed or retarded embryologic development, affecting certain motor cells of the anterior horns and certain groups of developing muscle cells (fibers)." He further states that "no anomaly of the peripheral nerves, muscles, spindles or blood vessels was recognized."

In the case which we report, the neurologic examination summarized above differs from that made at the Mayo Clinic, two years and nine months previously, in two important respects. On the earlier date the child was unable to stand on his left foot without support, and his ankle jerks were indefinite. At the later examination he could stand on either foot unaided, and the ankle jerks were definitely present, though unequal. This clinical fact is of interest, since it is exactly what might be expected if Oppenheim's (and Holmes') conclusions are correct: that is, if the condition represents not a degenerative disease process, but simply a state of delayed or retarded neural and muscular development. The further fact that improvement had been most rapid in the two years immediately preceding the later examination, during which time the child had been undergoing physical training aimed at developing his muscles, also fits in with this hypothesis.

Two features in this case bring up interesting queries. First, was the improvement between the ages of 16 months and 3 years the result of the thyroid extract that the child was then taking, acting as a stimulant to his general development? Second, was the unusual sequence of an acute gallbladder inflammation, followed in less than two weeks by a typical attack of typhoid fever, due to a definite relationship between those two conditions? The first question we leave open. It will be noted that while the gain in muscle strength and control had been steady throughout, it began suddenly within three weeks after administration of the thyroid extract was started. This, however, proves nothing. Had circumstances allowed, following the second neurologic examination metabolic studies would have been made on the child and thyroid extract again given to him. Unfortunately, this course was impracticable. As to the second query, such a relationship is assumed to have existed; and our reasons for reporting the case are to call attention to this, and also to emphasize the need of distinguishing amyotonia congenita from the other clinical pictures grouped under the head of the muscular dystrophies. This is of the greatest importance, since in the other dystrophies the outlook for even arrest of the process is uniformly bad; while Oppenheim's disease, on the other hand, appears to offer a relatively good prognosis.

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The Evolution of Chemical Terminology.—"It is possible" according to Couch (*Am. J. Pharmacy,* February, 1922), "to remedy a large part of the existing indefiniteness in the use of chemical terms." It requires only an agreement among those who employ the terms to limit certain expressions to certain specific meanings. With this desirable end in view, he considers a number of loosely defined terms, discusses the manner in which they are now used, and presents the objections to this usage. He recommends that the term "coagulation" be defined as "an irreversible process of colloid chemistry; it consists of the complete or partial separation of the disperse from the continuous phase as the result of the chemical alteration of the system. The altered disperse phase is precipitated as a nonrigid, insoluble, solid mass"; while "flocculation" should be considered "a process of colloid chemistry in which the complete or partial separation of the phases is effected through an alteration of the physical condition of the disperse phase, either by a diminishing of its degree of dispersion or by a modifying of the electrical equilibrium of the system."

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[1] Holmes, J. B.: Amyotonia Congenita, Am. J. Dis. Child. **20**: 405 (Nov.) 1920.

[2] Spiller, W. G., and Griffith, J. P. C.: Amyotonia Congenita: A Clinical and Pathological Study, Tr. Am. Pediat. Soc. **23**: 366, 1911.

[3] Kaumheimer, L.: Zur Pathologie und Klinik der Myatonia Congenita (Oppenheim), Jahrb f. Kinderh., 1913.

DIAGNOSTIC VALUE OF DETERMINING VITAL CAPACITY OF LUNGS OF CHILDREN *

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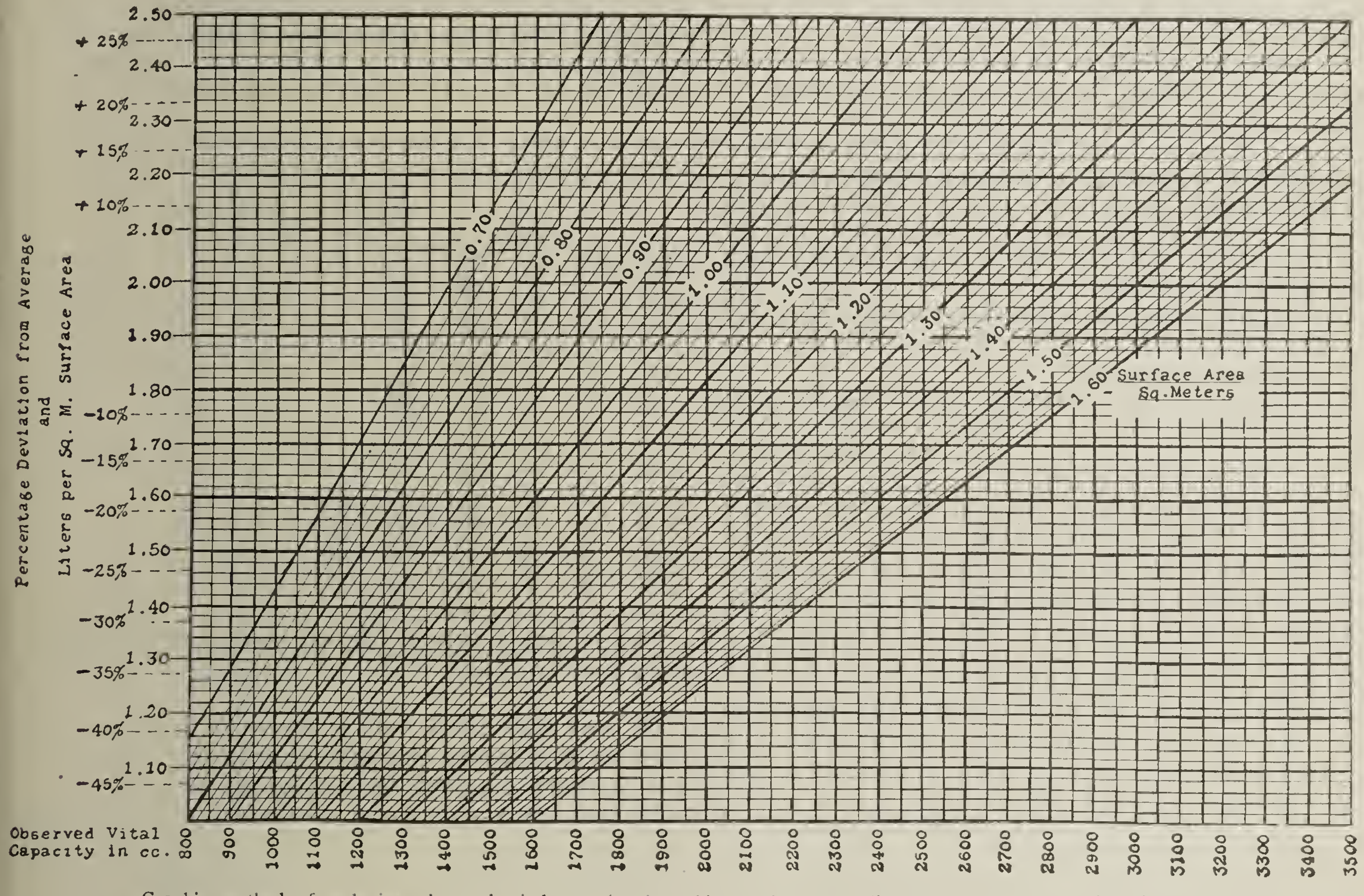
Recent investigations by Dreyer,[1] Peabody [2] and others have confirmed the original observations recorded by Hutchinson [3] in 1846 as to the clinical significance of diminished lung capacity in patients with heart and lung disease. In a previous investigation, we [4] recorded similar observations in children.

The accumulating evidence which shows the clinical importance of determining the vital capacity would indicate that the spirometer may well be added to the increasing armamentarium of instruments of precision in clinical medicine. To establish a final diagnosis, however, it should be remembered that any objective method or test must be correlated with and subordinated to a complete history and physical examination.



Graphic method of reducing observed vital capacity in cubic centimeters to liters per square meter of surface area.

Again, before the determination of vital capacity can be of any practical clinical value, it is essential to have available for the clinician: (1) a standardized method and technic which is not time consuming, and as simple as accuracy permits; (2) an accurate normal standard indicating the normal range, and (3) the evaluation of the various factors which may be expected to influence vital capacity measurement.

The investigation here reported was undertaken with these objects in view, and is limited to a study of children from 6 to 16 years of age, inclusive, supplementing the preliminary investigation.[4] For similar studies in adults the reader is referred to the excellent investigations of Dreyer,[5] Van Slyke,[6] Peabody [7] and West.[8]

METHOD AND TECHNIC

From a comparative study of various types of spirometers in use,[9] we have concluded that a spirometer according to the specifications described by Peabody [10] permits of greater accuracy and is best adapted for use in children. The adjustment of a self-recording dial is of great advantage, since it permits the entire attention to be given to the proper performance of the test.

Contrary to the more or less general opinion, children use the spirometer with surprising ease and intelligence. A child of 6 years, of average mentality, in the majority of instances requires only a single demonstration. The

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[1] Dreyer, Georges: Lancet **2**: 227 (Aug. 9) 1919.

[2] Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, J. A. M. A. **69**: 1954 (Dec. 8) 1917.

[3] Hutchinson, J.: The Capacity of the Lungs, Lancet **1**: 630, 1846.

[4] Wilson, May G., and Edwards, Dayton J.: Standards for Normal Vital Capacity for Children: The Lung Capacity in Certain Intrathoracic Conditions, Am. J. Dis. Child. **22**: 443 (Nov.) 1921.

[5] Dreyer, Georges: The Assessment of Physical Fitness, London, Cassell & Co., 1920.

[6] Van Slyke, D. D., and Lundsgaard, C.: J. Exper. Med. **27**: 65 (Jan.) 1918.

[7] Peabody, F. W., and Wentworth, J. A.: Clinical Studies on Respiration, Arch. Int. Med. **20**: 443 (Sept.) 1917.

[8] West, H. F.: Clinical Studies on Respiration: Comparison of Various Standards for Normal Vital Capacity of Lungs, Arch. Int. Med. **25**: 306 (March) 1920.

[9] Edwards, D. J., and Wilson, May G.: An Analysis of Some of the Factors of Variability in the Vital Capacity Measurement of Children, to be published.

[10] Peabody, F. W.: Clinical Studies on the Respiration, Arch. Int. Med. **20**: 437 (Sept.) 1917.

number of cubic centimeters registered will be within fifty on repeated satisfactory trials. Certain precautions must be observed. Only one inspiration should be taken, and this should be the fullest and deepest inspiration; it should also be completely expelled. Children are likely to try too hard and fix the chest, holding the breath, so that only the air in the upper passages is expelled. Or they are likely to remove the mouthpiece before the chest is completely emptied. If one is on the lookout, these difficulties may be overcome with a little coaching. The following instructions should be given: The child is seated comfortably erect with shoulders back, and is instructed to take the deepest possible inspiration (breath), and to blow it immediately into the spirometer (the mouthpiece being held tightly between the lips), until all the breath is gone (empty feeling). The highest number of cubic centimeters reached in from three to five satisfactory tests is accepted as the vital capacity in cubic centimeters.

In order to establish the normal range of vital capacity for children, it was necessary to obtain a representative group of subjects from various localities of New York City. All subjects selected for measurement were in apparent good health, and were regularly attending public or private schools. Every subject passed a recent routine physical examination, and no one was included with any clinical or auscultatory signs of lung or heart disease.

Our normal standards were obtained from a study of a total of 362 children, 189 boys and 173 girls, from 6 to 16 years of age, inclusive.

We adopted as our standard for relating the vital capacity measurement the method of expressing the vital capacity on the basis of the square meter body surface. In order to eliminate any mathematical calculation, we have devised a chart by which the surface area being found from the height weight formula of Delafield and E. F. Du Bois,[11] the vital capacity in cubic centimeters being measured; the vital capacity may then be read at sight in liters per square meter surface area, as well as in percentage of normal, according to the accompanying chart.

A further analysis of the relation of vital capacity to other physical body measurements [9] has indicated that in practice the correlation to height is as close as that based on the surface area calculation.

In order to evaluate the factors that may be expected to influence vital capacity, such as age, sex, race, weight, height, nutrition, development, activity, social status and environment, we shall first consider the salient characteristics of the individual groups selected for study.

RESULTS OF INVESTIGATION

Public School Group.—This group included the eighty-five subjects, forty-three boys and forty-two girls, from 6 to 16 years of age, from the previous investigation.[4] These children may be considred representative of the average New York City public school child from homes of moderate income, chiefly of Irish and American nativity. The vital capacity measurements were taken during the school session in the months of November and December. A certain number of these subjects had repeated trials extending over a year, at periodic intervals. These findings gave evidence of the constancy of the vital capacity measurement in children, other things being equal. The normal standard obtained for this group was 1.90 liters per square meter surface for boys, and 1.84 liters per square meter surface for girls, giving a combined average of 1.87 liters per square meter surface area. The lowest individual reading observed was 1.41 liters and the highest 2.50 liters per unit surface (Table 1).

Summer Play School Group.[12]—The group investigated consisted of 150 public school children, eighty-five boys and sixty-five girls, from 6 to 16 years of age, attending a summer play school. These children were mainly from poor Italian and Irish homes, representative of the dispensary type of child in New York City. Of this group, 27 per cent. were found to be 10 per cent. or more underweight for height. These children were tested during the months of July and August, each child receiving two or more tests on successive days. A group of thirty was tested again in November, when the children had returned to public school. An analysis of the results was inconclusive. The impression, however, was that there was a tendency for the vital capacity to be less in November than in July. The normal standard obtained for this group was, for boys, 2.02 liters per square meter of surface area, and, for girls, 1.97 liters per square meter of surface area, with a combined average of 2.00 liters per square meter of surface area. The lowest individual reading observed was 1.53 liters, and the highest, 2.51 liters per unit surface (Table 2). In passing, it is interesting to note that these children were very active, spending the greater part of the day outdoors.

TABLE 1.—VITAL CAPACITY OF PUBLIC SCHOOL GROUP *

Case No.	Age, Years	Weight (net) Kg.	Height, Cm.	Liters per Square Meter of Surface		C.c. per Centimeter of Height, C.c.	Vital Capacity, C.c.	Comment
				Boys	Girls			
1 A.	7	27	131	1.97	....	15.0	1,975	
6 B.	8	32	132	2.18	....	17.7	2,350	Athletic
7 B.	8	25	125	1.60	....	12.0	1,500	Colored
19 G.	8	24	127	1.95	....	14.1	1,800	
46 M.	10	28	122	2.09	....	16.5	2,025	
51 O.	10	29	135	1.86	....	14.6	1,975	Active
64 S.	11	24	131	1.95	....	14.3	1,875	
65 S.	12	33	135	2.00	....	16.3	2,200	
42 M.	13	34	149	2.50	....	18.3	2,900	
16 G.	7	19	111	....	1.87	12.5	1,400	
38 M.	7	28	128	....	1.70	13.2	1,700	Overweight
43 M.	9	28	134	....	1.94	14.9	2,000	
61 S.	10	28	128	....	1.87	15.6	2,000	
57 R.	11	31	139	....	1.45	11.5	1,600	
63 S.	12	34	147	....	2.00	16.3	2,400	
74 D.	13	41	152	....	1.74	14.8	2,255	
77 M.	14	46	150	....	2.01	18.3	2,450	
50 O.	14	54	165	....	1.88	18.1	3,000	
15 G.	15	50	158	....	1.62	16.2	2,575	Colored

* Selected from a total of eighty-five cases. Average, forty-four boys, 1.90 liters; forty-one girls, 1.84 liters; combined, 1.87 liters per square meter of surface.

Private School Group.—This group was selected from two private schools in New York City, a representative group of 127 children, sixty-seven boys and sixty girls, from 6 to 16 years of age, inclusive, from homes of the better social strata, and residing in the best sections of the city and suburbs. These children may be considered typical of those met in private practice. Those from 12 to 16 years of age were particularly well developed, and a large percentage were very active in school athletics. The vital capacity measurements were taken during the school session in the months of November and December. The normal standard obtained for boys was 2.01 liters per square meter of surface area, and for girls, 1.81 liters per square meter surface area, giving a combined average of 1.90 liters per square meter of surface area. The lowest individual reading observed was 1.33 liters, and the highest 3.08 liters per unit surface (Table 3).

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[11] Du Bois, Delafield, and Du Bois, E. F.: The Measurement of the Surface Area of Man, Arch. Int. Med. **15**: 868 (June) 1915; A Formula to Estimate the Approximate Surface Area If Height and Weight Be Known, ibid. **17**: 863 (June) 1916 (graphic chart for determining surface area at a glance).

[12] These children were observed at the Model Summer Play School conducted by the Federation for Child Study of the Ethical Culture Society, New York.

TABLE 2.—VITAL CAPACITY OF SUMMER PLAY SCHOOL GROUP *

Case No.	Age, Years	Weight (net) Kg.	Height, Cm.	Liters per Square Meter of Surface: Boys	Liters per Square Meter of Surface: Girls	C.c. per Centimeter of Height, C.c.	Vital Capacity, C.c.	Comment
70	7	21	107	2.00	....	14.0	1,500	
72	7	18	110	1.81	....	12.5	1,375	
84	8	25	127	2.18	....	16.4	2,100	
76	8	23	117	1.88	....	13.6	1,600	
69	8	22	112	2.00	....	16.0	1,600	
79	9	22	125	1.81	....	14.0	1,800	Underweight
78	9	21	122	2.23	....	15.5	1,900	Underweight
65	9	21	120	2.23	....	15.8	1,900	Underweight
52	10	25	123	1.95	....	15.0	1,850	
30	10	36	140	....	1,94	16.4	2,300	
26	10	23	130	....	1.95	14.6	1,800	Underweight
44	11	30	130	....	1.53	12.3	1,600	
31	11	28	132	....	1.74	13.6	1,800	Colored
17	11	47	142	....	1.81	16.1	2,400	Overweight
6	12	59	120	1.92	....	14.5	1,750	Undersize
13	12	30	140	2.00	....	14.2	2,200	Underweight
9	13	29	145	2.02	....	15.5	2,250	Underweight
83	14	38	145	2.20	....	19.5	2,850	
17	14	34	135	2.03	....	15.5	2,300	
4	14	30	135	2.23	....	17.4	2,350	
12	16	43	157	1.98	....	16.1	2,700	
4	13	33	142	....	2.16	17.2	2,450	
5	13	38	142	....	2.11	18.3	2,650	
7	13	35	147	....	1.80	14.4	2,200	
8	12	24	127	....	2.15	15.7	2,000	
63	12	40	140	....	2.09	18.5	2,600	Overweight
45	9	19	116	....	2.00	13.4	1,600	
50	8	22	120	....	1.88	13.3	1,600	
65	8	22	125	....	2.06	14.4	1,800	

* Selected from a total of 150 cases. Average, eighty-five boys, 2.02 liters; sixty-five girls, 1.97 liters; combined average, 2.02 liters per square meter of surface.

TABLE 3.—VITAL CAPACITY OF PRIVATE SCHOOL GROUP *

Case No.	Age, Years	Weight (net) Kg.	Height, Cm.	Liters per Square Meter of Surface: Boys	Liters per Square Meter of Surface: Girls	C.c. per Centimeter of Height, C.c.	Vital Capacity, C.c.	Comment
1 A.	12	42	155	....	2.00	17.4	2,700	
2 A.	10	28	127	....	1.82	13.3	1,800	
5 B.	12	50	155	1.69	1.54	14.5	2,250	Overweight
6 B.	7	23	122	1.84	....	13.5	1,650	
9 C.	11	42	146	....	1.85	16.4	2,400	Overweight
11 C.	10	28	138	....	1.82	13.7	1,900	Underweight
15 C.	9	20	142	2.12	....	14.1	2,000	Underweight
25 J.	8	20	116	1.60	....	11.2	1,300	
13 C.	7	26	128	1.88	....	14.0	1,500	
39W.	9	37	137	....	1.62	13.8	1,900	Overweight
1 g.	8	33	137	....	1.69	13.5	1,850	
2 b.	9	22	129	1.96	....	13.3	1,725	Underweight
8 b.	10	40	150	1.75	....	16.0	2,400	Overweight
9 g.	11	27	142	....	1.95	14.3	2,025	
12 b.	11	33	147	2.41	....	18.8	2,775	Underweight
28 b.	13	35	145	2.33	....	19.3	2,800	
12 g.	13	41	157	....	2.38	20.0	3,250	Underweight
16 g.	14	46	157	....	2.12	19.1	3,000	
19 g.	14	69	173	....	1.63	16.7	2,900	Overweight
29 b.	14	42	160	2.25	....	19.2	3,125	
30 b.	14	56	170	2.50	....	24.1	4,100	Athlete
31 b.	14	54	167	2.85	....	27.0	4,600	Athlete
33 b.	15	51	167	3.21	....	29.0	5,000	Athlete
35 b.	15	44	162	2.09	....	18.5	3,000	
24 g.	15	66	175	....	1.83	13.2	3,300	Overweight
28 g.	15	69	178	....	2.21	23.0	4,100	Athlete
36 g.	16	46	150	....	2.04	18.6	2,800	
39 g.	16	54	159	....	2.13	20.6	3,300	
37 b.	16	51	162	3.08	....	28.0	3,225	
10 g.	11	36	137	....	1.40	11.6	1,600	

* Selected from a total of 127 cases. Average, sixty boys, 2.01 liters; sixty-seven girls, 1.81 liters; combined average, 1.90 liters per square meter of surface.

Group of Colored Children.—We have also observed, but not included in our normal totals, thirty-eight average normal colored children, from 8 to 14 years of age. These children were very well developed, of good nutrition, and had passed a recent routine physical examination. The lowest individual reading observed was 1.33 liters, and the highest, 2.09 liters per unit surface. The normal average obtained for the group was 1.57 liters per square meter of surface area, a value strikingly below that obtained for any of the other groups. These findings suggest a possible racial factor. In passing, it is important to remember that this race is particularly subject to tuberculosis. The significance of this apparent diminished lung capacity will be further considered (Table 4).

TABLE 4.—VITAL CAPACITY OF GROUP OF COLORED CHILDREN *

Case No.	Age	Liters per Square Meter of Surface: Boys	Liters per Square Meter of Surface: Girls
1 G.	7	1.48	....
2 J.	10	1.52	....
3 R.	14	2.09	....
4 M.	9	....	1.36
5 M.	11	....	1.33
6 G.	9	1.40	....
7 S.	9	1.60	....
8 C.	11	1.47	....
9 G.	9	1.74	....
10 L.	12	1.66	....
12 G.	12	1.40	....
11 H.	11	1.66	....
13 D.	15	1.89	....
14 B.	13	1.88	....
15 P.	11	....	1.48
16 G.	11	....	1.62
17 C.	10	....	1.51
18 M.	10	....	1.56
19 E.	10	....	1.54
20 P.	8	....	1.68
21 D.	10	....	1.64
22 F.	11	....	1.59
23 H.	6	....	1.47
24 H.	8	1.70	....
25 H.	11	....	1.68
26 H.	10	....	1.46
27 R.	9	....	1.52
28 R.	11	....	1.51
29 A.	11	....	1.81
30 M.	8	....	1.46
31 D.	9	....	1.54
32 T.	7	1.51	....
33 L.	13	....	1.51
34 L.	12	....	1.60
35 H.	12	....	1.43
36 S.	11	....	1.38
37 M.	9	....	1.42
38 D.	9	....	1.66

* The average of 38 subjects was: boys, 1.64 liters; girls, 1.53 liters; combined average, 1.57 liters per square meter of surface.

Normal Range of Vital Capacity.—A study of the combined vital capacity measurements of a representative group of 362 average normal children, from 6 to 16 years of age, reveals a combined average of 1.93 liters per square meter of surface area, with a value of 1.99 liters for boys, and 1.88 liters for girls. Allowing a 10 per cent. plus or minus deviation, we have a normal range of 1.74 liters per square meter of surface area, and 2.12 liters per square meter of surface area, 60 per cent. coming within the plus or minus deviation. There was a tendency for the younger children to give values at the lower limits of the normal range, and older children at the upper (Table 5).

We have also obtained the average value of 15.5 c.c. for each centimeter in height from the relation of vital capacity to a unit of body height. A comparative analysis of the influence on vital capacity of weight for height revealed, for forty-two children 10 per cent. or more underweight for height, an average value of 2.08 liters per square meter surface area; while the average value obtained for nineteen children 10 per cent. or more overweight for height gave an average of 1.75 liters per square meter surface area. However, relating the vital capacity measurement to a unit of body height, rather than surface area, normal values were revealed, indicating that the apparent reduction exhibited is simply a difference in the surface area method when applied to subjects overweight for height.

COMMENT

The evaluation of the various factors expected to influence vital capacity measurement in average normal children may first best be considered in a comparison of the individual groups observed. A comparison of the normal standards obtained for the respective groups shows little appreciable difference between children from public and private schools, particularly in children under 12 years of age. One may therefore conclude that poverty, environment and social status, with the ensuing advantages and disadvantages, do not seem to influence the lung capacity of children growing up in these respective environments.

The average vital capacity obtained for the play school group of 2.00 liters per square meter of surface area is greater than for either of the other groups. However, it must be remembered that this group was tested in the summer, when the children were particularly active.

Observations of the influence of underweight and overweight for height on the vital capacity measurement revealed, on an analysis of children that were 10 per cent. underweight, no reduction in vital capacity; while a similar analysis of children 10 per cent. or more overweight for height revealed an apparent reduction of vital capacity, as related to a unit of body surface.

Of interest are the high values obtained in boys and girls approaching adult size and development. These values were within the normal range obtained by West in adults. Some of these subjects who took a particularly active part in school athletics revealed values from 10 to 15 per cent. greater than the average normal established (Table 3).

It is, however, the low values observed in individual subjects in all the groups studied, and particularly noted in the colored group, that is of paramount importance. Are we to consider these low values to be the normal incidence in a study of average normal children, or may there be another explanation?

TABLE 5.—A COMPARISON OF VITAL CAPACITY MEASUREMENT OF INDIVIDUAL GROUPS OF A TOTAL OF THREE HUNDRED AND SIXTY-TWO CHILDREN

Group	No. of Boys	No. of Girls	Vital Capacity		Liters per Sq. Meter	10% Deviation	
			Boys	Girls	Combined	Minus	Plus
Public school..	43	42	1.90	1.84	1.87	23	3
Play school....	85	65	2.02	1.97	2.00	20	34
Private school	60	67	2.01	1.81	1.90	20	2
Total, 362....	189	173	1.99	1.88	1.93	89 (25%)	57 (15%)

We have indicated in a preliminary investigation[4] the possible significance of extensive tracheobronchial adenopathy as accounting for the individual low values obtained in that study. This problem has been further investigated, and will be the subject of a separate communication. We may, however, state that we believe that a reduction of vital capacity of more than 15 per cent. of the average normal established should signal a child out for more careful physical examination and roentgenographic study.

In order fully to appreciate the practical value of a normal vital capacity measurement, we have included a summary of the various pulmonary and cardiac conditions that we have found to reveal a diminished lung capacity in children. Repeated vital capacity measurements in these conditions were found to vary with the clinical course of the disease, and to be of prognostic value. It is evident from this that a vital capacity measurement, once recorded on routine physical examination, might later prove of great value (Table 6).

TABLE 6.—SUMMARY OF CLINICAL CONDITIONS THAT REVEAL DIMINISHED VITAL CAPACITY IN CHILDREN[4]

Diagnosis	Reduction of Normal Vital Capacity
Tracheobronchial adenopathy	From 20 to 30 per cent.
Acute bronchitis	From 10 to 20 per cent.
Bronchial asthma (between attacks)	From 0 to 30 per cent.
Emphysema	From 10 to 15 per cent.
Pleurisy with effusion	From 30 to 40 per cent.
Lobar pneumonia	From 40 to 50 per cent.
Pulmonary tuberculosis	From 30 to 50 per cent.
Organic heart disease:	
Class 1: Normal exercise tolerance	From 0 to 3 per cent.
Class 2: Diminished exercise tolerance	From 20 to 35 per cent.
Class 3: Cardiac failure	From 35 to 80 per cent.

SUMMARY

1. A simple method and technic was adopted for the determination of vital capacity in children from 6 to 16 years of age.

2. A normal standard of 1.93 liters per square meter of surface area, allowing a plus or minus 10 per cent. deviation (giving a normal range of from 1.74 to 2.12 liters) has been established from a study of a representative group of 362 children.

3. The vital capacity may be read off a chart in liters per square meter of surface area, and in percentage of normal at sight.

4. A normal standard of 15.5 c.c. for each centimeter in height has also been indicated as another method of relating the vital capacity measurement.

5. An analysis of some of the factors expected to influence the vital capacity measurement has revealed that:

(*a*) Boys show a vital capacity 6 per cent. greater than girls.

(*b*) Extremes of age give values at the lower and higher limits of the normal range established.

(*c*) The colored race shows a definitely lowered vital capacity.

(*d*) Poverty, environment and social status do not seem appreciably to influence the lung capacity.

(*e*) Activity and athletics tend to increase the vital capacity.

(*f*) Malnutrition and underweight for height do not lower the vital capacity.

(*g*) Overweight for height reveals an apparent reduction of vital capacity per square meter of surface area.

(*h*) Vital capacity measurement is a fairly constant measurement.

(*i*) A reduction of vital capacity measurement of 15 per cent. or more from the average normal standard should signal the child out for further physical and roentgenographic examination.

CONCLUSIONS

1. Vital capacity measurements should be recorded on routine physical examination.

2. The determination of vital capacity of the lungs in children is indicated as a practical and valuable diagnostic measure.

616 Madison Avenue.

CAROTINOID PIGMENTATION OF THE SKIN RESULTING FROM A VEGETARIAN DIET *

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Hess and Myers[1] described the occurrence of a yellow discoloration of the skin of the body, with the presence of carotin in the blood of children fed on a diet containing carrots. Head and Johnson[2] reported a similar occurrence in an adult who had eaten considerable quantities of carrots. The latter authors referred exhaustively to the articles concerning the carotin pigmentation of the skin that had appeared in English and German literature.

In Japanese literature we have no description of a yellow pigmentation of the skin resulting from a diet containing carrots; but the fact that a vegetarian diet may cause a yellow discoloration of the skin has long been known among physicians in Japan. Baelz[3] (1896) was the first to call attention to the golden-yellow discoloration of the skin ("aurantiasis cutis") developing as the result of eating large quantities of "mikan" (*Citrus nobilis* Lour., var. *microcarpa* Hassk., a kind of orange produced in Japan). He noted that the palms of the hands and the soles of the feet are tinted usually more heavily than other portions of the body, and he supposed that the horny layer of the epidermis, which is thicker in the above-mentioned portions of the body than others, may have a specific affinity for the yellow pigment of mikan present in the circulating blood.

A number of physicians have reported similar cases (Arima, 1896; Sano, 1900; Watanabe, Sato, Morita, 1903; Nagahama, 1904; Shishido, 1905; Oishi, 1906; Ono, 1906; Dohi, 1910). Nagahama and Shishido stated that an intense pigmentation of the palms of the hands and the soles of the feet is dependent partly on intense skin secretion occurring in these sites. Dohi and Ono examined microscopically a section of the skin showing aurantiasis, and they found only the horny layer of the epidermis to be tinted yellowish. Ishikawa, Okada and Yamada (1915) reported that orange-yellow pigmentation of the skin similar to that resulting from eating mikan had been observed in some people in Hokkaido who had been eating heavily of squashes. Kashida (1917) reported a case of aurantiasis cutis resulting from eating much laver. Prof. K. Miura[4] has stated that orange-yellow pigmentation of the skin, which had been described under the term aurantiasis cutis of Baelz, is due to coloring of the subcutaneous adipose tissue with carotin present in mikan, squash, laver, etc., owing to the affinity of fats for carotinoids, and he noted that the term "carotinosis" is more nearly exact than "aurantiasis" to express the true nature of this pigmentation. Oi (1918) reported three cases of aurantiasis cutis resulting from the liberal use of cucumbers produced in Formosa.

I have recently observed more than thirty-five cases showing a yellow discoloration of the skin after the eating of unusual amounts of squash. Here in Hokkaido, the northern island of Japan, where the yield of rice is not so great as in the mainland, farmers are in the habit of eating large amounts of bald barley, potatoes, legumes, squashes, etc., as substitutes for rice.[5] In the fall they usually eat squash, which is produced on their own farms, as freely as if it were the principal food of the season. Since the beginning of October and most frequently toward the end of the month I have noticed marked yellow discoloration of the skin in some of the patients who came up from the country to visit me. I have never encountered any similar cases in the city inhabitants. The majority of those who showed the squash pigmentation of the skin were farmers, aged from 20 to 40, working daily so hard on the farm that large amounts of carbohydrates were needed as a source of energy. The occurrence of the squash pigmentation of the skin, however, is not confined to farmers of these ages. Any one who eats heartily of squash may show a yellow discoloration of the skin.[6] An idiot, aged 3 years, and a man, aged 50, following a sedentary occupation and suffering from general paralysis, have shown the skin pigmentation; both of them had been eating large amounts of squash because of an abnormal appetite for it.

Having observed carefully all these cases of squash pigmentation of the skin, I have ascertained that this pigmentation is the same as that described in English and German literature as being caused by the liberal use of carrots in the diet. Some years ago at Professor Miura's medical clinic in Tokyo, I observed some cases of mikan pigmentation of the skin. And now I affirm that there is no difference in any respect between the skin pigmentation due to squash and that due to mikan. The palms of the hands, the soles of the feet, the forearms, and the nasolabial folds were more heavily tinted yellow than other parts of the body, whereas the sclerae were not affected. The color varied from a canary yellow to a deep orange gold. The condition may be easily differentiated from jaundice by the difference in the localization of the discoloration: The pigments of squash or mikan color most intensely such portions of the body as would be least stained in the case of jaundice.[7] Furthermore, in the case of squash or mikan pigmentation there is no itching of the skin, general malaise, fever, etc. When squash is removed from the daily diet, the yellow pigmentation of the skin disappears slowly. It is of interest here to note that the palate resumes its normal color most slowly, the yellow discoloration being observed here even several weeks after the disappearance of the pigmentation of the palms of the hands or the soles of the feet.

Squashes (*Cucurbita maxima*), as usually eaten by the people in Hokkaido, contain a large quantity of carotinoids. These are probably absorbed easily from the small intestine. I was able to demonstrate in vitro that these pigments dissolve readily in human duodenal fluid kept at the temperature of 37 C., though not in the least in gastric juice. The pigments thus absorbed from the intestine circulate in the blood. In some

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[*] From the Department of Internal Medicine, Sapporo City Hospital.

[1] Hess, A. F., and Myers, V. C.: Carotinemia, a New Clinical Picture, J. A. M. A. **73**: 1743 (Dec. 6) 1919.

[2] Head, G. D., and Johnson, R. A.: Carotinemia, Report of a Case in an Adult, Arch. Int. Med. **18**: 286 (Sept.) 1921.

[3] Bibliographic articles written in Japanese are not recorded here.

[4] Miura, K.: Carotin als Ursache von Aurantiasis Cutis (Baelz), Festschrift gewidmet Keizo Dohi, Tokyo, January, 1917, p. 203.

[5] The details are given by Morimoto, K.: The Standard of Living in Japan, Johns Hopkins University Studies in Historical and Political Science, Baltimore, 1918.

[6] Dr. Morimoto, professor of economics in the Hokkaido Imperial University, told me that, when, in October, he visited several primary schools in the farming districts of Hokkaido to investigate school lunches eaten by children, he found that the majority of the children had an intense yellow pigmentation of the skin due to the large amount of squash consumed daily.

[7] Only the palate, however, is tinted, though not intensely, in both cases.

cases of mikan or squash pigmentation I could ascertain the presence of carotin in the blood drawn by venipuncture. The blood; when allowed to coagulate, gave the serum a gold yellow—more intense in color by far than that of normal blood—which, when examined spectroscopically, showed absorption bands identical with those of carotin. The carotinoids have not been found in the urine excreted by man showing mikan or squash pigmentation of the skin—in such quantity as can be determined by any usual methods. Whether or not these pigments would be excreted into the intestines we do not know. The largest quantity of carotinoids present in the blood seems to be excreted by the skin secretions. The secretion of the sebaceous gland contains much fat. Sweat, even that of the palms of the hands or the soles of the feet, the skin of which portions of the body lacks the sebaceous gland, contains some fat. And, as generally known, fats have a great affinity for the carotinoids. The intense pigmentation of the nasolabial folds, frequently observed, may be due to intense secretion of the sebaceous gland in these sites.

As to the histologic question with respect to what part of the skin is pigmented to cause the yellow discoloration of the skin, as clinically observed, Dohi and Ono, who had examined microscopically a section of the yellow-pigmented human skin in a case of aurantiasis cutis, stated that only the horny layer of the epidermis was found to be tinted diffusely yellowish. The subcutaneous adipose tissue would be actually colored by carotinoids,[8] but, so far as I am aware, the yellow discoloration of the skin, as is observed clinically from the outside of the body, is chiefly due to the coloring of the horny layer of the epidermis, and not that of the layers lying deeper. It is of interest here to refer to the findings of Palmer and Kempster.[9] In the section of the highly pigmented shank skin of fowls, they found microscopically the granules of carotinoids in the corium, along blood capillaries, and most intensely accumulated in the malpighian layer. In a case presenting a marked squash pigmentation I could remove a part of the skin of the highly pigmented palm of the hand—the epidermis that had been separated from the corium as the result of combustio bullosa. After the epidermis had been removed, the corium appeared by no means yellowish, while the epidermis removed showed the yellow coloring of its horny layer. Microscopically examined, the horny layer of the epidermis was seen to be tinted diffusely yellowish, no yellow pigment granules being found. The malpighian layer was free from pigmentation. The fact that the carotinoids color the horny layer of the epidermis, in the case of the carotinoid pigmentation of the skin in human subjects, may account for the intense discoloration of the palms of the hands and the soles of the feet—more intense than in other portions of the body—where the horny layer is thickest.

In regard to the affinity for the fat-staining substances of the horny layer of the human epidermis, Stoehr stated in his textbook that paraeleidin is colored black as well as ordinary fats, but only after a long-continued action of osmic acid. Martinotti demonstrated by the aid of the chromchrysoidin reaction the presence of certain special kinds of fat in the human epidermis, keratohyalin, eleidin, etc., and noted the significance of fats in the biologic process of producing horny substances. It is evident that in the cells of the horny layer of the human epidermis there exist certain kinds of fat that are colored by fat-staining dyes slowly but steadily, and, once colored, maintain the color for a long while. In the case of carotinoid pigmentation of the skin it is highly probable that such kinds of fat present in the epidermis are colored by the carotinoids which are excreted by the skin secretions. An obscure point, however, is left yet undecided: whether the carotinoids coloring the human epidermis are carried out solely by the skin secretions, or further directly through the tissue of the corium from its blood capillaries.

Kaupe stated that there is some variation in individuals with respect to the ease with which the carrot pigmentation may develop. Klose noted that well-nourished children were prone to the same affection. Having observed many cases of squash pigmentation, I can scarcely confirm Klose's findings. Individual variation in the intensity of skin secretion or in the thickness of the epidermis rather than the nutritional condition of the body seemed to determine the tendency for the skin pigmentation of the subjects following a squash diet.

PRESSURE ULNAR PALSY

ULNAR PALSY DUE TO PRESSURE OF A PLASTER-OF-PARIS BODY CAST *

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CHICAGO

The justification for reporting this case lies in the fact that it is the only one I have encountered, and I have been unable to find a similar case recorded in the literature.

REPORT OF CASE

N. H., a woman, aged 26, entered St. Luke's Hospital in the service of Dr. John Lincoln Porter. A diagnosis of ostearthritis of the upper lumbar spine was made, and after several days' preliminary treatment a plaster-of-Paris body jacket (not including the shoulders) was applied (Fig. 1). This was removed after six weeks, and another was applied. The patient was allowed to go home. After having worn the second cast with no untoward effects for three weeks, she telephoned to say that her right hand felt weak and numb, and that it had been so for about seven days. She had no feeling in the thumb and fourth and fifth fingers. She was in the habit of sleeping with the arms over the head, and awakened one morning with the edge of the cast pressing against her right arm, i. e., she was lying on that arm. When she was seen the next morning, a typical ulnar pressure palsy was discovered. There was flexion of the fourth and fifth fingers (Fig. 2); inability to abduct and adduct the fifth finger; inability to move the middle finger laterally; there was present the prehensile sign of Froment, i. e., inability to grasp a sheet of paper with the tips of the thumb and index finger (Fig. 3); atrophy of the thenar eminence, and anesthesia of the fourth and fifth fingers. The cast was trimmed under the right axilla, and the patient was referred to Miss Lillian Klein for massage, active and passive movements, and reeducation. After eight days she reported for this treatment, and had six sessions during eighteen days, with great improvement. Two months from the date of onset of the trouble she was completely recovered.

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[8] The discoloration of the palate might presumably be due to the yellow coloring of the adipose tissue underlying a thin mucous membrane.

[9] Palmer, L. S., and Kempster, H. L.: The Influence of Specific Feeds and Certain Pigments on the Color of the Egg Yolk and Body Fat of Fowls, J. Biol. Chem. **39**: 331 (Sept.) 1919.

* Owing to lack of space, this article is abbreviated in The Journal by the omission of an illustration. The complete article appears in the author's reprints.

MOVEMENTS AFFECTED IN PARALYSIS OF ULNAR NERVE

In complete paralysis of the ulnar nerve, flexion of the wrist is impaired, and in flexion the hand is tilted to the radial side owing to loss of the flexor carpi ulnaris. This loss is fairly compensated by the palmaris longus. Paralysis of the muscles may be detected by failure to feel the tendon contract at its point of insertion at the wrist. Flexion of the little and ring fingers is greatly impaired. Some flexion is possible through the flexor digitorum sublimis, supplied by the median. But flexion of the terminal phalanges is impossible, owing to paralysis of the portion of the flexor digitorum profundus destined for those fingers.

The normal function of the interossei is adduction and abduction of the fingers, flexion of the fingers at the metacarpophalangeal joints, and extension at the interphalangeal joints. In ulnar paralysis, abduction and adduction of the fingers is lost. This should be tested on a flat surface to avoid any confusion with the long flexors and extensors, which also have some of this action.

There is hyperextension of the fingers at the metacarpophlangeal joints due to loss of the interossei (which flex those joints) and the unopposed action of the long extensors of the fingers. There is flexion at the interphalangeal joints, due also to paralysis of the interossei (which extend them) and the unopposed action of the flexors. This hyperextension of the metacarpophalangeal joints and flexion of the interphalangeal joints are both more marked for the little and ring fingers than for the middle and index fingers. This is due to the sparing of the two lateral lumbricales, which are supplied by the median.

Adduction of the thumb is lost through paralysis of the adductor pollicis. This movement also should be tested with the hand on a flat surface, to prevent confusion with a somewhat similar action of the long flexor of the thumb.

LOCALIZATION OF ULNAR NERVE FIBERS

Marie and Meige state that it is probable that the fibers for the flexor carpi ulnaris tend to group themselves toward the inner side, and fibers for the flexors of the fourth and fifth fingers in the postero-external region. According to clinical observation, it would appear that those fibers innervating the interossei, hypothenar and adductor pollicis muscles are in the anterior and internal regions of the nerve.

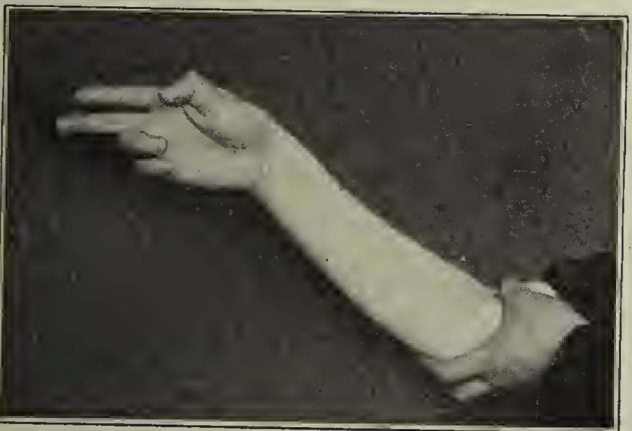

Fig. 2.—Typical ulnar "griffe," hand of accoucheur, described by Froment and Babinski.

Déjerine and Mouzon localize the fibers in the region of the arm as follows: Internally, superficially, the cutaneous branches, those to the hypothenar eminence, then those to the interossei (those to the external are farthest out) at the back, the nerves for the adductor pollicis and flexor brevis pollicis. Externally, the nerves to the flexor capi ulnaris and flexor profundis.

TESTS FOR RECOVERY FROM ULNAR PARALYSIS

Pitres gives two tests:

1. With the palm flat on the table and fingers apart, the patient should draw the middle finger inward and outward, i. e., abduction and adduction.

2. He should scratch the top of the table with the nail of little finger without moving the wrist.

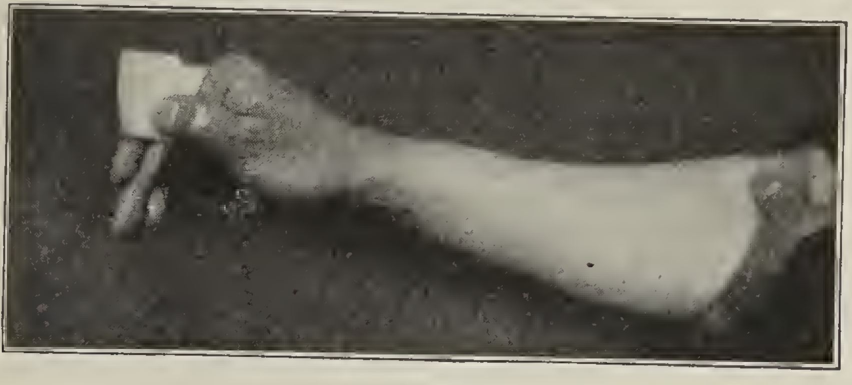

Fig. 3.—Prehensile sign of Froment.

PATHOLOGY

The pathology in the case herein reported is undoubtedly a physiologic interruption of continuity of the ulnar nerve due to compression by the edge of the plaster-of-Paris jacket.

7 West Madison Street.

CONGENITAL DIVERTICULUM OF THE URINARY BLADDER

REPORT OF CASE

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Although not rare in urologic practice, diverticula of the urinary bladder are relatively uncommon. Most of those observed are associated with urinary obstruction, either actual or potential, so that cases evidently congenital, coming to light during adult life, are sufficiently rare to warrant reporting.

REPORT OF CASE

History.—W. H. J., a man, aged 32, white, married, telephone lineman, referred by Dr. J. J. McCarthy, Oct. 31, 1921, stated that he had a constant desire to urinate; he passed a small amount of urine followed by blood, both fresh and clotted; he had considerable urgency, some dysuria and nocturnal frequency of eight times. This condition had existed for one week. He believed that he had lost 6 or 8 pounds during the last three weeks. He had always been obliged to urinate frequently but, until recently, this had not been sufficiently marked to be considered of importance. He had married in 1907; he had healthy children aged 12 and 13 years. He had gonorrhea in March, 1919, treated by injections of mercurochrome-220 soluble and an occasional irrigation of silver nitrate. He had bilateral epididymitis. He was discharged as cured, June 14, 1919.

Examination.—When I saw him, the external genitals were normal. The voided urine contained pus and red blood cells;

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* Read before the Medical Society of the District of Columbia, Jan. 25, 1922.

there was no residual urine on catheterization. The bladder washed free from pus readily; its capacity was about 30 c.c. No. 24 F. acorn bougies passed into the bladder readily, with no abnormal hang on introduction or withdrawal. Neither kidney was palpable. There was slight rigidity but no pain on pressure over the right superior lumbar triangle. A tentative diagnosis of bladder tumor or urinary tuberculosis was made. Cystoscopy, November 2, revealed distinct inflammation of the trigon. The opening of a diverticulum was seen lateral to and above the right ureteral orifice, with cloudy fluid seeping lazily from it; the diameter of the orifice was estimated to be 8 mm. The right ureteral orifice was normal and admitted a No. 6 F. catheter easily. The left ureteral orifice was edematous; it admitted a No. 6 F. catheter easily. There was a scant amount of bloody urine from each side (the blood probably being due to traumatism).

Phenolsulphonephthalein, administered intravenously, appeared in two minutes on each side. The total amount in thirty minutes was 8 per cent. on each side. Urea from the right side was 1.4 per cent.; left side, 1.8 per cent. Separate estimation of the kidney function was made to exclude grave unilateral kidney infection, and to this end, on account of the blood in the specimens, urea estimation and appearance time of the phenolsulphonephthalein rather than the total dye excretion, were taken as indexes.

A cystogram, November 3, revealed a diverticulum about 7 cm. in diameter between the bladder and the right side of the bony pelvis.

Operation and Result.—November 5, the bladder findings at the previous cystoscopy were confirmed. A No. 6 F. catheter was introduced into the right ureter for 15 cm. The bladder was opened by a median suprapubic incision. The left index finger was inserted into the diverticulum through the bladder opening; the sac was exposed extravesically and separated from the tissues to the right of and behind the bladder; a part of the sac lay between the bladder and the right ureter. The bladder margin of the neck of the sac was excised, and the opening thus made was closed by interrupted catgut sutures; a continuous catgut suture was placed to cover the interrupted layer. The incision in the vertex of the bladder was closed with interrupted catgut sutures, and a drainage tube was placed at its upper end. The prevesical space and the site of the diverticulum were drained by cigaret drains, and the muscle and skin wounds were closed with catgut and silkworm gut in the usual way.

Examination of the excised tissue by Dr. Lester Neuman revealed elements of all coats of the bladder wall.

Recovery from the operation was uneventful; the drains were removed on the seventh day, the bladder tube on the eighth day. The patient was out of bed on the twelfth day, and suprapubic drainage ceased on the fourteenth day. A cystogram, November 26, gave a normal bladder shadow.

Jan. 16, 1922, seventy-one days after operation, there was no diurnal or nocturnal frequency, and no urgency or dysuria. The urine was clear and free from albumin. The suprapubic scar was normal.

COMMENT

This case is described as congenital because there was nothing in the history to indicate prolonged voluntary retention, nor was there demonstrable urinary obstruction, either prostatic or urethral, or the results of such obstruction—bladder trabeculation—on examination or at operation.

Diverticula are pouches that open into the cavity of the bladder, the wall of the pouch being continuous with that of the bladder itself. They are varied as to size, may be single or multiple, and are located in any part of the bladder. Diverticula at the apex of the bladder are generally classed as instances of patent urachus rather than of diverticulum proper.

The trend of opinion as regards cause is that, just as in inguinal hernia, all are the result of a congenital deficiency; that they may be congenital is shown by their presence in early life. That they may result from urethral obstruction is shown by numerous cases associated with prostatism and urethral stricture.

Diverticula produce no symptom that is pathognomonic, their presence usually being detected at necropsy, at operation or in routine investigation of the bladder in urinary disease of various types. As early as 1791, Chopart [1] diagnosed the disease and confirmed his diagnosis by postmortem findings; his diagnosis was based on the presence, just below the umbilicus, of a tumor which was present after urination and which would disappear on pressure over it, the disappearance being accompanied by refilling of the bladder and subsequent urination. Until cystoscopy became a practical diagnostic procedure, few diverticula were found except at necropsy and at operation, generally for inguinal hernia, though the diagnosis is reported to have been made at times, evidently with rare clinical skill.

Through the use of the cystoscope, early diagnosis has become more common and operative relief more frequent. This diagnostic method is not, however, sufficient to cover all cases, since [2] the orifice may not be within range of the observation lens or, if it is contractile, it is conceivable that it may be closed at the time of examination, and overlooked or not recognized. Even when the orifice can be seen, cystoscopy will give no idea of the size, shape and general relations of the sac, so that cystograms are necessary to complete the demonstration. Since the shadow of the diverticulum may be covered by that cast from the bladder itself, simple cystograms may not suffice; in such a case, contrast cystograms, made by draining the bladder of opaque medium quickly, distending it with air and taking a picture before the diverticulum has had time to empty its contents into the bladder, may outline the sac satisfactorily.[2]

The complications that may occur in this condition may be considered as they affect the diverticulum itself and as they apply to other organs. The diverticulum may be the seat of any disease to which the bladder itself is liable; thus, inflammation is common and stone and tumors have been found within them, while perforation with urinary extravasation and extension of infection into the perivesical tissues or even peritoneal cavity has occurred. Since inflammation is common in the sac and this generally involves the bladder, the remote complications are those of a cystitis.

In congenital cases it is believed that the train of events is somewhat as follows: Given a diverticulum at birth, the person notes no urinary abnormality that he considers important until dilatation and infection of the sac occurs; since the diverticulum has to empty itself against the pressure in the bladder, its wall eventually dilates so that urine is retained within it and becomes infected, with resultant inflammation; this leads to cystitis, which causes symptoms sufficient to attract the attention of the patient. If it is not recognized and removed, the train of conditions following neglected cystitis ensue.

Except in diverticula of small size and manifestly due to urethral obstruction, it is difficult to think of cure short of operative treatment of the sac. Enlargement of the orifice by dilation or by slitting the wall of both bladder and sac and suturing the incision thus made so as to throw the cavity of the sac into that of the bladder may be all that can be done if a ureter opens into the diverticulum and cannot be saved in excision of the sac or properly implanted.

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[1] Chopart: Traité des maladies des voies urinaires, 1791, p. 52; quoted by Englisch, J.: Arch. f. klin. Chir. **73**: 1, 1904.

[2] Hinman, F.: Surg., Gynec. & Obst. **29**: 150 (Aug.) 1919.

Excision may be practiced by either the extravesical or intravesical route. Since the bladder should be opened for exploration and must be drained for a variable time afterward, it would seem that ease of examination and manipulation of the sac would compensate for the additional opening in the bladder and would give good end-results. Incisions have been mainly median suprapubic, although semilunar, perineal and sacral have been used. Depending on the relations and condition of the sac, excision of it may be a simple or complex procedure. Czerny,[3] in his case, the first of operative removal found reported, introduced his index finger into the sac through the bladder to assist in enucleation. Young[4] draws the diverticulum into the bladder by means of a glass tube coupled to a suction pump. Lower[5] packs the cavity with gauze, thus rendering it a solid or semisolid tumor for aid in enucleation. Of the procedures suggested that of introducing the finger into the sac seems the simplest and to take care most efficiently of all the objects to be sought during enucleation.

Geraghty[6] has described treatment of diverticula by intravesical excision of the mucous membrane and obliteration of the sac by suture of the orifice and tube drainage, claiming for this procedure facility in removal of the sac, elimination of necessity for plastic ureteral surgery, and applicability to diverticula practically inoperable by other methods.

Needless to say, appropriate measures should be taken to relieve any urinary obstruction present, and the bladder should be drained by a convenient method until the wound at the site of the diverticulum has healed.

The immediate prognosis is good, but the end-result will depend on the nature of any complications present, kidney infection, peritonitis, involvement of the ureter, etc.

Medical Science Building.

PERINEAL DISLOCATION OF THE HIP

WITH AVULSION OF THE GREATER TUBEROSITY

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MEMPHIS, TENN.

As a rule, traumatic dislocation of the hip joint can be reduced by well known manipulations, and only on very rare occasions is open surgery required. In one case recently reduction was found impossible by the usual methods, and only by a spacious incision could it be accomplished.

CASE REPORT

J. P. P., Jr., a boy, aged 11, while riding his bicycle, July 10, 1921, was struck from the rear by a street car and was dragged 50 feet (15 meters) beneath the front guard. Immediately he was rushed to the Baptist Hospital. The right thigh was abducted with extreme internal rotation. A mass could be felt within the perineum anterior to the anus, over which the skin was tense and discolored. Obviously, there existed a perineal dislocation. A roentgenogram revealed the head of the right femur within the perineum and the greater trochanter avulsed well above its normal location. When reduction was attempted, we found the head wedged and locked against the inner aspect of the tuber ischii. Every conceivable movement, using the femur as a lever, could not change the position, and only by a direct push with the base of the hand were we able to release the head, after which it glided upward on the dorsum of the ilium. We again tried various maneuvers for a reduction of a traumatic dorsal dislocation of the hip, employed an unusually strong traction table, and even used the routine procedures for reduction of congenital dislocation. The head would either glide by the acetabulum to its former position in the perineum, or on the dorsum of the ilium. If in the perineum, we would again experience great difficulty in dislodging. At the end of one hour we did not feel that it was safe, for the patient, to continue further efforts. He showed mild shock and was placed in bed with simple extension and hot packs. On the following day the temperature rose to 103, with swelling and ecchymosis from the umbilicus to the right knee.

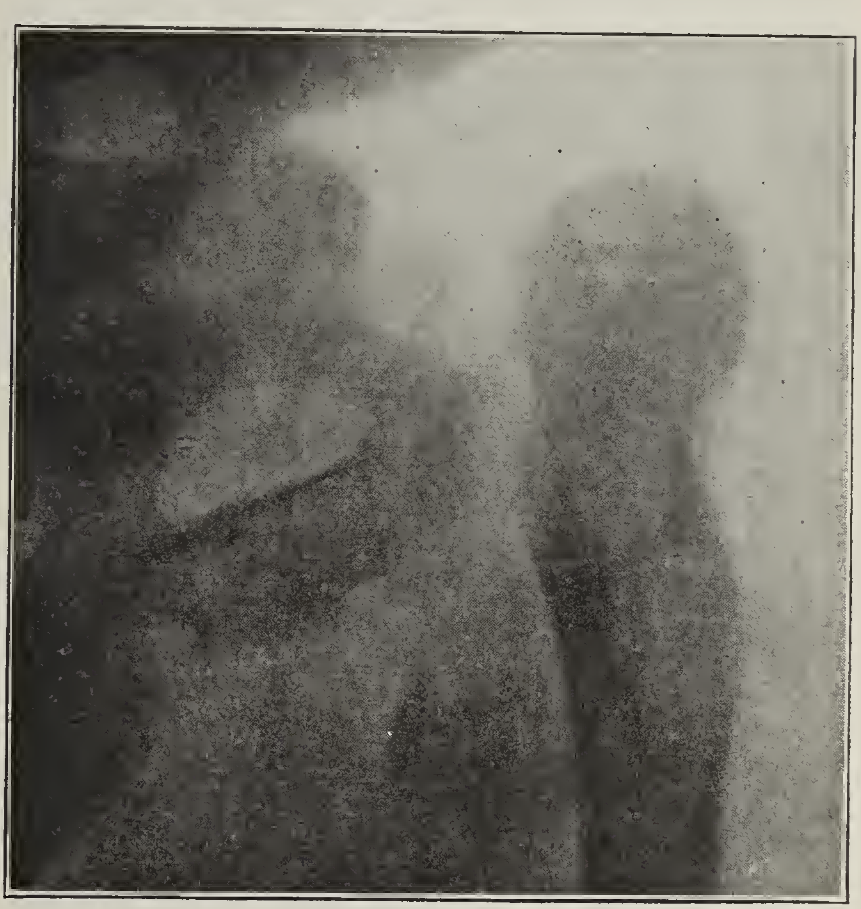

Fig. 1.—Head of femur within perineum, with avulsed greater trochanter above.

On the twelfth day, as the temperature did not range over 99.75, pulse 130, we decided to do an open reduction. The condition of the patient was such that time was a considerable factor. The Kocher U incision was employed. The head of the femur was on the dorsum of the ilium in a mass of torn muscle and clotted blood. The acetabulum was obscured by dense fascia, rendering its location uncertain and separating the head from the socket. This heavy sheet of fascia was attached above to the avulsed trochanter, while below continuous with the elevated periosteum of the femur. In other words, it was the tendinous aponeurosis and insertion of the external rotators (gluteals). This structure was also coiled about the neck and shaft from above downward, behind the neck and then forward over the anterior aspect of the neck and shaft, so that any attempt at reduction would draw tensely the sheet of fascia over the acetabulum. A transverse section was made and the band uncoiled, after which there was free access to the acetabulum. With a bone skid reduction was accomplished, and the trochanter stitched to the shaft with chromic catgut. All structures closed automatically. At present, four months after operation, there is scarcely a perceptible limp, with about 60 per cent. normal motion. A perfect recovery can readily be assured.

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[3] Czerny: Beitr. z. klin. Chir. **19**: 247, 1896.
[4] Young, H. H.: Surg., Gynec. & Obst. **26**: 125 (Feb.) 1918.
[5] Lower, W. E.: Diverticula of Urinary Bladder, Arch. Surg. **3**: 38 (July) 1921.
[6] Geraghty, J.: South. M. J. **15**: 54 (Jan.) 1922.

One could hardly determine the exact mechanism of such an injury, but we concluded, from the manner in which the heavy aponeurotic band was twisted about the femur, that there was first a dorsal dislocation with further extreme outward rotation, which caused avulsion of the trochanter, after which there was an inward rotary movement which coiled the heavy aponeurosis about the neck and shaft prior to perineal lodgment. This tense sheet or band was obviously the factor in tenaciously holding the head against the inner aspect of the tuber ischii.

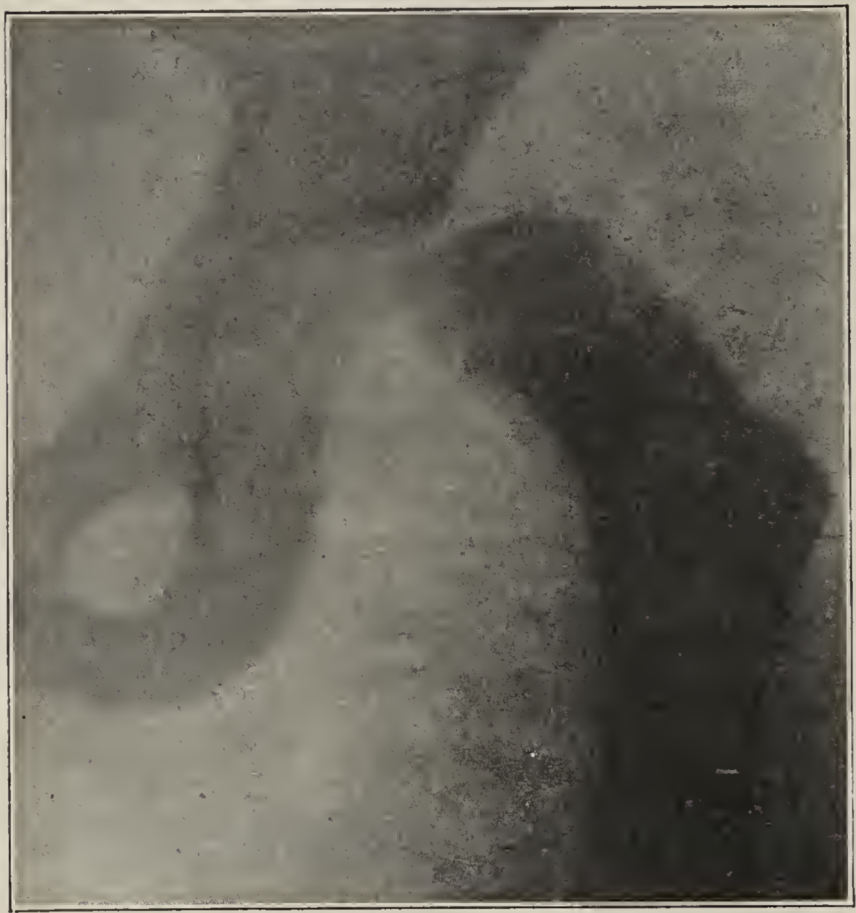

Fig. 2.—Dorsal dislocation after dislodgment of head in perineum.

This case illustrates how futile were our efforts to reduce and, from the excellent result, that possibly it might be wise to resort to open reduction in certain instances after moderate attempts have failed.

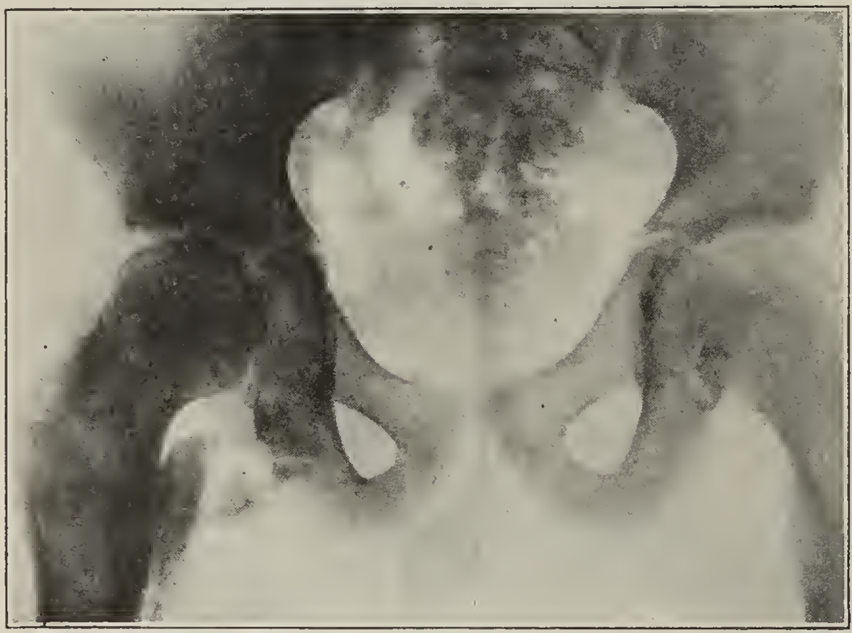

Fig. 3.—Condition six months later: reduction with callus from stripped periosteum.

869 Madison Avenue.

Complement Fixation in Goiter.—The blood of some patients who show symptoms of exophthalmic goiter binds complement in the presence of an antigen made from normal thyroid glands.—J. Koopman, *Proc. New York Path. Soc.* **21**:56 (Jan.-May) 1921.

THE ELECTROGASTROGRAM AND WHAT IT SHOWS *

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SAN FRANCISCO

After several years spent in devising special apparatus and overcoming technical difficulties, I am now getting good records of the action currents in different parts of the stomach and bowels of laboratory animals. The first report of this work has already been published.[1] The records in that article show that the electrograms obtained by leading off from various parts of the stomach and bowel to an exceedingly sensitive d'Arsonval galvanometer resemble closely the kymographic records obtained by attaching light levers to those parts or to bits of muscle excised from them. This resemblance is striking, as regards not only the rate of contraction but also the general form and amplitude of the curve.

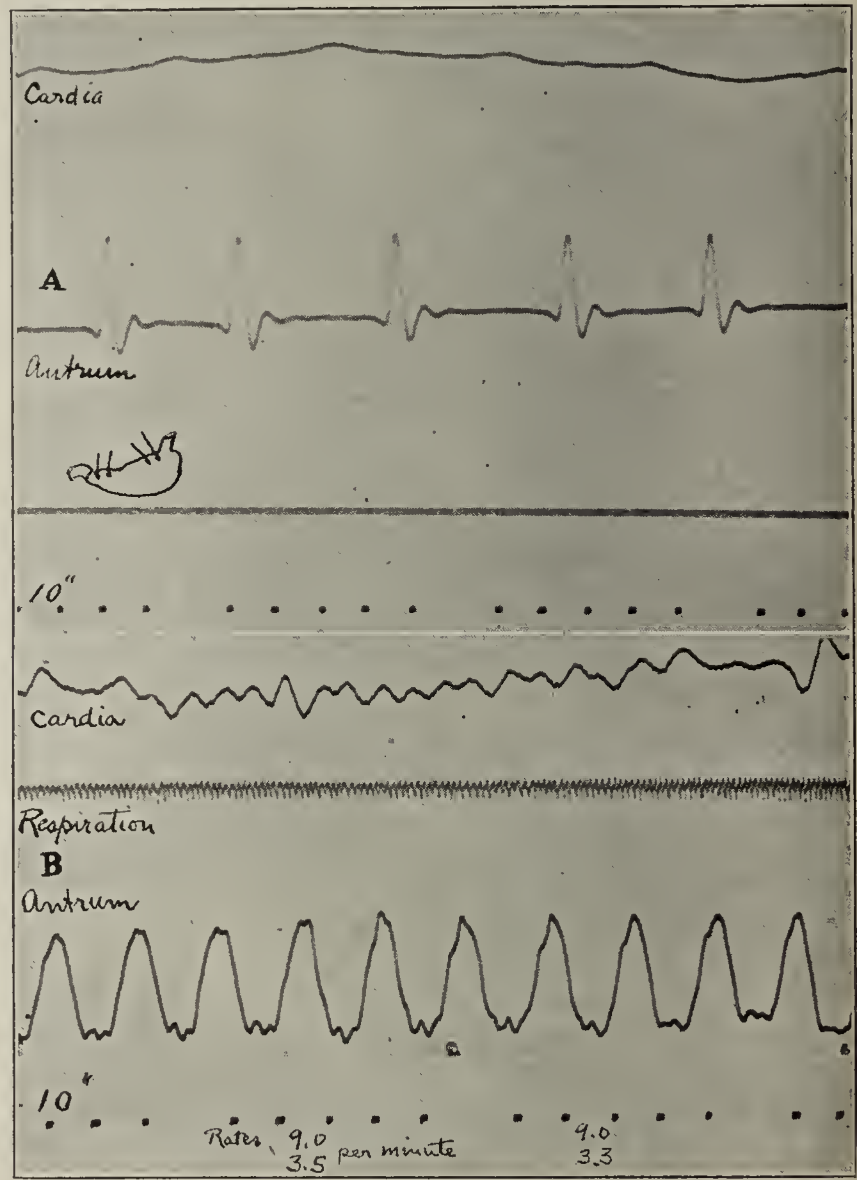

Fig. 1.—*A*, simultaneous electrogastrograms from the excised stomach of a cat placed in a bath of warm oxygenated Locke's solution. The small diagram shows the location of the electrodes. In this and in all subsequent graphs an upward movement indicates a negativity of the orad electrode. Note smaller waves between the main ones on both records. *B*, simultaneous electrogastrograms from the stomach of a cat under urethane anesthesia and with the abdomen opened under warm Locke's solution. There appears to be a complete dissociation between the activities of the two parts of the stomach. The time record represents ten seconds, with a twenty second interval every minute.

We have, then, at our disposal a new method with which to study the activities of the digestive tract. One of its great advantages is that records can now be obtained at all times even from stomachs and bowels which seem to be motionless. Hitherto, physiologists have often been hampered by the visceral paralysis which results from opening the abdomen, but it is seen now that the resultant splanchnic stimulation can abolish the visible contractions without stopping the rhythmic currents. To use a mechanical simile, the underlying chemical processes seem to go on after the nerves have thrown out a sort of "clutch" between them and the contractile substances in the muscle.

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* From the George Williams Hooper Foundation for Medical Research, and the Department of Medicine, University of California Medical School.

[1] Alvarez, W. C., and Mahoney, L. J.: Am. J. Physiol. **58**: 476-493 (Jan.) 1922.

THE GASTRIC PACEMAKER

Naturally, the first question to be asked of the new method was: Where is the gastric pacemaker and just how do the waves run over the stomach? Although, as often happens, the work has been more fruitful in new puzzles than in answers to the original one, certain observations may briefly be reported at this time.

Previous work had made me feel that the pacemaker would probably be found on the lesser curvature near the cardia, because the muscle excised from that part shows a greater rhythmicity than that of any other part of the stomach. Furthermore, it had seemed to me most probable that the waves which we see arising here and there about the middle of the stomach have really come as ripples from this pacemaker. The electrogastrograms now show clearly that this is often the case, and that definite electrical disturbances are traveling over the fundus when no movement of the muscle can be detected even with a magnifying glass. With suitable apparatus, however, I have been able to show that the muscle does move, usually through distances of only a few thousandths of an inch. Sometimes, as in the irritable stomachs of persons with duodenal ulcers, these waves beginning near the cardia are so deep that we can easily see them with the roentgen ray and without magnifying devices.

DIFFERENT TYPES OF PERISTALSIS

If all the gastric waves began at one point and traveled evenly to the pylorus, the problem would be relatively simple; but, unfortunately, the records, and we already have a hundred yards of them, show all sorts of irregularities. There are shifts of the pacemaker, sometimes even to the pyloric region; there are contractions appearing here and there which do not seem to set up any traveling disturbances; there are waves which travel half way across the stomach only to be blocked suddenly at some point (Fig. 2 *B*); and there are at times systoles of the stomach as a whole. Confusion arises not only on account of the number of these different types of gastric peristalsis but also on account of the sudden changes from one type to the other.

The problem of analyzing the records is complicated still further by the fact that the rate of travel of the waves down the stomach seems to vary markedly from time to time. One set of waves may take seven seconds each to go from the cardia to the antrum, while shortly afterward another set may take twenty-one seconds each. This irregularity, together with the fact that two or three waves are often traveling over the stomach at the same time, makes it very difficult to identify and correlate the deflections which appear in records taken simultaneously from different parts of the organ.

DISSOCIATION OF FUNDUS AND PARS PYLORICA

Still more puzzling and surprising is the discovery that the body of the stomach and the pyloric antrum can contract with separate rhythms, much as the dissociated auricle and ventricle do after complete heart-block. I had not been getting electrogastrograms long before I found a number in which the cardiac record showed from three to four times as many deflections as the antral (Fig. 1 *B*). Now, although my previous work had led me to look on the stomach as a combined crop and gizzard, that is, two organs with different functions and different types of muscle, I was not prepared for quite so much dissociation of activity. Furthermore, it had never occurred to me that twelve contractions a minute could appear in a stomach over which three waves a minute are passing. Hence, I felt the need for checking, as soon as possible, the accuracy of the electrogastrogram with simple mechanical methods. That is now being done in my laboratory:

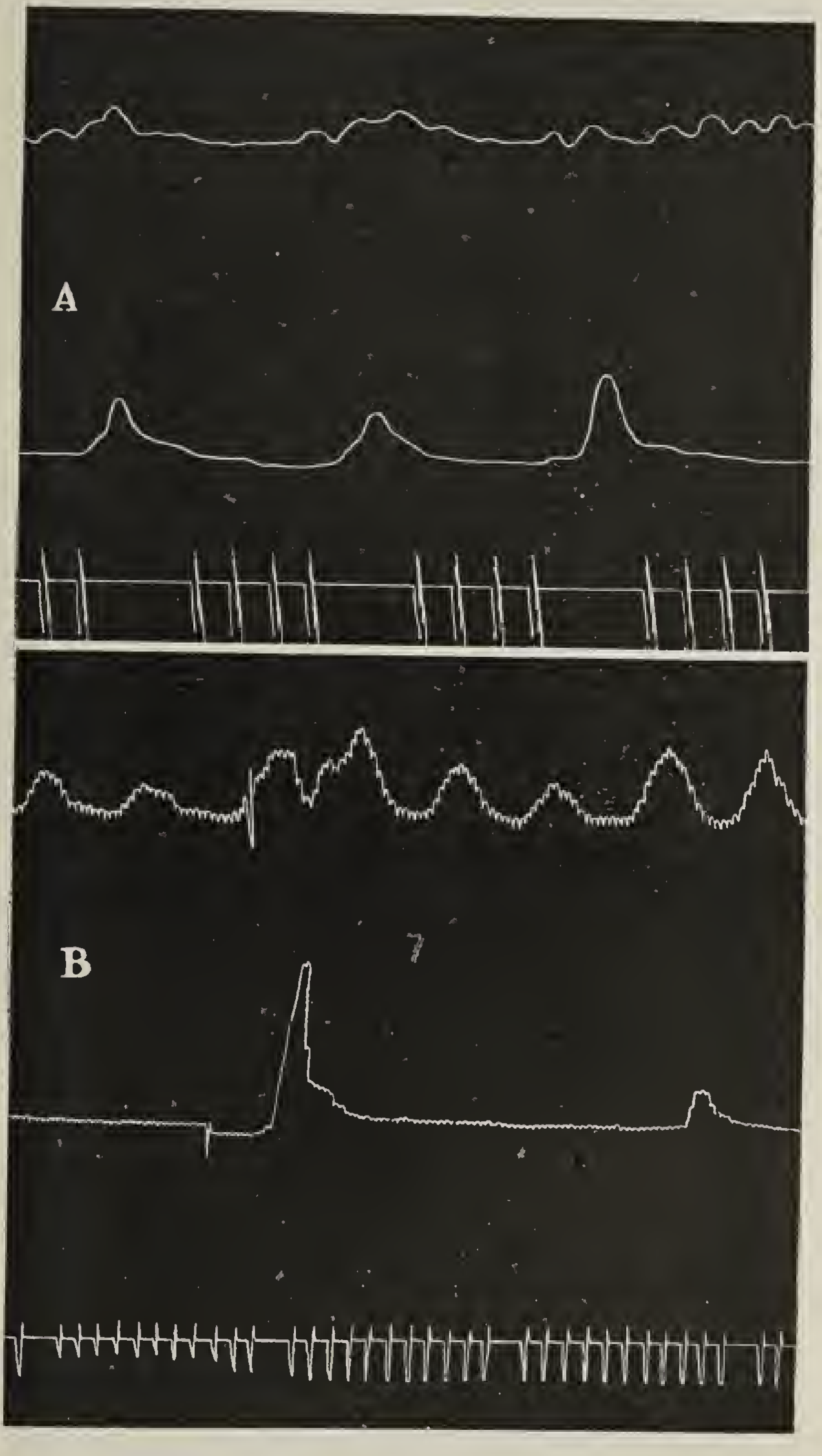

Fig. 2.—*A*, record obtained by fastening light levers to the peritoneal surface of the excised stomach of a dog, kept in warm Locke's solution. Note in the upper, fundus, record small frequent waves superimposed upon the larger ones. The lower record is from the pyloric antrum. *B*, record obtained by fastening delicate enterographs to the peritoneal coat of a sickly rabbit's stomach. The animal was under urethane and had its abdomen opened in a large tank of warm Locke's solution. The upper record is from the preantrum; the lower, from the antrum a centimeter away. Note the block with occasional escape. The small waves on the preantral record are respiratory in origin. The time record represents five seconds.

simultaneous kymographic records are being obtained from different portions of the stomach, and I can already say that there is no doubt about the dissociation at times between the activities of the fundus and the pyloric antrum, or about the ability of the gastric muscle to respond to two or more rhythms at the same time (Fig. 2 *A*). When we come to think of it, this should not be surprising, because we know that rush waves travel down the small intestine from time to time over muscle which is not only contracting from ten to twenty times a minute, but is responding constantly to marked tonus changes. Incidentally, the work of Palugyay,[2] who screened the stomachs of men and women lying head downward at an angle of 45 degrees, suggests strongly that the small, frequent fundus waves are present sometimes in man.

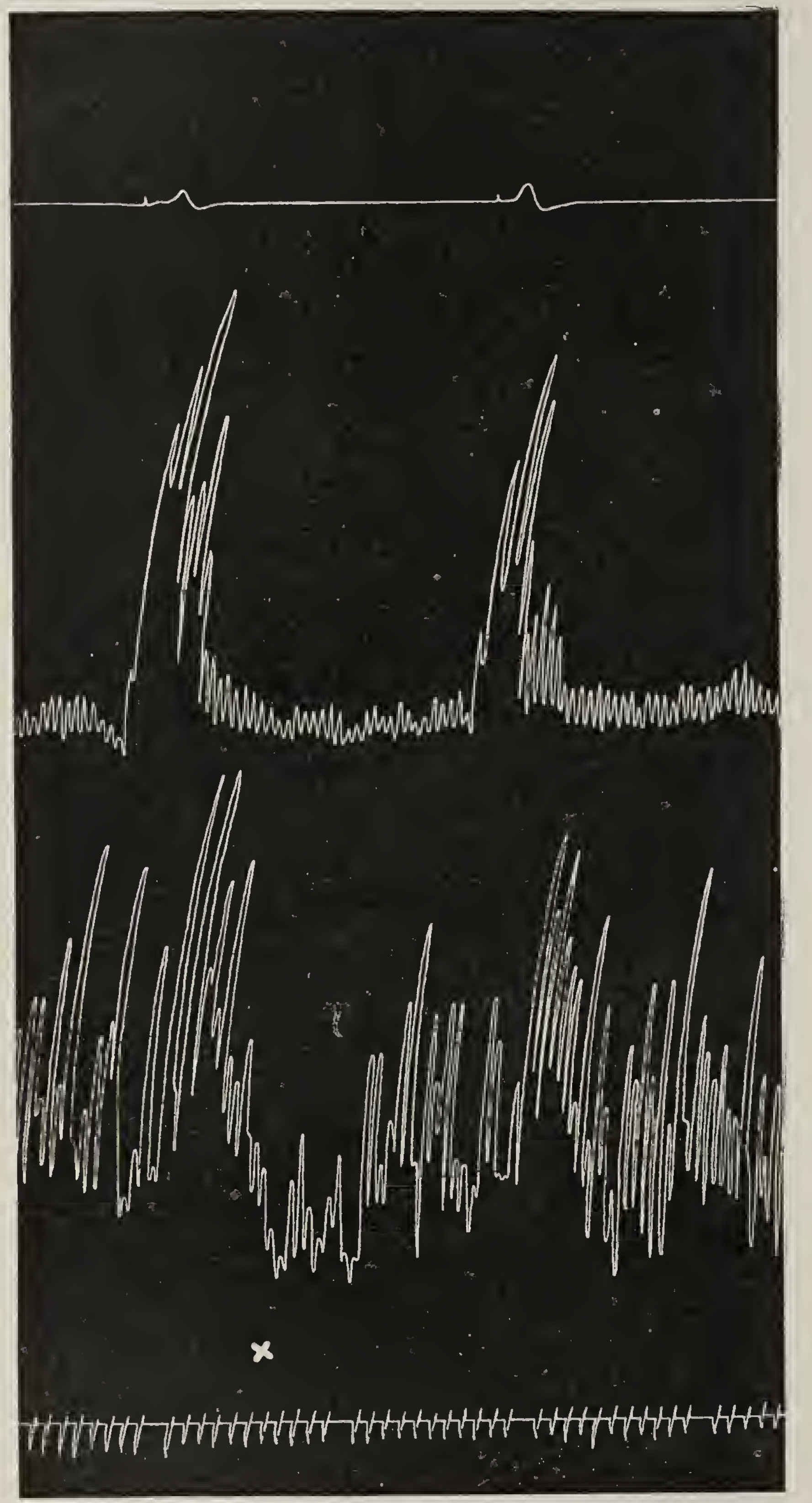

Fig. 3.—Mechanical records obtained by fastening enterographs to the peritoneal surface of the pyloric antrum, first portion of the duodenum, and duodenum 20 cm. below the pylorus. The animal was a rabbit, under urethane, and with the abdomen opened under Locke's solution. Note the large tone changes in the duodenum when gastric waves approach the pylorus. At *x*, the drop in tone shows that a rush wave has just passed on its way down the bowel.

PYLORIC BLOCK NOT ABSOLUTE

Another interesting point brought out with the new methods is that the stoppage of the gastric waves at the pylorus is not so complete as has hitherto been thought. We can see now that the approach of a wave in the pars pylorica is the signal for the appearance of a strong tonus wave in the first portion of the duodenum (Fig. 3). If this can be shown to occur also in man, we shall take a step forward in explaining the production of the pain in duodenal ulcer.

The new records show, moreover, that the rush waves down the bowel always originate in a gastric contraction which, as we have seen, raises the tone of the duodenum. Furthermore, the needs of the bowel seem often to affect the intensity of gastric peristalsis. Thus, when the duodenum has been contracting actively for some time, trying to send a rush wave down the bowel, the stomach seems often to come to its aid with one or two powerful waves. At other times, a sudden increase of activity in the lower bowel will temporarily stop the gastric waves.

I have long suspected from watching peristalsis in man and animals that some sort of disturbance travels well out ahead of the visible wave, and I can now show it clearly in the records. This observation may have considerable importance because, when the pylorus is a little more irritable than usual, its latent period is likely to be shortened. The muscle there will respond out of its turn, and its contraction will block the main part of the wave before that can bring force to bear on the sphincter. I believe that we can in this way account for the failure of some stomachs to empty properly in spite of good waves and the absence of any visible obstruction at the pylorus.

THE HUMAN ELECTROGASTROGRAM

I had not been working long with the galvanometers before I began experimenting to see what could be done on man. I first proved to my satisfaction that good electrogastrograms could be obtained by applying nonpolarizable electrodes to the shaved abdominal walls of rabbits. The apparatus was then used on a little old woman whose abdominal wall was so thin that her gastric peristalsis was easily visible. This was very convenient, as we could see where to place the electrodes and we could also make a mark on the record every time a wave passed by. A glance at Figure 4 will show that although one of the records, derived presumably from the pars pylorica, has three deflections a minute, corresponding to the gastric waves, the other one has from eleven to twelve deflections superimposed upon waves corresponding to the visible ones. This record looks so much like many of those obtained from the cardiac region in cats and dogs that I strongly suspect that its deflections are due to small contractions in the upper part of the stomach. My efforts to get similar records from other persons with better muscled abdominal walls have not been so successful. In some, no deflections were seen, while in others only a respiratory record could be obtained. Better results may later be obtained by amplifying the delicate currents.

Some records are now being obtained with an intragastric electrode which can be introduced very much like an Einhorn tube. As modifications are still being made in this instrument, I will reserve its description for a later paper. Suffice it to say that it is a small calomel electrode, 4 mm. in diameter and 2 cm. long. With this apparatus, we can record the gastric contractions of patients with achlorhydria but, as I feared, we have had no success with persons with normal acidities. The voltage produced by slight differences in the concentration of acid bathing the instrument are so great that I doubt very much whether anything can ever be done along these lines.

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[2] Palugyay, J.: Arch. f. d. ges. Physiol. 187: 232, 1921.

COMMENT

We see, then, that a study of the action currents of the stomach and bowel has already brought to light a number of interesting things. Still better, perhaps, it has offered us a number of puzzles for solution and has caused us to ask many questions. The future alone will tell us how common the irregular types of peristalsis are in man, and whether they are normal variations or definitely pathologic.

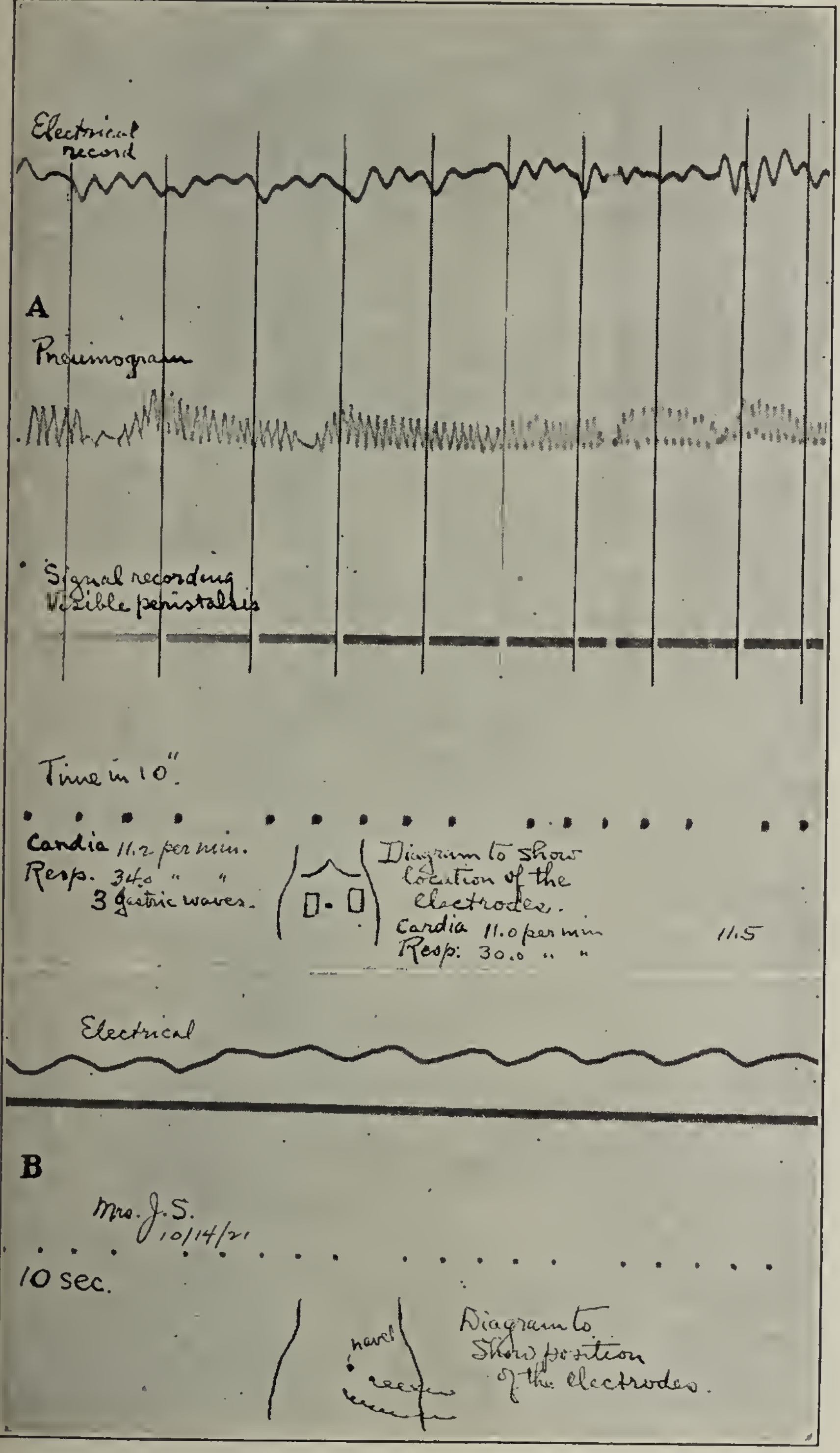

Fig. 4.—Human electrogastrogram. *A*, the small, frequent fundus type of deflection superimposed upon larger deflections which correspond in time with the visible gastric waves. *B*, the antral type of deflection. The small diagrams show the location of the electrodes on the abdomen.

Perhaps the most important service such studies are likely to render the clinician is the demonstration, first, that certain peculiar types of peristalsis exist; secondly, that they are to be looked for under certain conditions; and, thirdly, that they give rise to certain symptoms. To illustrate, we may some day be able to say that the desire to belch is associated with one type of peristalsis; the relief obtained by taking a little soda is due to the institution of another type; the pain of ulcer to yet another type, and so on, just as the heart specialist, after long experience with the electrocardiograph, can now make shrewd diagnosis of fibrillation, heart block, and so forth, on the basis of the symptoms or the feel of the pulse. Since writing this little prophecy, I have been delighted to see a start made toward its fulfilment in the excellent paper of Reynolds and McClure.[3] They have been screening patients with ulcer for hours at a time, watching to see what happens when pain comes and goes, and they have observed that the onset of such pain often coincides with a change from one type of peristalsis to another. These differences in type have been observed by roentgenographers for years, but no one has taken the time to correlate them with symptoms as Reynolds and McClure have done.

SUMMARY

The first steps have been taken in working out the technic of electrogastrography. The records show that many of the waves which seem to begin in the lower third of the stomach have come as shallow ripples from a pace-making region near the cardia. There are, however, a number of different types of gastric peristalsis, and the stomach can change suddenly from one to another.

At times, there seems to be a dissociation between the activities of the fundus and the pars pylorica. The fundus can contract several times to the antrum's once. Small, frequent waves are sometimes superimposed upon the larger, slower ones. These findings have been confirmed with mechanical recording devices.

Marked blockage of the waves has been observed often in the preantral region.

The conduction time of waves traveling down the stomach shows wide variation.

Marked tonus changes occur in the duodenum coincident with the arrival of gastric waves at the pylorus. This observation may throw light on the production of pain in duodenal ulcer.

The peristaltic rushes down the bowel are shown to originate in gastric waves.

The first human electrogastrograms are here presented.

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[3] Reynolds, Lawrence, and McClure, C. W.: Motor Phenomena Occurring in Normal Stomachs, in the Presence of Peptic Ulcer and Its Pain, as Observed Fluoroscopically, Arch. Int. Med. **29**: 1 (Jan.) 1922.

Psychotherapy in Hiccup.—Recently a boy, aged 8 years, while undergoing the desquamating period of scarlatina was attacked with a sharp, rapid, violent hiccup. It persisted several days, and by preventing sleep, caused alarm. Since it proved defiant to the methods usually employed for treating this symptom, I decided to try a psychotherapeutic measure. It was strongly impressed on the patient's mind that the ingestion of a teaspoonful of red medicine, resulting by mixing two drugs, would effect a cure. He was also told that any color other than red would be noneffective. Then, phenolphthalein and magnesia magma were combined in the patient's presence, resulting in the formation of the red medicine. The boy opened his eyes wide, and eagerly drank a dose of the mixture with the result that the singultus stopped immediately and did not recur.—D. J. CALICCHIO, Cambridge, Mass.

INFECTIOUS JAUNDICE OCCURRING IN NEW YORK STATE

PRELIMINARY REPORT OF AN INVESTIGATION, WITH REPORT OF A CASE OF ACCIDENTAL INFECTION OF THE HUMAN SUBJECT WITH LEPTOSPIRA ICTEROCHAEMORRHAGIAE FROM THE RAT *

AUGUSTUS WADSWORTH, M.D.; H. VIRGINIA LANGWORTHY; F. CONSTANCE STEWART; ANNA C. MOORE, and MARION B. COLEMAN
ALBANY, N. Y.

During the summer and fall of 1921, an increasing number of outbreaks of what appeared to be the infectious or epidemic type of jaundice were reported to the state department of health. Physicians throughout the state were notified of the fact and requested to report all such cases. Approximately 300 cases were brought to light, occurring in groups of from three or four to fifty or more.

Dr. G. H. Williams, sanitary supervisor, reported twenty-six cases at Cooperstown, which perhaps give the most conclusive evidence of the infectious or epidemic nature of the outbreak there. He reported fourteen cases among schoolchildren, and four additional cases in the immediate families of these children. January 3, one markedly jaundiced patient was removed to the hospital. January 11, two nurses, and the following day a third nurse, all of whom had cared for the patient, developed characteristic symptoms. A week later a fourth nurse who had cared for two of the others developed symptoms, and on the same day the assistant superintendent of nurses, who had been in touch with all jaundice cases and had had slight symptoms for a week previous, became more severely ill. On the 26th and 28th, two other nurses who had been in contact with cases on the 17th and 18th, and on the 6th, 7th and 18th, respectively, became ill. Then, January 30, the eighth nurse, who had been in charge of the original case, abruptly developed symptoms. All of these hospital cases were marked by great prostation, headache, nausea, vomiting and chills. Leukocyte counts varied from 7,000 to 16,000. In five of the eight nurses, fever was definitely absent. Of the twenty-six cases reported by Dr. Williams, fever is recorded as an early symptom in fifteen; bile-colored urine is recorded in twelve, and clay-colored stools in six.

In order to study the infectious nature of the disease, it was necessary to bring the laboratory into close touch with the early cases. This was done by sending members of the staff to the bedside, and establishing centers for investigation in the local laboratories. Both early and late cases were studied. Five hundred and ten laboratory examinations of specimens from 132 cases were made, special attention being directed to the search for the spirochete described by Inada and Ido,[1] and more fully by Noguchi,[2] and designated by him as *Leptospira icterohaemorrhagiae*. But specimens were also examined for the influenza bacillus and the groups of organisms associated with enteric disease.

Fifteen blood cultures were made and found to be either sterile or badly contaminated. The blood counts revealed nothing of significance. One hundred and one specimens were examined for organisms of the enteric disease group. The dysentery bacillus was isolated from one case, and the typhoid bacillus from a fatal case of intestinal hemorrhage. Thirty-two blood specimens failed to give significant agglutination with the enteric bacteria. The influenza bacillus was found occasionally, and in moderate numbers, in specimens from the nose and throat. Eighty-seven specimens of urine and thirty-six specimens of blood were inoculated into guinea-pigs without showing any evidence of the presence of *Leptospira icterohaemorrhagiae*.

The Pfeiffer test of the blood serum from forty-seven cases, which was made with nonvirulent cultures of Noguchi strains, Group 8, Group 30 and American No. 2, was in every case negative, and the animals failed to develop infection with these strains of *Leptospira icterohaemorrhagiae*. Recently, Pfeiffer tests with seventeen other specimens were made with virulent strains isolated from rats secured in Albany with similar negative results, save that the animals died. A large number of specimens of citrated blood were also inoculated into special mediums for the cultivation of *Leptospira icterohaemorrhagiae* without success.

In conjunction with the clinical investigation, an effort was made to obtain rats from the localities where the epidemics had been reported. One hundred and twenty-eight rats from various parts of the state were examined. Suspensions of the kidneys, ground with sterile glass in a mortar with salt solution, were injected into the peritoneum of guinea-pigs. In twenty-two of the rats coming from Albany, organisms showing the characteristics of *Leptospira icterohaemorrhagiae* were found, and the guinea-pigs developed jaundice. Of these twenty-two strains of *Leptospira icterohaemorrhagiae,* thirteen are now under cultivation for further study, while nine have been lost.

The difficulty encountered by the laboratory in getting in touch with cases during the earliest stages of the disease has proved a great obstacle to the adequate study of the human infections. In the present investigation, the delay incident to reporting cases and assigning members of the staff to them has made it practically impossible to study the disease during the first two or three days of febrile reaction, when the effort to find the inciting micro-organism is most likely to be successful.

Late in the investigation, a member of the laboratory staff developed an infection while working with *Leptospira icterohaemorrhagiae,* which gave an opportunity for a most interesting study of the virulence in man of one of these strains from the rat:

Friday, February 3, while preparing for the inoculation of a rabbit with a virulent culture[3] from a rat, one of the workers pricked her finger with the needle of the syringe containing the culture for inoculation. The rabbit was inoculated, and the worker cleaned and disinfected her wound. She had no symptoms of illness until the evening of Friday, February 10, when the febrile reaction started, together with general malaise, nausea and vomiting. The febrile reaction lasted ten days, the temperature rising to 104 on the third day, with remissions to 100 or 101, and persisted, rising to 103 and remitting, then gradually falling and reaching normal on the tenth day. Prostration was marked and increasingly so as the febrile reaction continued, but there was no material disturbance of the pulse rate-temperature ratio. The pulse rate fluctuated between 110 and 130 during the height of the febrile reaction. There were no signs of involvement of any of the organs, no bile or casts in the urine, and no significant albuminuria. There was no jaundice beyond a possible brief tinging of the sclerae. There was moderate leukocytosis at the beginning. In fact, the diagnosis was quite obscure until cultures of the leptospira were obtained.[4]

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* From the Division of Laboratories and Research, New York State Department of Health.

[1] Inada, R.; Ido, Y.; Hoki, R.; Kaneko, R., and Ito, H.: The Etiology, Mode of Infection and Specific Therapy of Weil's Disease (Spirochaetosis Icterohaemorrhagiae), J. Exper. Med. **23**: 377 (March) 1916.

[2] Noguchi, Hideyo: Spirochaeta Icterohaemorrhagiae in American Wild Rats and Its Relation to the Japanese and European Strains, J. Exper. Med. **25**: 755 (May) 1917; Morphological Characteristics and Nomenclature of Leptospira (Spirochaeta) Icterohaemorrhagiae (Inada and Ido), ibid. **27**: 575 (May) 1918.

[3] The culture originally obtained from a rat secured in Albany had been passed through two guinea-pigs.

Forty-eight hours after the onset, a specimen of blood was taken for culture and for inoculation into guinea-pigs. The morphologic examination of the citrated specimen of blood in the dark field revealed a few forms which resembled the leptospira but which could not be definitely identified. Further study of the specimen after standing revealed like forms, but very few in number and of quite indeterminate morphology and motility. Ordinarily, *Leptospira icterohaemorrhagiae* increases in number so that its identification is not difficult. On the fourth day, when Dr. Noguchi of the Rockefeller Institute kindly came to Albany to see the patient, further specimens were taken. Guinea-pigs and special culture mediums were inoculated with this specimen of citrated blood, and a careful morphologic examination in the dark field was made immediately, and again the day following, in the hope of discovering forms similar to those seen at the previous examination. But no definite evidence of the presence of *Leptospira icterohaemorrhagiae* was obtained until February 24, when one of the guinea-pigs inoculated February 12 developed jaundice and was found to be dying. It was chloroformed and examined postmortem. Fresh guinea-pigs and culture mediums were inoculated with the specimens obtained from the necropsy—urine, kidney, liver and blood. Morphologic examination of this material in the dark field failed to reveal the spirochetes. The following day a second guinea-pig, inoculated with the specimen taken February 14, developed jaundice. It was chloroformed and examined postmortem; the material was inoculated into fresh guinea-pigs and examined under the microscope in the dark field. Organisms typical of *Leptospira icterohaemorrhagiae* were found in this material.

The results of the examination, therefore, leave no question as to the diagnosis. Whether or not the infection developed from the needle prick is, of course, uncertain; but there is no indication of a different mode of infection or of any connection between this case and those which occurred during the epidemic.

The foregoing case is the only human one studied, so far, during the department's whole investigation of infectious jaundice in New York State, in which *Leptospira icterohaemorrhagiae* has been isolated from the patient's blood. The patient was a member of the laboratory staff who had been working with virulent leptospiras obtained from a rat, and presents, we believe, the first instance of human infection developing from cultures isolated from rats in this country. The investigation is being continued, and further study is necessary before definite conclusions can be made.

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[4] The patient was under the care of Dr. C. K. Winne of Albany.

Lethargic Encephalitis.—The Department of Commerce, Bureau of the Census, states that, in 1920, 1,505 deaths from lethargic encephalitis were reported in the United States as against 589 in 1919. Deaths from this cause were reported for every state in the registration area with the exception of Delaware. In New York state 364 deaths were reported.

FURTHER OBSERVATIONS ON THE DISTRIBUTION OF VITAMIN B IN SOME VEGETABLE FOODS

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AND
LAFAYETTE B. MENDEL, PH.D.
NEW HAVEN, CONN.

In the course of our studies of the distribution of vitamins in plant products, we have collected data regarding a number of important edible foods for which no information in this respect seems to be available at present, with the possible exception of indirect suggestions obtained by other than animal feeding trials. Our experiments, made with rats, supplement numerous earlier ones [1] conducted by the same technic, and indicate that asparagus, celery, dandelion, lettuce and parsley all contain noteworthy amounts of vitamin B.

TESTS USED

The tests were made on young white rats weighing from 40 to 80 gm. which were failing to grow at the age of about 50 days on a diet demonstrated to be adequate to promote increment in body weight at a normal rate when sufficient vitamin B was supplied. The food mixture consisted of casein, 18 per cent.; salt mixture,[2] 4; starch, 54; butter fat, 9, and lard, 15 per cent. The feeding of from 100 to 200 mg. of dried brewery yeast daily in addition to this ration suffices to induce adequate food intake and growth at a normal rate for young rats.

The vegetable products were prepared for feeding by drying the well cleaned and comminuted edible parts, uncooked, in a current of air at about 80 C. Only the blanched stalks of the celery were used, the root portions being discarded. The asparagus represented the upper 5-inch portions of the freshly gathered shoots. Tablets containing varying weights of these desiccated vegetables were fed in known amounts apart from the standard vitamin B-free food offered, along with water, ad libitum.

RESULTS

The asparagus proved to be unexpectedly rich in vitamin B. The requisite daily dose at the age at which the rats were tested approximated 200 mg. of the dry material, equivalent to 2.2 gm. of the fresh vegetable daily. For the celery, the requisite daily dosage ranged above 500 mg. and below 800 mg., equivalent to 10.8 and 17.2 gm., respectively, of the fresh stalks. In the case of lettuce, somewhat less may suffice (400 mg. of the dry, or 11 gm. of the fresh plant). With dandelion leaves the results were not so good. These "greens" are evidently not wholly lacking in vitamin B. Doses less than 400 mg. (equal to 5.6 gm. of the fresh leaves) usually failed to promote gains of weight; and even with 600 mg. daily, nutritive failure ultimately ensued in every case tested. We were at first inclined to attribute this to the presence of some toxic substance which would manifest its deleterious effects as soon as larger quantities of dandelion were consumed. This explanation proved to be untenable, however, because when 200 mg. of dried yeast was added to the daily dose of 600 mg. of dried dandelion leaves, satisfactory growth at once ensued.

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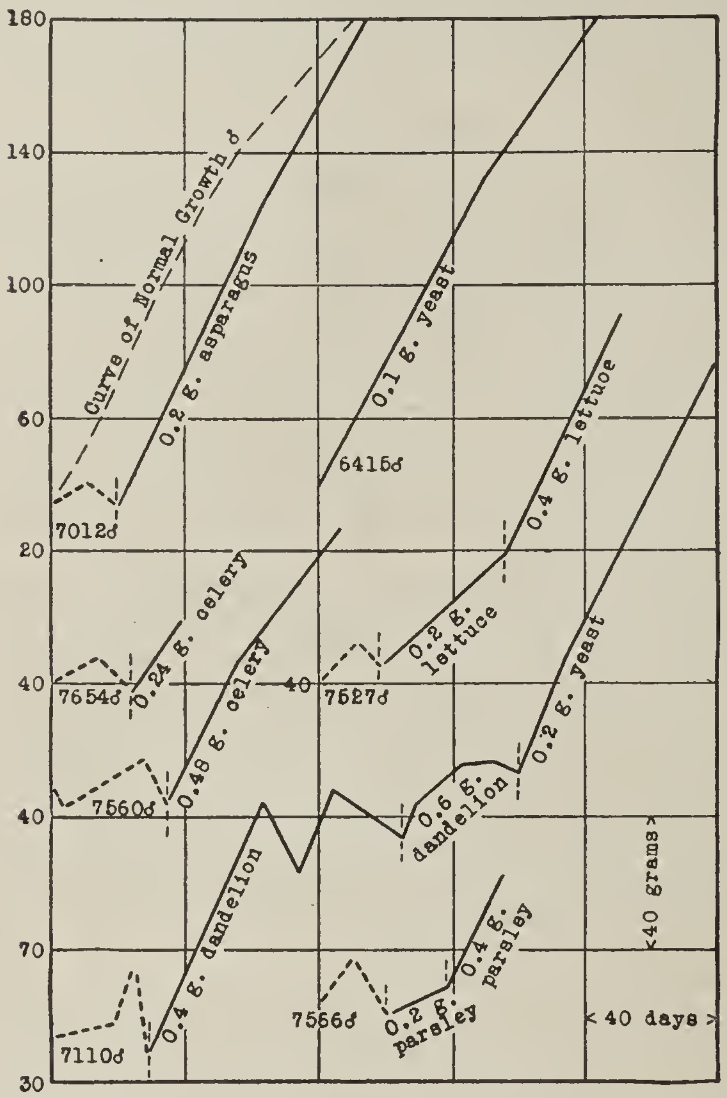
[1] Osborne, T. B., and Mendel, L. B.: Biol. Chem. **37**: 187 (Jan.) 1919; **39**: 29 (Aug.) 1920; **41**:549 (April) 1920; **42**: 465 (July) 1920. A very complete list has been published by Sherman, H. C., and Smith, S. L.: The Vitamins, Am. Chem. Soc. Monograph Series, the Chemical Catalog Company, New York, 1922.

[2] Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **37**: 557 (April) 1919.

In the case of parsley, a vegetable which is consumed in small portions at most, our tests showed failure to make gains with 200 mg., but considerable gains for some time when 400 mg. of the dried substance (equivalent to 2.7 gm. of fresh parsley a day) was fed to the rats.

If these vegetables are considered with respect to their content of vitamin B in comparison with apples and pears, or the juice of grapes, examined by us,[3] asparagus, celery and lettuce, at least, will be found to exhibit a larger vitamin B potency in terms of the edible product consumed. What variations in potency, such as we have found to exist between different lots of grasses harvested at unlike stages of ripeness,[4] might be found on elaborate investigation of large numbers of samples of green vegetables differing in cultural variety and in their stage of maturity cannot be foretold. The foregoing evidence, however, gives added justification for the nutritive prominence of the vegetable products examined, and serves in part to emphasize their importance in the diet of man.



Recovery caused by measured doses of vegetables when fed to rats that had declined on a diet lacking vitamin B during period indicated by interrupted lines.

The accompanying chart furnishes typical illustrations of the recovery caused by measured doses of the vegetables referred to when fed to rats which had declined on a diet lacking vitamin B during the period indicated by the interrupted lines.

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[3] Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **42**: 465 (July) 1920.

[4] Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **39**: 29 (Aug.) 1919.

Clinical Notes, Suggestions, and New Instruments

TETRACHROME BLOOD STAIN: AN ECONOMICAL AND SATISFACTORY IMITATION OF LEISHMAN'S STAIN *

Ward J. MacNeal, M.D., New York

Since Leishman, in 1901, modified Jenner's blood stain by substituting for methylene blue a methylene blue which had been partly decomposed by treatment with dilute alkali and heat (Nocht's polycrome methylene blue), there have been numerous imitations and slight modifications of this stain described by various workers. In this country the best known of these is the modification of Wright. The results obtained in actual staining by the use of these various modifications are, as a rule, inferior to the pictures obtained by the original stain of Leishman.

In 1905 and 1906, it was shown that the essential dyes of the Romanowsky stain, of which the Leishman stain is a special application, are four in number, rather than three, as had been previously maintained by Giemsa. These four dyes are eosin, methylene blue, methylene azure and methylene violet. The two last mentioned substances were first prepared and named by Bernthsen in 1885. Either methylene azure or methylene violet, in combination with methylene blue and eosin, will produce the red nuclear tint characteristic of the Romanowsky stain. However, the most brilliant and satisfactory results in the staining of blood are obtained when all four dyes are utilized.

Water soluble yellowish eosin and medicinally pure methylene blue are easily obtainable and are not expensive. Methylene azure, which is now made in the United States by oxidizing methylene blue with chromic acid and heat, is also easily obtainable at from 40 to 50 cents a gram, although the German product, Giemsa's Azur I, used to cost five times that amount. A satisfactory preparation of Bernthsen's methylene violet is more difficult to get, and it is not listed by the ordinary dealers in dyes. The preparation of an impure methylene violet is not difficult, but its purification by recrystallization from alcohol is difficult and time consuming. Fortunately the impure, crude substance gives good practical results in staining of blood films.

Crude methylene violet is prepared by dissolving 20 gm. of medicinally pure methylene blue in 9 liters of water, and then adding 20 gm. of crystalline sodium carbonate, previously dissolved in 1 liter of water. The mixture is then heated to boiling for from five to ten hours. The precipitate of long needle crystals is filtered out, washed with distilled water, and dried on a porous plate. The yield is about 5 gm. (25 per cent.). This substance is crude methylene violet. The chief impurities are methylene blue and methylene azure and lesser amounts of difficultly soluble, unidentified substances. These impurities do not seriously impair the usefulness of the product.

In collaboration with Schule,[1] in 1913, it was determined that a mixture of the following composition gave most excellent results in the staining of blood cells and hematozoa: water soluble eosin, 1 gm.; medicinally pure methylene blue, 1 gm.; methylene azure, recrystallized, 0.6 gm.; methylene violet, recrystallized, 0.2 gm.; pure methyl alcohol (Merck's reagent), 1,000 c.c. At that time we recommended the preparation of the stain in two solutions, keeping the eosin separate from the other three dyes, and mixing the two solutions in equal parts shortly before use. The separate solutions keep well for two years, but not for four years. The deterioration appears to be due to the slow oxidation of the alcohol. This change is most rapid when the four dyes are present in the same solution. For the last nine years these solutions have been employed in the routine staining of blood films at the Post-Graduate Laboratories, crude products of methylene violet being substituted for the highly purified sample employed in the original tests.

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* From the Department of the Laboratories, New York Post-Graduate Medical School and Hospital.

[1] MacNeal and Schule: Post-Grad. **28**: 982, 1913.

Since 1919, an attempt has been made to interest American dye chemists in the manufacture of methylene violet and particularly in the preparation of a finely ground mixture of the four dyes in a dry state, ready to be dissolved in methyl alcohol in the proportion of 3 gm. to a liter of alcohol. For this mixture of the four dyes the name tetrachrome blood stain has been suggested. Crude methylene violet is used in double the quantity indicated for the pure substance in the foregoing formula.

One manufacturer[2] has prepared a satisfactory mixture of this sort which is designated as tetrachrome blood stain and priced temporarily at one dollar for 10 gm., enough for more than 3 liters of staining solution. An effort is now being made to interest other manufacturers and dealers.

This stain is recommended as a satisfactory imitation of the Leishman stain because of the excellent results in staining blood films, the uniformity of composition and the low cost. The latter is of some importance in large hospitals where many specimens have to be examined daily.

303 East Twentieth Street.

ABSCESS OF THE NASAL SEPTUM: REPORT OF TWO CASES

John A. Glassburg, M.D., New York
Assistant Attending Laryngologist and Otologist, New York City Children's Hospital; Surgeon, Ear, Nose and Throat, Stuyvesant Polyclinic

Acute abscess of the nasal septum is a very uncommon disease. H. Lambert Lack places the frequency at once in from 1,500 to 2,000, and reports only seven cases seen in seven years among about 17,000 patients, ten occurring in children and two in adults. Because of the rarity of this condition, two cases are reported, one occurring in a child and the other in an adult. The patients were seen at the Stuyvesant Polyclinic during the year 1921, and were the only ones among about 5,000 clinic cases.

REPORT OF CASES

Case 1.—A boy, aged 7½ years, was brought to the clinic by his mother, who in a very vague manner stated that for the last two or three nights the child slept with his mouth open, something he had never done before, and snored heavily. In the morning she noticed that his face was swollen, and, becoming alarmed, she brought him to the clinic. No history of trauma or bleeding could be obtained, but the mother did state that the boy was in the habit of picking his nose. Examination revealed a marked facial edema, beginning at the nares, extending over the nose, the cheeks and the lower eyelids, and reaching to the anterior portion of the ears. The temperature was 103 F. by mouth. Rhinoscopy revealed a complete blocking of both nostrils, at first giving the impression of hypertrophied inferior turbinates pressing against the septum. On closer examination, the angry, red obstructing masses were tender, fluctuating, symmetrical, and originating from the anterior portion of the nasal septum. A long incision into the septum over the swelling was made on each side and pus was evacuated. A fine gauze drain was inserted and the child was seen every other day for two weeks, the incision being kept open by changing the dressing at each visit. Gradually the edema subsided, and at the end of sixteen days the healing was complete and no deformity resulted. The breathing returned to normal and remained unimpaired.

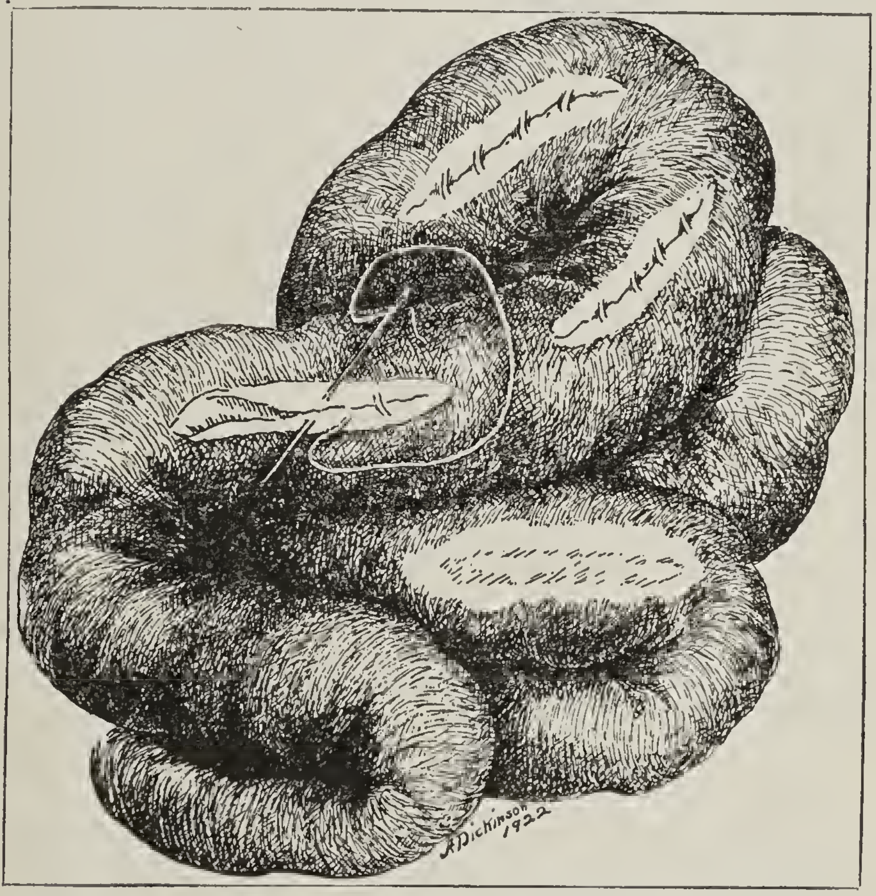
Case 2.—A pugilist, aged 20, had received a blow on the nose three days before. There was no bleeding, and the only pain he experienced was that at the time of the blow. His only complaint was a progressive difficulty in breathing through his nose, until at the present time he was forced to breathe through his mouth exclusively. Examination of the face was negative as to edema or any signs of an external injury. Rhinoscopy revealed a marked swelling on the left side which gave the appearance of a traumatic deviation of the septum. On the right side there was also a swelling, originating from the anterior portion of the septum. It was much smaller, resembling a spur, only it was more diffuse. Both masses were tender, fluctuating, and soft to the touch. The temperature was normal. Roentgenoscopy revealed a straight septum. Obstruction to breathing was complete on the left side and practically unimpaired on the right side. A long incision on the septum over the swelling was made on the left side, and pus was evacuated. A gauze drain was inserted, and the dressing was changed every other day for one week. The swelling on the right resolved of itself. At the end of twelve days the incision was healed, the septum was straight, and the breathing had returned to normal.

231 East Eleventh Street.

METHOD OF DEALING WITH INTESTINAL LOOPS DENSELY ADHERENT TO AN INGUINAL HERNIA

Oliver C. Cox, M.D., Washington, D. C.

The procedure here reported was adopted to make possible the returning of the contents of a hernia to the abdominal cavity with no raw surfaces exposed.



Patches of hernial sac, consisting of peritoneum, firmly fixed to bowel; edges folded over with fine catgut, covering raw surfaces. (Semidiagrammatic drawing from description.)

Mr. C., seen in consultation with Dr. W. J. G. Thomas, July 19, 1920, for years had had a very large, irreducible, left inguinal hernia. July 18, he began having severe pain in the region of the hernia, followed by nausea and vomiting, and inability to pass gas and feces.

He was removed to the hospital and, under procain anesthesia, the operation was done. The sac contained much blood-tinged fluid, omentum, and very dark but viable intestines. The omentum was densely adherent, and was ligated and removed. It was impossible to separate the intestines from the sac, the external surface of which was raw and bleeding. The intestinal loops were separated and the sac wall was severed, leaving patches of it on the intestines, after the manner described by Cullen.[1] These patches, however, were cut large; and, instead of the free portions being trimmed off, they were folded on themselves and their edges approximated with fine, plain catgut, as in the accompanying illustration.

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[2] Calco Chemical Company, 136 Liberty Street, New York.

[1] Cullen, T. S.: Method of Dealing with Intestinal Loops Densely Adherent to an Umbilical Hernia, J. A. M. A. **78**: 564 (Feb. 25) 1922.

Thus the intestines were recovered with smooth, shiny peritoneum, and returned to the abdomen.

The operation was then completed after the Halstead modification of the Bassini method.

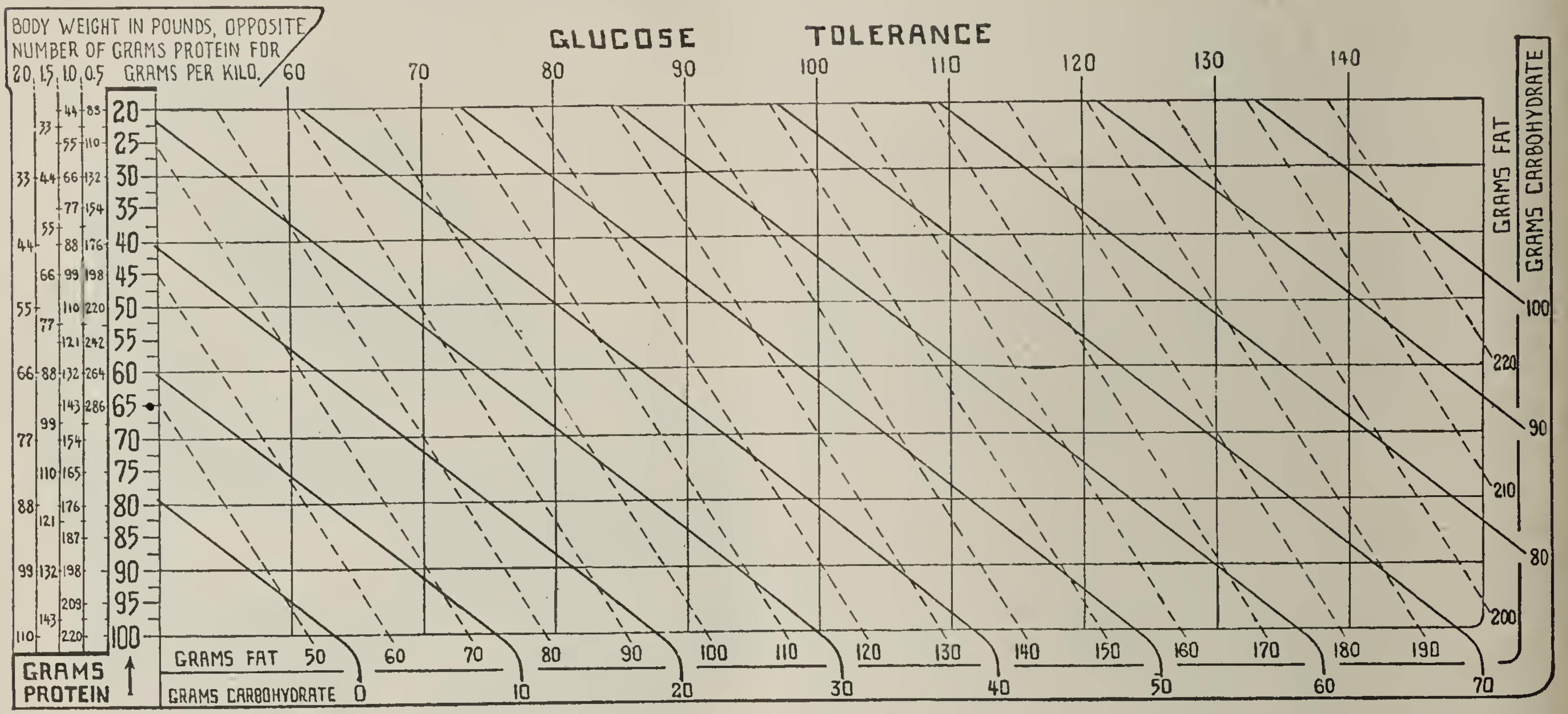
Recovery was uneventful.

Falkstone Courts.

A CHART FOR THE RAPID ESTIMATION OF WOODYATT'S OPTIMAL DIABETIC DIET

Dwight O'Hara, M.D., Waltham, Mass.
Assistant Visiting Physician, Waltham Hospital

Woodyatt[1] recently discussed the endogenous production of glucose and ketogenic acids in fasting, and added its consideration to the dietetic management of diabetes. He pointed out that the catabolism of 100 gm. of protein liberates 58 gm. of glucose, whether the protein is from the diet, from the tissues, or from both. In like manner the catabolism of 100 gm. of fat, from any and all sources, yields about 10 gm. of glucose. It is therefore impossible to secure absolute rest of the glucose-using function by any means, short of stopping metabolism. The catabolism of protein and fat also produces certain quantities of the higher fatty acids.



In using the chart, first find the body weight in pounds, in the grams per kilogram column which is to be used, at the left. Opposite this is the number of grams protein to be used for that weight and for that number of grams per kilogram. Start an abscissa from this point, and an ordinate from the glucose tolerance figure which will be found at the top of the chart. The abscissa and ordinate fix a point in the chart which will have a definite relation to the diagonal lines. By following the solid diagonal line, the grams of carbohydrate for the diet may be read at the lower and right hand margins of the chart. In the same way, by following the broken diagonal lines, the grams of fat for the diet are found.

It is the oxidation of this glucose and fatty acids that we are dealing with in diabetes. Their quantities are influenced, but are not determined exclusively, by the diet; for, except under certain conditions, "as the diet falls the endogenous supply rises to take its place, and vice versa." The diet, therefore, does not always correspond to the total food supply actually catabolized.

Based on the generally accepted ideas of catabolic oxidation, Woodyatt has devised a method of estimating the optimal diabetic diet. This method is a scientific attempt to arrange a diet in which the protein can be adjusted to maintain nitrogen equilibrium, in which the ketone products will be completely oxidized, in which the available carbohydrate will not exceed the glucose tolerance, and in which there will be the greatest possible number of calories for the individual. Such optimal diets may not be necessary except in cases so severe that every possible calory must be allowed. Also, there are many cases of diabetes which are better treated individually than by formula. Woodyatt's work, however, should enable the clinician to see a diet presented to the patient, not as so much protein, fat and carbohydrate, but as a definite combination of glucose and fatty acid. Thus it should have a distinct value in the handling of diabetics.

The original method of figuring the optimal diet has already been simplified into arithmetical tables by Holmes.[2] My purpose here is to present a chart by which the optimal diet may be rapidly approximated.

To ascertain the optimal diet for any individual, it is necessary to know (1) the body weight and (2) the glucose tolerance, or the amount of glucose which the body is capable of utilizing. This is obtained by subtracting the grams of glucose in the urine—quantitated twenty-four hour specimen—from the grams of glucose in the diet—grams of carbohydrate plus 58 per cent. of grams of protein plus 10 per cent. of grams of fat for twenty-four hours. It is also necessary to decide (3) the number of grams of protein per kilogram of body weight which are to be used. The chart is made so that 2.0, 1.5, 1.0 and 0.5 gm. per kilogram may be read directly. One gram of protein per kilogram is probably the most conservative minimum on which to attempt to maintain nitrogen equilibrium.

Directions for using the chart are given in the legend. As an example of its use, imagine a man weighting 140 pounds who, on a diet containing carbohydrate, 10 gm., protein, 140 gm., and fat, 80 gm., eliminates 10 gm. of glucose in the twenty-four hour specimen of urine. The glucose produced by the catabolism of this diet is 10 (carbohydrate) plus 81 (58 per cent. of protein) plus 8 (10 per cent. of fat), which equals 99. All of this has been utilized except the 10 gm. excreted in the urine. The man is therefore able to utilize 89 gm. of glucose, and 89 is his glucose tolerance figure. The number of calories in this diet is approximately 1,320. Forty calories are lost in the urinary glucose, however, so the man actually gets about 1,280 calories. If we want to place this man on an optimal diet which will allow 1 gm. of protein per kilogram, we find that 65 gm. of protein will supply 1 gm. per kilogram for an individual of 143 pounds (65 gm. of protein being opposite 143 pounds in the 1 gram per kilogram column of body weights at the left). The abscissa starting from 65 gm. of protein meets the ordinate starting from 89 glucose tolerance at a point in the chart. The relation of this point to the diagonal lines gives an approximate value of 40 gm. for carbohydrate and of 115 gm. for fat. On this diet, carbohydrate, 40 gm., protein, 65 gm., and fat, 115 gm., the man should be able to utilize his food completely, and should receive 1,455 calories.

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[1] Woodyatt, R. T.: Objects and Methods of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921.

[2] Holmes, W. H.: Simplification of Woodyatt Method for Calculating the Optimal Diabetic Diet, J. A. M. A. **78**: 22 (Jan. 7) 1922.

SPASMODIC COUGH FROM PRESSURE OF ENLARGED HILUM GLANDS

James J. Clark, M.D., Atlanta, Ga.
Associate Professor of Roentgenology, Emory University School of Medicine

A boy, aged 7 years, had had a spasmodic, explosive cough for the last four years. There was no expectoration, fever, or discharge from the eyes or nose. The bowels were open, the appetite fickle. On account of cough, the child had been refused admittance to school for four years, had been expelled from theaters, and had been requested not to attend Sunday school. The child had had scarlet fever, measles, whooping cough and chickenpox. The tonsils and adenoids were removed two years before I saw him, with no effect on the cough. He had been treated by many physicians and given a great deal of medical attention without any relief.

There were no râles heard over the chest. The heart, temperature, pulse and blood were normal. The Wassermann reaction was negative. The boy coughed about five times a minute, the cough being of a brassy, harsh quality. To eliminate pressure from the thymus or an aneurysm, a roentgen-ray examination was made. This disclosed a marked emphysema of both lungs with several large glands near the bifurcation of the trachea in the right and left hilum. As this child had had four years of medical treatment and had taken practically all bronchial sedatives and antispasmodics, it was decided to treat these enlarged glands by roentgen ray on account of the possibility that they were producing pressure on the bronchi sufficient to produce this cough. Four filtered roentgen-ray treatments were given through the anterior and posterior mediastinums. At the end of four weeks the cough had completely disappeared with no recurrence to the present date, which is six months after dismissal.

436 Peachtree Street.

TORSION OF THE CECUM AND ASCENDING COLON

Ernest K. Tanner, M.D., Brooklyn

As was aptly stated in a recent editorial comment,[1] if surgeons would report more regularly in the literature unusual cases which they see, much better data would be available as to the frequency of various less common pathologic conditions. There would also be given valuable information to guide other operators in dealing with similar problems of their own. Most surgeons have had the experience of reading a report of some unusual case and having it bring to mind a similar condition in their own practice which they had not reported.

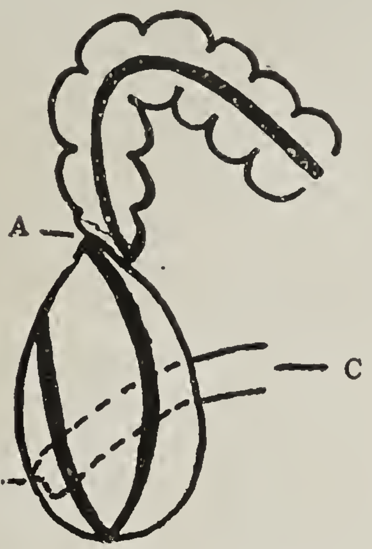
The recent article by Homans[2] on "Torsion of the Cecum and Ascending Colon" reminded me of a case which presented an even more clear-cut example of the condition than the cases which were there described.

REPORT OF CASE

A woman, aged 24, referred to me by Dr. Florence Wilson, and admitted to the Brooklyn Hospital, April 22, 1920, had undergone several laparotomies, including one for tuberculous salpingitis, an appendectomy, and a gastro-enterostomy for duodenal ulcer. The day before admission, while lifting a heavy child, she was taken with a sudden severe pain in the right abdomen, accompanied by some nausea but no vomiting. Rest in bed brought no relief, and she was sent to the hospital, where examination revealed moderate abdominal distention, more marked on the right side than on the left, moderate right sided tenderness, and no rigidity; no mass could be definitely palpated. The bowels had not moved since the onset.

The patient was observed for two days, but there was no improvement in her condition in spite of treatment by posture, enemas and restricted intake. There was no vomiting or bowel movement, but some increase in the distention and rise in the pulse rate. A preoperative diagnosis was made of mechanical obstruction of the bowel without strangulation, probably by a band or kink.

At operation, April 24, many adhesions were found between the intestinal coils and adhesions of the intestines to the abdominal wall. There was a twist of a much dilated, mobile, low-hanging cecum and the lower half of the ascending colon on the long axis, the point of torsion being about the middle of the ascending colon, where the bowel was firmly fixed and narrowed by a dense band of adhesions. The rotation was in a clockwise direction as one looked upward, and was fully 180 degrees in extent, carrying the ileum behind the cecum so that the ileocecal valve was on the outer side.



Torsion of cecum and ascending colon: *A*, twist; *B*, ileocecal valve; *C*, ileum.

The volvulus was untwisted, the constricting bands were freed, and the cecum and the ascending colon were tacked in proper position by interrupted sutures to the parietal peritoneum well back in the lateral fossa. Recovery was fairly normal except for a low grade fat infection.

Two months later the patient's physician reported that the abdominal condition was satisfactory, there being no pain or obstructive symptoms. A roentgen-ray study a year later for a suspected gastrojejunal ulcer disclosed the cecum and ascending colon apparently perfectly normal in position, size and contractility.

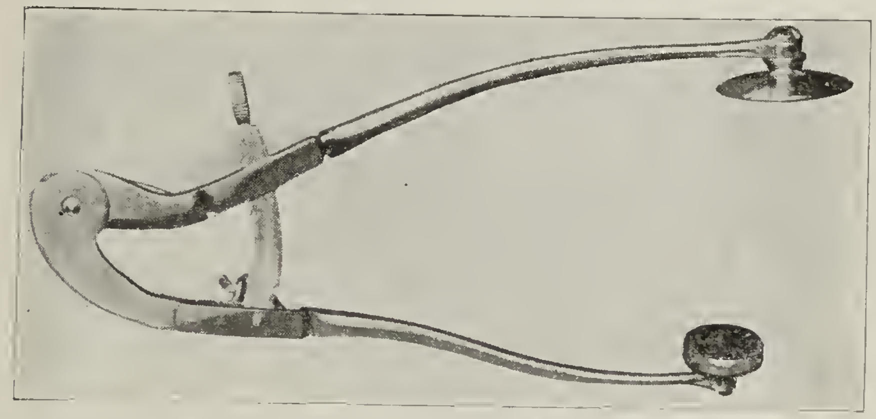
A possible explanation of the mechanics of this particular case would be that the dilated mobile cecum had rolled forward on its fixed point as the girl bent forward, and had then been forced downward *en masse* in this twisted position as the strain of lifting the child increased the intra-abdominal tension.

1205 Dean Street.

SELF-RETAINING RADIUM HOLDER FOR TONSIL WORK

Cosby Swanson, M.D., and William H. Hailey, M.D., Atlanta, Ga.

When we began to use radium for selected cases of hypertrophied and infected tonsils, great difficulty was experienced in getting patients to hold the radium against the tonsil. It occurred to us that a tonsil hemostat could be used for this purpose.



Self-retaining radium holder for tonsil work.

The spring clamps to hold the gauze pad and the knob were removed from the inner blade of a Corwin tonsil hemostat. The hole in the inner blade was enlarged so as to fit the peg on a 30 mg. oval radium plaque. A rubber cot was placed over the radium and inner blade, and the device was then ready to be placed in position.

436 Peachtree Street.

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[1] The Value of Case Reports, Current Comment, J. A. M. A. **78**: 285 (Jan. 28) 1922.

[2] Homans, John: Torsion of the Cecum and Ascending Colon, Arch. Surg. **3**: 395 (Sept.) 1921.

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SATURDAY, APRIL 15, 1922

CHANGING TENDENCIES IN THE DIETOTHERAPY OF DIABETES

Opinions on the dietary treatment of diabetes mellitus are admittedly in a state of flux. Physicians of experience can easily recall the varied advice which those interested in the nutritional aspects of the disorder have promulgated from time to time. The futility of feeding large quantities of carbohydrate to a patient manifestly incapable of utilizing this type of foodstuff for the metabolic needs of his organism early became apparent. As a consequence, the procedure of excluding sugars and starches as largely as possible from the diabetic dietary early gained therapeutic popularity. The carbohydrate-free or carbohydrate-poor regimen was at first employed essentially with the intent of saving the body from the gratuitous task of digesting, absorbing and "assimilating" products that were no longer oxidized, or at least utilized in only a small measure by the tissues, but were promptly excreted unused. Considerable discomfort was averted by establishing conditions in which the quantity of sugar in the urine was markedly decreased and the volume output consequently reduced materially. In other respects, however, the attempt was made to feed the patients liberally with proteins and fats, often with the avowed aim of causing the diabetic not only to maintain himself but even to gain weight and thereby assumedly promote his nutritive welfare.

Presently it became apparent that in many instances, at least, a diet of protein and fat alone may prove deleterious to the patient. Symptoms of ketosis, including the excretion of acetone, diacetic acid and beta-oxybutyric acid, may arise and be attended with other untoward consequences. The "ketone substances" were demonstrated to be derived from fats; and it became apparent that, in many instances at least, they do not arise if some carbohydrate is available for metabolism. Thus the dictum arose that "the fats are burned in the flame of the carbohydrates." Starvation may be attended with some ketonuria. It can be prevented by the administration of carbohydrates in quantities which may not in themselves be sufficient to maintain the body, yet will avoid the appearance of acetone. Since, furthermore, the ketonuria of severe diabetes is usually increased by an abrupt change to a diet that contains no carbohydrate but does contain large quantities of fats and proteins, the problem of supplying at least a modicum of carbohydrate has given concern to many clinicians. They were confronted with the difficult task of steering between the Scylla of glycosuria and the Charybdis of ketonuria.

A further complication and premonition of danger has arisen from Allen's contention that hyperglycemia must be avoided at any cost. If the pancreas is primarily involved in the metabolic derangements in diabetes, and this organ is susceptible to further functional damage whenever it is called on to provide for an additional load of sugar-converting work, obviously the pancreas must be spared from such a strain. Thus the burden of adjustment grows. Sugar is bad for the disorganized pancreas; yet, without sugar, fats cannot be utilized properly. Added to the mysterious misfortunes came the discovery that the proteins—the only remaining purveyors of energy—are themselves potential sources of sugar in the metabolism. At best, the problem of sustenance in the diabetic seems to involve the discovery of his tolerance not only for carbohydrates, but for fats and proteins as well. Whether the patient shall be starved to the point of such tolerance, as many have advocated during the last few years, is again being openly debated. We are told that the fasting procedure "has made attainable the ideals of treatment, namely, a sugar-free and acid-free urine. The standards of the success of treatment are so simple that they are within the reach of the patient. At one stroke the patient is delivered from medicines, 'patent' or otherwise, sham kinds of treatment, gluten breads, and in ninety-nine cases out of a hundred of alkalis."[1] But what shall be said of the prognosis?

Obviously, no person can be maintained for a very long period unless a satisfactory nitrogen balance can be established. The organism cannot continue to play a losing game with its supply of protein. Furthermore, if the nitrogen balance is to be maintained on a low protein intake, the total calories in the food must be sufficient to supply calorific need. There must, in other words, be enough fat or carbohydrate or both in the diet so that the protein may be used to maintain and restore body tissue. The protein-sparing properties of fats and carbohydrates in healthy persons have long been known to students of nutrition. Fat alone does not suffice so well. Marsh, Newburgh and Holly[2] of the University of Michigan Medical School have demonstrated anew that nitrogen balance can be established in the diabetic according to the laws applicable to the normal subject, provided his total caloric requirement can be satisfied. This, they add, implies that he can burn enough glucose to metabolize fat. Diabetics who cannot burn this small amount of glucose are extremely rare. The upshot of this is to negative the widely accepted belief that patients with diabetes mellitus require more protein for the establishment of nitrogen balance than do normal subjects, and that there is, as an inherent part of the disease, an abnormally high rate of protein metabolism with an increased elimination of nitrogen.

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[1] Joslin, E. P.: Am. J. M. Sc. **150:** 489, 1915.

[2] Marsh, P. L.; Newburgh, L. H., and Holly, L. E.: The Nitrogen Requirement for Maintenance in Diabetes Mellitus, Arch. Int. Med. **29:** 97 (Jan.) 1922.

Granted that there is no undue need for protein in the diabetic, it may be asked whether any advantage whatever is gained from the more liberal supply of this nutrient. To this the Michigan clinicians reply that protein metabolism above the minimal is undesirable in the diabetic because of the great glycogenic property and the large specific dynamic action of protein. Excessive protein metabolism results from a diet containing either too much protein or too few total calories. If a diabetic has lost the ability to burn both carbohydrate and fat, he is inevitably compelled to resort to protein as a source of energy. When these extreme conditions do not exist, however, perhaps there is greater justification today to draw more liberally on fats than has been done in recent years. At any rate, the high-fat, low-protein, low-carbohydrate diet championed by Newburgh and Marsh[3] is beginning to demand respectful consideration.

THE THERAPEUTIC USE OF YEAST AND VITAMIN PREPARATIONS

The medical profession is unquestionably facing a problem in connection with the current widespread public propaganda for the therapeutic use of yeast and so-called vitamin preparations. Every person who reads—whether it be the monthly or weekly magazines, the daily newspapers, or even the billboards—is likely to find gratuitous reminders that he is confronted with menaces to health which not only ought to be averted but can readily be remedied, when present, by the simple expedient of a potent medicine or proprietary product. This is not a novel situation. Medical, like social and economic panaceas, belong to every age. They are called forth by a variety of provocations. Frequently a real danger, difficult to cope with, uncertain in its outcome, widespread in its incidence, elicits a score of alleged remedies. If cholera or infantile paralysis or influenza chances to gain a foothold somewhere, the offers of "sure relief" are not slow in following. Sometimes they are asserted to be curative, or again merely prophylactic. Usually they are the devices of the quack, quick to profit by a serious situation; but it would be unjust to the better elements in human nature to deny that many of these remedies for our ills represent the earnest intent of well meaning persons to help in time of trouble. They all too often fail to take into account the limitations of our knowledge, on the one hand, or the helplessness which often springs from an actually irremediable condition of disease. Under such circumstances, the public and even the physician may grasp for any straw—even against the dictates of his own wisdom and experience.

If some of the claims of the advocates of a widespread yeast or vitamin therapy regarding the well-nigh universal danger of vitamin starvation were warranted, one might still question whether special "concentrated" or vitamin-rich medicaments were called for to remedy the situation. The tentative conclusions of the Council on Pharmacy and Chemistry of the American Medical Association, printed in detail elsewhere in this issue of The Journal,[1] must appeal to every thinking physician. An extensive inquiry has led to the deduction that disease states attributable to lack of vitamin B (with which alone yeast and its derivatives are concerned) are certainly not widespread in this country. Surely no educated physician would be satisfied to identify the indiscriminate diagnoses of "lack of vigor," "run down condition," "lowered resistance" and similar generalizations with some obscure avitaminosis — a sort of latent beriberi or "specific anorexia." If medical diagnosis of obscure conditions is to be self-made in this fashion, the outlook for progress in the mastery over real disease is, indeed, dreary.

No one will deny the great contribution which the discovery of the vitamins has made to physiology and medical progress. It shares with the current conceptions of food energy in adding helpful ideas to the science of nutrition both in health and in disease. There is no reason, however, to seek calories in tablets. Why shall vitamin B be sought by every family on the druggist's shelves rather than in the garden or the grocery, the dairy or the meat market?

The crux of the present situation has already been referred to in these columns.[2] The proof of a superiority of special vitamin B preparations in all except a possible few conditions remains to be demonstrated. Even an enthusiast will be forced to admit, with the Council's report, that yeast or yeast-vitamin therapy has at present nothing more than an experimental status, except perhaps in a few not easily definable conditions for which yeast has been traditionally recommended without finding any considerable acceptance. Self-medication or take-a-chance medication even with a harmless product is not always a harmless performance. There is danger in deception. Real therapy is based on correct diagnosis. We must never deceive ourselves by an ardent desire for therapeutic panaceas.

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[3] Newburgh, L. H., and Marsh, P. L.: The Use of a High Fat Diet in the Treatment of Diabetes Mellitus, Arch. Int. Med. 26: 647 (Dec.) 1920.

[1] Page 1146.

[2] The Demand for Vitamins, Current Comment, J. A. M. A. 78: 810 (March 18) 1922; Our Knowledge of Vitamins, 78: 734 (March 11) 1922.

THE DIGESTION OF SUGAR

One hundred years ago the total per capita consumption of sugar in the United States was less than 9 pounds a year. It has increased by leaps and bounds, until now this country is probably the largest consumer of sugar in the world, in proportion to its population. Kellogg and Taylor[1] estimated the per capita use just before the war at close to 4 ounces a day, and the popularity has not decreased since sugar has again become an inexpensive article of food. Directly or indirectly, sugar enters into the dietary of man at the table, in the conservation of fruits, in cookery, and in the form of confections and beverages. The comparatively late inroad of sugar into our national dietary regimen indicates that it is by no means indispensable for a life of health and efficiency; but, as a recent writer has remarked, sugar contributes enormously to the psychology of the diet, and a reduction of sugar, like a reduction of milk, is likely so to upset the cuisine as to make the diet unsatisfactory to many.

The preceding comments apply, of course, primarily to the carbohydrate sucrose, $C_{12}H_{22}O_{11}$, which is consumed for the most part as cane sugar or beet sugar, and in lesser amounts in such other natural products as maple sugar. Glucose, $C_6H_{12}O_6$, though closely related to the disaccharid sucrose, has a somewhat different physiologic position; for, whereas glucose can be utilized directly by the organism, whether this sugar is taken by mouth or even introduced directly into the blood stream in reasonable amounts, sucrose must first be digested, i. e., converted into invert sugar, a mixture of glucose and fructose, before it can be utilized.

Where is the inversion or digestion of "table sugar" ordinarily accomplished? It is well known that the intestinal glands secrete an inverting enzyme capable of bringing about the requisite digestive change in sucrose prior to its absorption. Sucrose is also easily inverted by acids even in weak concentration; and it has long been known that the acidity of the gastric juice is sufficient to effect this chemical reaction. As the secretion of the stomach can invert sugar in vitro, it has been assumed to be responsible for the digestion of this carbohydrate after meals. Hill and Lewis[2] have recently pointed out, however, that factors other than mere acidity must be taken into account when hydrolysis of sugar in the stomach is under consideration. The rate of discharge of sugar-containing contents from the stomach may greatly limit the time during which the gastric acid can act upon the ingested sucrose; and regurgitation of intestinal contents into the stomach may also serve to furnish an inverting enzyme. In experiments which Hill and Lewis have conducted on man at the University of Illinois by the method of fractional analysis of gastric contents after ingestion of sugar, it has appeared that the inversion under normal conditions is too slight to be of significance, as carbohydrates leave the stomach too rapidly to permit of prolonged action of the acid. It has not been possible to demonstrate the presence of an active sucrase in gastric contents in spite of the fact that intestinal regurgitation had occurred in many cases, as evidenced by the presence of bile. These findings relegate the essential digestion of the sugar which forms no inconsiderable component of our daily diet for the most part to the intestine.

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[1] Kellogg, V., and Taylor, A. E.: The Food Problem, New York, the Macmillan Company, 1917, p. 171.

[2] Hill, R. M., and Lewis, H. B.: The Hydrolysis of Sucrose in the Human Stomach, Am. J. Physiol. **59**: 413 (Feb.) 1922.

ORIGIN OF CHOLESTEROL IN THE BODY—A PROBLEM

More than a hundred years have elapsed since the French chemist Chevreul, in 1814, gave the name cholesterin (now usually changed to cholesterol to indicate its alcohol-like character) to a nonsaponifiable, fat-like substance which Fourcroy had long before isolated from gallstones. Although confirmed in the belief that cholesterol or closely related substances are ever present components of all active cells of the body, the physiologist still hesitates to assign a well defined rôle to the organic compound which he nevertheless recognizes as physiologically important. The chemist has thus far failed to unravel completely the intricacies of the structure of cholesterol. Little wonder that the pathologist who often finds cholesterol present in undue amounts in calculi, in tissue fluids, and in various organs is at a loss to interpret his observations or incorporate them into a tenable hypothesis as to the function, either normal or pathogenic, which the lipoid compound may perform.

The need of knowing how and where cholesterol originates in the body is obvious. Cholesterol or related "sterols" occur not only in animal tissues but also in plant structures which form the food of man. Are they derived, in ultimate analysis, from vegetative forms so that the plant world is responsible for their origin? If so, the dietary relations of cholesterol cannot fail to be important. Or, can this lipoid be produced de novo in the animal organism? Can this significant component of the blood corpuscle and glandular cells, of the brain and the skin secretion, arise by synthesis in the cells of the body? Data on the balance of intake and output of cholesterol from the organism furnishing a balance sheet which might give an answer to the questions at issue are not very abundant.

Statements are not lacking to indicate that the excretion of cholesterol in the feces can be largely accounted for by that taken in with the food, so that there seems to be no need of assuming a new formation of cholesterol in the body and its subsequent removal by paths of elimination into the bowel. The latest word comes from Gardner and Fox[1] at the University of London.

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[1] Gardner, J. A., and Fox, F. W.: On the Origin and Destiny of Cholesterol in the Animal Organism, XII, On the Excretion of Sterols in Man, Proc. Roy. Soc. London, Series B **92**: 358 (Dec. 1) 1921.

It is, of course, well known that the sterols excreted in the feces are partly derived from the bile as well as from the food. But according to the London experiments on man there is, under ordinary conditions of diet, regularly an excess of output over intake; hence it is concluded that there must be an organ in the body capable of synthesizing cholesterol. The justification for searching out the seat of manufacture rests not only on these balance data but also on other less cogent evidences of other sorts. If the organ or tissues concerned are discovered, many of the puzzling features of cholesteremia, of cholesterol deposits, of hemolysis in which lipoids are concerned, of fat transport, and other now perplexing reactions may be somewhat clarified. The search is a project well worth while.

AMERICAN MEDICAL JURISPRUDENCE AND THE EXPERT WITNESS

In this country medical jurisprudence, that is, the practical application of medical knowledge to problems in the administration of law, remains in a more or less chaotic state. That there is a general lack of interest by officers of government and by the medical and legal professions in building up this valuable branch of medicine is seen in our low standards of postmortem examination, in our methods of toxicologic and other analyses, in the failure of even our largest cities to maintain adequate medicolegal institutes, and in the dearth of organizations and publications to deal with the many scientific and practical questions of medical jurisprudence in its various ramifications, which consequently lingers in an unorganized and discreditable state without gaining in social value.

Unquestionably, a most serious obstacle to better things in medical jurisprudence here is the method of selecting and paying the expert witness by the litigants themselves. Under this system, expert testimony only too often is of no value; the conflicting experts, called by plaintiff and defendant, merely bewilder the jury and amuse or disgust the public. In a recent presidential address before the Ohio State Bar Association, C. E. McBride[1] pleads for selection of expert witnesses by the court, and compensation by the state or county or to be collected as part of the costs of the trial, as a remedy for the manifest evils of the present system. These evils are emphasized strongly, as illustrated by quotations from different judges in support of the general statement that "the uncertain and contradictory character of expert testimony has weakened its force and effect in the trial of causes":

> Considerable experience has taught me that the testimony of experts who are selected by the party in whose behalf their testimony is to be given, and where testimony in his favor is assured beforehand, is likely to be considerably influenced by the fact that the experts have been employed as such by the party calling them, and that while on the stand they are paid to have a theory, which they are zealous to maintain; and as a general rule they fall short of that impartiality which characterizes ordinary witnesses in courts; and this observation has led me to scrutinize with great care the testimony given under such circumstances. . . .
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> The present system of presenting the testimony of experts, in the courts, is poorly calculated to assist in arriving at the exact truth. The expert produced as a witness has almost invariably given assurance that he will swear to an opinion favorable to the party calling him, and for this he usually receives a fee proportioned to his estimate of the value of his opinion to the side for which he testifies. . . .
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> Expert evidence, so called, or, in other words, evidence of the mere opinions of witnesses, has been used to such an extent that the evidence given by them has come to be looked upon with great suspicion by both courts and juries, and the fact has become very plain that in any case where opinion evidence is admissible the particular kind of an opinion desired by any party to the investigation can be readily procured by paying the market price therefor. He (the expert) comes on the stand to swear in favor of the party calling him, and it may be said he always justifies by his works the faith that has been placed in him.

From the nature of the case, the introduction of better methods than the present rests largely with the legal profession; but physicians in general, and particularly all who are interested in medical jurisprudence, will favor strongly the adoption of some system that shall increase and not hamper the services which this branch of medicine, properly used, can render to society. In the meantime, determined efforts should be made by organization of those who are concerned directly, and in other ways, to promote the development of American medical jurisprudence.

Current Comment

UNSETTLED STATUS OF INTRACELLULAR ACIDOSIS IN MUSTARD GAS POISONING

The belief that war gases will continue to occupy a leading position among the implements of future wars prompts further consideration of these substances. During the World War, information about the activities of the Germans with war compounds, especially mustard gas, was largely conjectural. A disclosure of these activities has been awaited in various quarters with interest. There is no doubt that in this field the Germans were quite as active as in others. This is indicated by an exhaustive series of reports,[1] according to which the results with phosgen and some other pulmonary irritants generally agree with those of the American investigators; but when it comes to mustard gas (dichlorethylsulphid), there is a marked difference of opinion. The actions of this gas are reported on by Flury and Wieland. These investigators disagree entirely with the notion that the cause of lesions (burns, etc.) by mustard gas is due to the intracellular liberation of hydrochloric acid, attractive as this explanation appears to be. It will be recalled from a previous editorial[2] on the achievements of American investigators along this line, notably Marshall and his colleagues, that the mechanism of action of mustard gas consists of intracellular liberation of hydrochloric acid. In certain directions the evidence seemed convincing. Flury and Wieland, however, state positively that vesication, burns and other lesions can occur from certain oxidation products of mustard gas which dissolve in water without chemical decomposition and are nonvolatile at ordinary room temperature, and for this reason they discard the acidosis theory. These products are dichlorethylsulphoxid and dichlorethylsulphone. Dichlorethylsulphone, in minute concentrations, was found to produce the characteristic effects of dichlorethylsulphid (mustard gas), and the most important difference from mustard gas was that its action occurred earlier and more rapidly. The German investigators lay stress on capillary paralysis by sulphur products as the cause of lesions by dichlorethylsulphid. Intracellular acidosis was also rejected as the cause of lesions produced by arsenical compounds, of which more than a hundred were studied by Flury in a separate report of this series. All of this leads naturally to the conclusion that the mechanism of action of mustard gas is still unsettled.

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[1] McBride, C. E.: Selection of Expert Witnesses: Method of Choice by Court, with Certain Standardized Compensations, Likely to Secure More Disinterested Testimony and Thus Tend to Remove One Ground of Public Criticism, Am. Bar A. J., 1922, p. 171.

[1] Ztschr. f. d. ges. exper. Med. 13: 579, 1921.

THE GROWING MENACE OF BENZENE (BENZOL)

A recent article by Dr. Alice Hamilton[3] in The Journal, regarding the growing menace of poisoning with benzene in this country, deserves attention because the peculiar properties and industrial relationships of this coal tar distillate are not yet clearly realized by many. Benzene (C_6H_6, commonly termed benzol) is frequently contaminated with toluene (toluol), xylene (xylol) and other products derived from the distillation of coal tar. Formerly used almost exclusively as a solvent in this country in competition with other organic compounds, it has gained rapidly in popularity since the World War, for commercial reasons pointed out by Hamilton. In fact, she observes that probably we shall presently find the pretroleum distillates supplanted by the coal tar in the making of varnish, quick drying paints and shellacs, and in dry cleaning, if not in the making of spread rubber goods and dipped rubber goods, as is done in Europe. Benzin, which is often confused in name with benzene, is, like gasoline, a petroleum product of hydrocarbon make-up. The naphthas also belong in this group. Although all of these products are sources of menace to workmen and others, their vapors do not approach those of benzene in toxicity. Since the increasing use of the latter has been described as "a disastrous innovation in industry," it is highly important to have the greater danger emphatically brought to public attention. Lately, Henderson and Haggard[4] of the Laboratory of Applied Physiology at Yale University have pointed out the difference in the toxicity of the exhaust gases resulting from the use of different fuels in motors. The problem is one of the utmost importance in connection with the ventilation of spaces in which such combustion wastes can accumulate. Carbon monoxid affords the chief menace, in any case. According to the Yale investigators, in the exhaust gas from gasoline, carbon monoxid is the only considerable toxic constituent. In the exhaust gas from coal distillate (benzene, etc.), and in illuminating gas, there are present accessory toxic substances.

THE VILLI OF THE INTESTINE

The enormous number of villi which the small intestine contains, as well as their intricate structure, bears witness to the presumable importance of these parts of the mucosa in the alimentary functions. The villi are, indeed, somewhat unique in that they offer two conspicuous channels by which substances which have succeeded in traversing the intestinal epithelium can find their way into the general circulation. The central lacteal of each villus provides a direct path into the lymphatics that ultimately pour into the thoracic duct, wherefrom their contents finally become transferred into the systemic blood stream. The blood capillaries of the villi offer another channel of absorption. What physical and chemical forces come into play in promoting absorption in the villi has long been a subject for debate. It is well known that, from the muscularis mucosae, unstriated muscle fibers pass through the villus to various internal attachments. Despite the extensive studies on the functional activities of the more conspicuous intestinal musculature, less consideration has been given to the contractile tissue associated with the villi, although it has often been suggested that contractions of the latter might facilitate the movements of fluid in the lacteals. In 1914, Hambleton[1] pointed out that, with the aid of the binocular microscope, the villi can be observed under suitable conditions during life. The fact that they exhibit shortening, lengthening and lateral movements reemphasized the possible aid of such mechanical factors in the processes of absorption. More recently, King and Arnold[2] of Vanderbilt Medical College have added observations of a similar sort. The movements of the intestinal villi may, according to them, exhibit some degree of rhythmicity in response to suitable stimuli. These contractile phenomena of individual villi may or may not be associated with movement of the mucosa as a whole. Both chemical and mechanical stimulation may set the mucosal mechanism into activity. The reaction is local in character, and there does not appear to be any definite interdependence or correlation between the activities of the outer and mucosal motor mechanisms. The mucosal motor mechanism is most active and reactive in the duodenum and upper jejunum, less so in the lower jejunum, and almost refractory in the ileum. The mechanism is very sensitive to anemia as well as to thermal changes. Now that the essential facts are becoming better known, some of the puzzling features of the pathology as well as the physiology of absorption, including a great diversity of so-called "digestive upsets," may be brought nearer to a tenable explanation.

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[2] The Mode of Action of Mustard Gas—Dichlorethylsulphid, editorial, J. A. M. A. **72**: 1678 (June 7) 1919.

[3] Hamilton, Alice: The Growing Menace of Benzene (Benzol) Poisoning in American Industry, J. A. M. A. **78**: 627 (March 4) 1922.

[4] Henderson, Yandell, and Haggard, H. W.: The Physiological Principles Governing Ventilation When the Air Is Contaminated with Carbon Monoxide, J. Indust. & Eng. Chem. **14**: 229 (March) 1922.

[1] Hambleton: Am. J. Physiol. **34**: 446, 1914.

[2] King, C. E., and Arnold, L.: The Activities of the Intestinal Mucosal Motor Mechanism, Am. J. Physiol. **59**: 97 (Feb.) 1922.

EXTRAVITAL CULTURE OF EPITHELIAL TISSUE

The extravital culture of tissues, successfully introduced by Ross G. Harrison of Yale University, has aroused much interest because of the promise which it holds out for the discovery of fundamental factors that may promote or retard the growth of cells. Through Harrison's beautiful culture experiments with nervous tissue taken from the embryo, the ameboid outgrowth of the nerve fibers from the cell was demonstrated. Thus, Garrison wrote in his History of Medicine, by purely physical and chemical methods, the whole nervous system was finally brought under the cell doctrine of Schwann and Virchow.[1] Among other tissues, the greatest success thus far has attended the study of the connective varieties, largely owing to the efforts of Carrel and his co-workers at the Rockefeller Institute for Medical Research. The possibility of maintaining cultures of connective tissue cells alive and growing for years has already been demonstrated. Although the cultivation of epithelium outside the living body has offered much greater difficulties, this, too, has at length become an accomplished feat; Fischer[2] has already maintained a strain of pure epithelial cells from the iris in vitro for more than three months without any sign of deterioration. It continues to proliferate without losing its epithelial characteristics, and grows as a pavement membrane in tissue culture. Thus it will doubtless become possible to study in new ways and on a number of representative tissues the manifold conditions under which various forms of growth, including so-called neoplasms, arise, as well as to ascertain the influences that accelerate or retard the growth processes. Even the hope of victory over cancer has been involved in the program of such investigations. As Lee[3] has written, in extolling the scientific features of modern medicine, it is not possible at present to foretell how far this kind of investigation will carry us. One practical result may be the discovery of means by which the healing of wounds, which is now left largely to nature, may be greatly accelerated. In the moods of our greatest optimism, he concludes, we may be permitted to dream of far greater and far more wondrous achievements.

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1. Garrison, F. H.: History of Medicine, Ed. 3, Philadelphia, W. B. Saunders Company, 1922, p. 564.
2. Fischer, A.: A Three Months Old Strain of Epithelium, J. Exper. Med. 35:367 (March) 1922.
3. Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911, p. 152.

Work During Pregnancy.—Motherhood is a normal physiologic function and should be the natural right of every woman, but civilization makes it in many cases abnormal. It is advisable that the expectant mother should remain under her accustomed conditions as nearly as possible, provided they have no harmful effects upon her or her future offspring. Work, if not harmful in its effects, should be continued. The same conditions as to diet and exercise should be advised as before pregnancy occurred.—A. L. McIlroy, *Nation's Health* **4**:134 (March) 1922.

Association News

GRANTS FOR RESEARCH IN THERAPEUTICS

The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry will consider applications for grants to assist research in subjects which, in the opinion of the committee, are of practical therapeutic interest to the medical profession, and which research might not otherwise be carried out because of lack of funds.

Requests should state the specific problem which is to be studied, the qualifications of the investigator, the facilities available to him, and, if work is to be undertaken in an established research institution, the name of the individual who will have general supervision. The committee will also appreciate offers from research workers to undertake investigations of questions which may be suggested by the Council.

Applications should be addressed to: Chairman, Therapeutic Research Committee, Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Illinois.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Hospital News.—The Woodlawn Hospital, Birmingham, was formally opened, March 16. Dr. J. H. Stephens is the owner of the building.

Personal.—Dr. Wilbur A. Sellers, Montgomery, was shot and seriously injured, March 11, in a local hotel by L. H. Seawall, a drug salesman. Dr. Sellers will recover.

Baldwin County Medical Society.—At a meeting in honor of Dr. L. W. Roe, held at Bay Minette, April 4, Dr. Roe spoke on "Recreation of the Old Family Doctor."

University of Alabama.—At the meeting of the Council on Medical Education and Hospitals held in Chicago in March it was voted that the University of Alabama School of Medicine be rated in "Class A."

John A. Andrew Clinical Society.—The eleventh annual clinic and the fourth annual meeting of the society was held at the Tuskegee Institute, Birmingham, April 3-5, under the presidency of Dr. Henry C. Bryant. The second annual postgraduate course in medicine and surgery and the first annual postgraduate course in nurse training will be held at the institute, April 1-28. A statue of Booker T. Washington, founder and principal of the Tuskegee Institute, who died in 1915, was unveiled, April 1, by Dr. Emmett J. Scott, his former secretary. The statue is a national gift of some 100,000 American negroes.

CALIFORNIA

Southern California Medical Society.—The sixty-sixth semiannual meeting of the society was held at San Diego, April 7-8, under the presidency of Dr. William Duffield, Los Angeles.

California Lepers.—Thirty-three lepers—all the known lepers of the state—were taken in an isolation car to the new federal leprosarium at Carrville, La., recently, for treatment with chaulmoogra oil. The trip was made under the supervision of Dr. W. T. Harrison, U. S. Public Health Service.

New Medical Society.—At a meeting of local physicians, March 28, in Madera, the Madera County Medical Society was formed with the aid of Dr. William E. Musgrave, Sacramento, secretary of the Medical Society of the State of California. Dr. Dow H. Ransom was elected president and Dr. Ray R. Dearborn, secretary.

Personal.—Dr. James A. Ramsay has been appointed general manager and chief physician at the Hillcrest Hospital, Hemet, to succeed Dr. Verdo B. Gregory, who has retired from practice.——Dr. Wendall A. Jones, Arlington, has been appointed superintendent of the Riverside County Hospital, Arlington, to succeed Dr. Edward H. Wood, who has been granted leave of absence for one year and will sojourn in the East.——A dinner was given in honor of Dr. Eva C. Reid, in recognition of her services as after-care physician of the California state hospitals, by the Social Workers' Alliance, March 28. Dr. Reid has accepted a position with a psychiatric clinic in New York.

CANAL ZONE

Gorgas Memorial Site Provided.—At a meeting of the board of directors of the Gorgas Memorial Institute in Washington, D. C., April 1, it was announced that the Panaman government has provided a site for the proposed institute of Tropical and Preventive Medicine in Panama. The site which is adjacent to the St. Thomas Hospital contains laboratories and buildings and represents a cost of approximately $500,000. Dr. Richard Strong, professor of tropical medicine, Medical School of Harvard University, who is director of the institute, arrived in Panama recently for a stay of six weeks and expects soon to have a staff completed and to begin work. Contributions for this school, as well as for the Tuscaloosa memorial, will be collected from the various states and from private contributions, with substantial help from the South American republics. The board of directors also announced the appointment of the following directors of the Gorgas School of Sanitation, to be erected at Tuscaloosa, Alabama: Dr. S. W. Welch, Alabama; Dr. Charles F. Dalton, Vermont; Dr. A. J. Chesley, Minnesota; Dr. E. G. Williams, Virginia; Dr. Lloyd Noland, Tennessee, and J. A. LaPrince, representing the U. S. Public Health Service. This board will meet at Tuscaloosa the first week in May and arrange the course of instruction leading to degrees or certificates in sanitary engineering, sanitary inspection, public health nursing and teaching and dental hygiene. It is expected that the faculty will be elected at the same time. The board also decided to establish a department of dental hygiene in the Tuscaloosa school, at the urgent request of the dentists of the South, who will be expected to raise the endowment fund to carry on the work. Plans were discussed for the raising of the $6,000,000 endowment for the work in Panama and Alabama. Gorgas Memorial days are being conducted in the Southern States.

COLORADO

Hospital News.—The contract has been let for the new building for Fort Collins Hospital.——A new $250,000 unit will be added to the Methodist Sanatorium at Colorado Springs.

CONNECTICUT

Hospital News.—The nurses' home of the New Haven Hospital will be razed and a private ward building will be erected on the site at a cost of $400,000. It will be a four-story structure and fitted with all modern equipment.

DISTRICT OF COLUMBIA

Hay-Fever Control.—The Women's Welfare Association, Washington, has opened a hay-fever prevention clinic for the purpose of helping the working woman who cannot afford to be practically incapacitated for work during a month or six weeks during the year. Physicians will immunize patients with pollen weed serum treatments, and it is stated by the clinic physician that, according to the experience of men working in this field, from 25 to 30 per cent. of the patients given preventive treatment are cured.

FLORIDA

Hospital News.—The new nurses' home for the Norton F. Plant Hospital, Clearwater, will be opened early this month. ——The contract has been let for the new children's home at Tampa, which will be erected at a cost of $110,000.——The New Home Sanatorium recently held a formal opening of its new addition at Jacksonville.

Board of Health News.—The state board of health recently consolidated the Bureau of Venereal Disease with several activities, heretofore carried on by other bureaus, into the Bureau of Communicable Disease, with Dr. George A. Dame, who previously served in that capacity with the Bureau of Venereal Disease, as director. The divisions of the new bureau are: field service, consisting of the district health officers; venereal disease control; county health work, and epidemiology.——The state board of health, in conjunction with the International Health Board, recently conducted a hookworm survey in parts of the state and the data collected will be given to the Bureau of Child Welfare of the state board of health for an active campaign of education and treatment.——Dr. Fritz A. Brink, district health officer of West Florida, recently conducted an antityphoid fever campaign throughout Escambia County. Nearly 5,000 inoculations were made in three weeks.

GEORGIA

State Medical Meeting.—The annual meeting of the Medical Association of Georgia will be a "Home Coming Meeting," and will be held at Columbus, May 3-5, under the presidency of Dr. E. C. Thrash, Atlanta. All former Georgia physicians now practicing in other states are invited. A banquet will be given in honor of the former presidents of the association.

ILLINOIS

Personal.—Dr. George T. Palmer, president of the Illinois State Tuberculosis Association, gave an address at a special meeting of the Peoria Medical Society, March 29.——Dr. Manly H. Shipley has resigned as medical director of the Rockford Municipal Sanatorium.——Dr. Walter C. Bley has been appointed local surgeon of the Baltimore and Ohio Railroad at Beardstown, to take the place of his father, Dr. George Bley, deceased.

Epidemic of German Measles.—It is reported by the state health department that epidemics of German measles have recently appeared in rather serious proportions at a number of points in the state. Since January 1, there have been 661 cases reported from Oak Park, 156 from Cicero, ninety from Wilmette and twenty-five from Princeton. The outbreak has recently started in Princeton, eighteen of the twenty-five cases having been reported in a single day.

Hospital News.—Excavation has been started for the new nurses' cottage for the Soldiers' Home, Danville, to be erected at a cost of $37,000.——A new hospital will be erected at La Harpe at a cost of $100,000.——Bids have been asked for the construction of the new hospital building to be erected by the Christian County Tuberculosis Board at Taylorsville. The building will cost approximately $100,000.——Contracts have been let for a new hospital building connected with the Victory Memorial Hospital, Waukegan. It is estimated that $30,000 will be spent on equipment.——The contract has been let for the Ravenswood Hospital, to be erected at a cost of $300,000.

Indictments in License Scandal.—It is reported that the Cook County grand jury has voted a true bill naming William H. H. Miller, director of the Illinois Department of Registration and Education, K. A. Fries and Dr. N. Odeon Bourque on the charge of trafficking in state licenses. Fries is said to be Miller's son-in-law, and was appointed by Miller to a position in the department where he has sole charge of the educational qualifications of applicants and is in entire control of the machinery of the examinations. Dr. Bourque, who is prominently connected with the Chicago Medical School, is reported to have conducted an alleged review course in the "preparation" of candidates for state licensure examinations and to have "guaranteed" delivery of the licenses. A fourth defendant named was William S. Broniarczyk, who, it is reported, was given a pharmacist's license even though he failed in his examination.

Flood Conditions Serious.—It is reported from the state department of health that flood conditions have given rise to more or less serious sanitary problems at various points along the larger streams in Illinois. More than 100 families have already been made homeless at Beardstown, while more widespread inundations are feared. A sanitary engineer and a district health superintendent from the state department of public health have been stationed at Beardstown for service there, while a larger personnel is held in readiness for similar assignments should conditions grow more serious. The director of public health has notified officials in all cities along the Illinois River of flood dangers and has requested immediate telegraphic reports of any flooded conditions that may occur. A general warning to the public recommending that all drinking water obtained from sources subjected to pollution from flood waters be boiled has also been sent out.

Public Health Demonstrations.—Arrangements have been made by the state department of public health for carrying out a complete series of public health demonstrations in southern

Illinois. Carbondale, Harrisburg, Benton, Marion and Centralia are the places that will be visited. The program embraces trachoma, tuberculosis and orthopedic demonstration clinics, as well as demonstrations in medical inspection of schoolchildren and better baby conferences. The public health exhibit equipment from the department of public health will be on display. A number of lectures will be delivered by the physicians and others in charge of the program, illustrated with motion pictures and lantern slides. The program will be conducted under the auspices of the state department of public health, with the cooperation of the state deparment of public welfare, the Illinois Tuberculosis Association, local medical societies and other local agencies.

Chicago

Hospital News.—Plans have been drawn for a new hospital building to be erected by the South End Hospital Association.——Bids will close April 18, for the construction of a $100,000 addition to the Illinois Central Hospital.

Association for the Relief and Prevention of Heart Disease.—At a meeting held April 7, a Chicago Association for the Relief and Prevention of Heart Disease was formed to undertake the type of work carried on by similar organizations in New York and Philadelphia. The following officers were elected: president, Dr. James B. Herrick; vice president, Dr. R. D. Preble; secretary, Dr. Sidney Strauss, and treasurer, Mr. Frank O. Hibbard.

INDIANA

Hospital News.—The Methodist Hospital Association of Indiana will take over the Epworth Hospital, South Bend, in addition to the four institutions already included in the association.——A new pathologic laboratory has been opened at St. Anthony's Hospital, Terre Haute.——Plans have been completed for a $400,000 sanatorium and power plant, and have been presented to the county commissioners, Crown Point.

IOWA

Prison Sentence Remitted.—It is officially announced that Dr. Walter A. Matthey, Davenport, who was sentenced to one year in Leavenworth penitentiary, and to pay a fine of $1,000 for alleged violation of the espionage act, has had his sentence remitted by the President but will be required to pay his fine.

MAINE

Personal.—Dr. Charles W. Bell, Strong, has been appointed by the governor as medical examiner for Franklin County.

Hospital News.—A new cottage, to accommodate thirty-four patients, is under construction at the Northern Maine Sanatorium, Presque Isle, and will be opened about July 1. It is expected also to install roentgen ray and have a training school for nurses.

MARYLAND

Hospital News.—Work has been begun on the $600,000 clinic building of Johns Hopkins Hospital.——Work will soon be started on the McCready Memorial Hospital Building, Crisfield.——A hospital for contagious diseases will be erected at once near Lake Montebello.

Personal.—Dr. Lyman S. Abbott has been appointed a health officer at Baltimore City, and assigned to tuberculosis dispensary work.——Major Milton H. Foster, who has been in command of U. S. Veterans' Bureau Hospital No. 45 at Biltmore, N. C., has taken charge of U. S. Veterans' Bureau Hospital No. 56, Fort McHenry, Baltimore, succeeding Major Frank Gordon, transferred.

MASSACHUSETTS

Vaccination Bill Killed.—The bill extending the compulsory vaccination law to private schools was defeated in the House by a large majority recently.

Physician's License Stolen.—A letter from the Massachusetts State Board of Registration in Medicine says that Dr. John A. Sullivan, Pittsfield, reports that his license was stolen from his office, April 1, 1922.

Fine for Selling Hypodermic Needles.—It is reported that Chester Field, clerk in a surgical instrument store in Boston, was fined $2,000 in the criminal court as a penalty for selling twelve hypodermic needles to a police officer, to which charge he pleaded guilty. Dr. Goldthwaite, aged 71, owner of the store, recently pleaded guilty to giving a hypodermic needle to a police officer and was fined a similar sum. Both men promised to get out of the surgical instrument business.

Hospital News.—The contract has been awarded for an addition to the Holden Hospital, Holden, to be erected at a cost of $35,000.——The nurses' home of the new $1,000,000 Essex County Tuberculosis Hospital, Middleton, was destroyed by fire recently at an estimated damage of $20,000. ——The new private ward of forty-five rooms with baths, has been opened at the Children's Hospital, Boston. Certain suites are arranged so that mothers may live with their children.

Thorndike Memorial.—The anniversary of breaking ground for the Boston City Hospital, in 1861, will be commemorated in September by the completion of the Thorndike Memorial Laboratory, now being erected in the grounds of the hospital. This institution will be five stories high, will contain laboratories for research work and wards for the reception of patients whose cases, in view of their exceptional professional interest, will be the object of study and investigation. Dr. Francis Weld Peabody, professor of medicine, Medical School of Harvard University, will be director of the laboratory.

Personal.—Dr. Francis X. Mahoney, commissioner of health for Boston has been elected a trustee of the Baby Hygiene Association.——For the first time in Boston a physician will have charge of the penal and charity institutions of the city, which have been consolidated into one department. Dr. David J. Johnson has been appointed by the mayor as institutions commissioner.——Dr. Daniel J. Boland, Worcester, was recently the victim of a woman who forged his name for drug prescriptions, and stole the blanks from his office.——Dr. Frank A. Gardner, Salem, has been elected president of the Old Planters' Society.——Dr. Charles Eliot, president emeritus of Harvard University, spoke on "Prevention of Disease Through Animal Experimentation," at a public health conference in Boston, March 29, under the auspices of the Massachusetts State Federation of Women's Clubs.

MICHIGAN

Illegal Practitioner Convicted.—It is reported that Mrs. Augusta Kersten, Detroit, was convicted recently of practicing medicine without a license. Mrs. Mary Smock, a nurse from the department of health, was the chief witness for the state.

Personal.—Dr. Haven Emerson, New York City, gave an address on "The Value of Periodic Medical Examinations," under the auspices of the Kent County Medical Society, March 8, before a lay audience.——Dr. James E. Davis, professor of pathology, Detroit College of Medicine, has been appointed acting secretary of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.——Dr. Harry L. Clark, professor of bacteriology, Detroit College of Medicine, gave a public lecture on "Germs, Good and Bad, in Our Everyday Life," illustrated with lantern slides.——Dr. Heinrich A. Reye has been appointed neurologist to the Detroit Receiving Hospital.——Dr. Charles F. Smith has been appointed city health officer of Muskegon to succeed Dr. Cornelius J. Addison, who resigned recently.

Public Health in Detroit.—Detroit, in 1921, had the lowest death rate, the lowest infant mortality rate, and the lowest tuberculosis rate in the city's history. This record together with all other activities of the health department cost $1.62 per capita, of which 73 cents went to the Herman Kiefer Hospital alone. The principal causes of death during the year were: first, congenital debility, malformation and premature birth; second, organic heart disease; third, pneumonia; fourth, tuberculosis. It is interesting to note that the death rate from tuberculosis was 94 per hundred thousand in 1921, and 208 per hundred thousand in 1883. Venereal disease exceeded all other communicable diseases reported and amounted to 26.3 per cent. of the total reported cases; diphtheria was second in this group amounting to 15.6 per cent. of the total. Deaths charged to automobile accidents numbered 134 as compared with 173 in 1920. The population was 942,000, and the death rate 11.0 in 1921. These and other facts are expressed in a short story, "Detroit's Government," published by the mayor and common council in February, 1922.

MINNESOTA

Physician Appointed Mayor.—Dr. Henry B. Grimes, secretary of the Watonwan County Medical Society, has been elected mayor of Madelia.

Mayo Foundation News.—Dr. Charles H. Mayo, Mayo Clinic, Rochester, delivered the Joyce lecture in neurologic surgery before the Academy of Medicine of Portland, Ore., and the Jerome Cochran lecture before the Medical Association of the State of Alabama, at Birmingham, recently.——Dr. Henry H. Hazen, Washington, D. C., professor of dermatology at the George Washington and Georgetown universities, recently gave a lecture on "The Roentgen-Ray Treatment of Superficial Cancer" before the staff of the Mayo Clinic.

MISSOURI

School Fees Increased.—It has been announced that the fee for students at the Washington University Medical School, St. Louis, beginning with the new school year, will be increased from $200 to $300 per year. This applies only to new students.

Fenger Memorial Fund.—A grant of $400 has been allotted to Dr. Major G. Seelig, St. Louis, for extension of his work on some uses of magnesium in surgery. This work is being conducted in the surgical laboratories of the Washington University School of Medicine, St. Louis.

Hospital News.—A new sanatorium building will be erected near a newly discovered mineral spring, Springfield, at an estimated cost of $100,000.——Ground has been broken for the new $1,000,000 hospital, St. Louis, which the Sisters of St. Mary will erect. The institution will be seven stories high and will accommodate 200 patients.

NEBRASKA

Hospital News.—The Falls City Hospital, a plant which cost $125,000, has been closed for want of financial and professional support.—A new state institution will be erected at Burkett at a cost of $125,000.——A new hospital will be built at McCook.——The Platte Valley Hospital, North Platte, has been transferred to the Methodist Hospital Board. ——A community hospital has been opened in Nebraska City.

Society News.—The annual meeting of the Nebraska State Medical Association will be held at Omaha, April 24-27, under the presidency of Dr. Miles S. Moore, Gothenburg. The program will include addresses by Dr. John B. Deaver, Philadelphia, and Dr. George Dock, St. Louis.——At a meeting of the Adams County Medical Society held at Hastings, recently, Dr. Roy D. Martin was elected president and Dr. William T. Carson, secretary-treasurer.

Personal.—Dr. Harold Gifford, Omaha, has returned from a trip to British Guiana.——Dr. Joseph P. Weyrens, Alliance, has been appointed local surgeon for the Burlington Railroad. ——Dr. William H. Byerly, Franklin, who had a stroke last fall, has returned from Missouri, but is not yet able to resume practice.—Dr. Albert P. Fitzsimmons, formerly of Tecumseh, treasurer of the Philippine Islands and ex-officio director of the mint, Manila, has resigned and will return to Nebraska, by way of India, Palestine, Egypt, Italy, France and England.

NEW HAMPSHIRE

Personal.—Dr. Lester R. Brown has been appointed city physician of Laconia.——Dr. Howard T. Child has resigned as clinical director of the New Hampshire Hospital for the Insane, Concord.——Dr. Charles P. Bancroft and Dr. Harold J. Conner have been elected president and secretary, respectively, of the newly reorganized staff of the Margaret Pillsbury Hospital, Concord.

NEW JERSEY

Legislative News.—An amendment to the Workmen's Compensation Act was signed by Governor Edwards, March 15, providing increased medical treatment for persons injured in following their occupations. No special time is placed on the treatment of an injured working person, but under the old law only four weeks' treatment was allowed. Also provisions have been made for the compensation of physicians and hospitals in treating such cases.

NEW YORK

Physician Wins Suit.—It is reported that Dr. Walter G. Frey, Astoria, was awarded $2,500 from the Lutheran Cemetery Corporation, March 29. The suit was the result of an excavation made in the cemetery which exposed the body of one of Dr. Frey's parents.

New Facilities at Saratoga Springs.—Through the efforts of the Saratoga County Medical Society, the capacity of the Saratoga Springs bath houses has been enlarged and they have been thoroughly remodeled. The new baths were opened April 15, and have been equipped for giving hydrotherapeutic treatments.

Physicians' Licenses Revoked.—An official report from the board of medical examiners of the state of New York states that the board of regents recently revoked the license of Dr. Daniel J. Hoyt, New York City, following his conviction on the charge of violating the Harrison Narcotic Law.——The license of Dr. Julius Hammer, New York City, was revoked, it is reported, as a result of conviction of manslaughter.

Public Health Literature.—The February issue of *Health News* reports that, during the year 1921, the New York State Department of Health distributed approximately 450,000 pieces of printed matter, of which 275,000 were monthly bulletins; 27,000 health circulars and pamphlets; 36,000 baby books sent to young mothers, and twenty-three pamphlets giving suggestions to prospective mothers. A bibliography for health officers was prepared and given out to the health officers attending the annual conference.

Public Addresses to Aid Mental Health.—The mental hygiene committee of the State Charities Aid Association has obtained the voluntary services of thirty-one noted psychiatrists and other authorities on mental hygiene to deliver popular lectures throughout the state on this subject. These lectures are designed to emphasize the fact that mental health is within the reach of many people who are at present afflicted with mental disease. Speakers will be made available on application to Stanley P. Davies, secretary of the committee, 105 East Twenty-Second Street, New York.

Hospital News.—A new maternity ward, donated by Mrs. Thompson, will be erected at the Frederick Thompson Memorial Hospital at Canandaigua.——The contract has been let for a four-story building for Jamaica Hospital, Jamaica. Construction will begin this summer.——A new building will be erected as an addition to the Peekskill Hospital at a cost of $75,000.——The commissioner of public welfare has been authorized by the board of aldermen of New York City to make the improvements necessary at the Sea View Hospital, Staten Island, in order to accommodate tuberculous patients from the Fox Hills Hospital, recently abandoned by the government. The U. S. Public Health Service has agreed to pay the city $3 per day for each patient.

Menace Seen in Defectives Bill.—The Knight bill, to amend the mental deficiency law, now before the governor, has been condemned in a statement issued by Commissioner of Public Welfare Bird S. Coler, on the ground that it would overcrowd existing institutions in New York City, and cause a great increase in local taxation. The law permits any one to lay information before a magistrate, and to issue a warrant or summons for the arrest of a person, and if the magistrate believes the person is mentally defective he shall commit such a person for a mental examination. Mr. Coler's statement asserts that New York City, which has most of the state's 40,000 mental defectives, would be most affected. During 1921, it was said there were 269 commitments of defectives ordered which were not executed because of lack of room. With the signing of the Knight bill, 40,000 cases would be thrown on the hands of the state, swamping the state institutions, which have a capacity of 4,000.

New York City

Personal.—Dr. Louis M. Alofsin and Dr. Richard E. Gordon were elected president and secretary, respectively, of the Society of the Alumni of the French Hospital, at the reorganization meeting held recently.

Banquet for Woman Physician.—The dinner in recognition of her twenty-five years' public health service which was to be given Dr. Josephine Baker, April 20, at the Hotel Commodore, has been postponed until April 25. Dr. Henry Dwight Chapin is chairman of the committee in charge.

Hospital News.—Ground was broken by Dr. W. Gilman Thompson for the new eleven story addition to the Reconstruction Hospital, April 2. The plans of the new building provide space for 175 beds, and the total cost of the new annex will be $1,500,000.——The new $3,000,000 buildings of Mount Sinai Hospital were dedicated, April 9, when Myron S. Falk, chairman of the building committee presented the buildings for acceptance to George Blumental, president of Mount Sinai.——The convalescent home for Hebrew children at Rockaway Park was dedicated, April 9. The old buildings of this institution have been remodeled and two new wings added. The home is now open all the year for the care of convalescent and crippled children.—The First Institute of Podiatry has purchased a site at East One Hundred and Twenty-Fourth Street, where it will erect a clinic for the treatment of foot afflictions and conduct a school for the training of students in scientific podiatry.——The board of directors of the Bushwick Hospital, Brooklyn, contemplates the erection of a new wing to the hospital building at Putnam and Howard avenues.——Plans are being drawn for an addition, costing $90,000, to the Union Hospital.

OHIO

Hospital News.—The first step toward the construction of a new modern government hospital to replace the old U. S. Marine Hospital on Lakeside Avenue, Cleveland, has been taken.——The new Columbus Cancer Hospital will be erected in Columbus. The site has been leased for ninety-nine years by Dr. Charles F. Bowen.

Personal.—Dr. Oscar M. Craven, medical director of the Cincinnati Health Department, has been appointed health commissioner of Springfield.——Dr. Philip A. Jacobs, Cleveland, is in the hospital, suffering from an injured spine, incurred when he fell from his automobile.——Dr. John Osborn Polak, professor of obstetrics and gynecology, Long Island College Hospital, Brooklyn, spoke before the Columbus Academy of Medicine, March 16, on "Pelvic Inflammation and Social Diseases."

OREGON

Personal.—Dr. J. J. Lyon, Lakeview, is suffering from septicemia caused by being bitten while administering an anesthetic to a patient.——Dr. Augustus E. Tamiesie has resigned from the Eastern Oregon State Hospital, Pendleton, and will specialize in nervous and mental diseases in Portland.——Dr. P. I. Sharpe, Tillamook, suffered a broken leg and injuries to the head in an automobile accident, recently.

PENNSYLVANIA

Lectures on Medical History.—The College of Physicians of Pittsburgh has announced the institution of a series of lectures, one to be given each year, on the history of medicine. These lectures will be designated the "Bedford Lectures," in commemoration of Dr. Nathaniel Bedford, who was the first practicing physician of Pittsburgh. The first lecture of the series will be given by Dr. Clement R. Jones, April 27, 1922. It will have to do with the history of medicine in Pittsburgh.

Philadelphia

Philadelphia Health Day.—As a result of a conference between the officers of the Philadelphia Forum and a committee of the Philadelphia Health Day Organization, Dr. John B. Deaver gave an address at the Academy of Music, April 13.

Personal.—Dr. Ernest LaPlace, chief surgeon of the Misericordia Hospital and first American pupil of Dr. Louis Pasteur, spoke, April 7, at a discussion of Pasteur's discoveries in bacteriologic and pathologic science, in the auditorium of St. Joseph's College.——Dr. G. Canby Robinson, Baltimore, delivered the eighth Mary Scott Newbold lecture, April 5, at the College of Physicians, his subject being "The Therapeutic Use of Digitalis and Its Relation to Experimental Pharmacology."——Dr. David R. Riesman read a memoir of the late Dr. M. Howard Fussell at the College of Physicians, April 5.

Dinner in Honor of Dr. de Schweinitz.—A testimonial dinner in honor of Dr. George E. de Schweinitz, President-Elect of the American Medical Association, was held in Philadelphia, April 4, under the auspices of the Philadelphia County Medical Society. Dr. Hobart A. Hare was toastmaster. While all of the addresses were eulogistic of Dr. de Schweinitz, each speaker touched also on some problem of medical education. Dr. Hubert Work, President of the Association, congratulated the Association on the choice of Dr. de Schweinitz as his successor, not only for his genius as an ophthalmologist, but as a national recognition of the advancement of Philadelphia in American medicine. Dr. William C. Braisted, president of the Philadelphia College of Pharmacy, outlined the plans for the establishment of a national institute of therapeutics. Dr. Ross V. Patterson, dean of the Jefferson Medical College, considered the problems of medical education in Philadelphia and the possibilities of enlarging the scope of medical schools. Dr. John G. Clark, professor of gynecology in the Medical School of the University of Pennsylvania, made a plea for the expansion of the medical art, placing humanity before science. Because of illness Dr. Frank Hartman, president of the Medical Society of Pennsylvania, was unable to be present and Dr. Edward Martin, state commissioner of health, made an address for the physicians of the state. Dr. de Schweinitz in his response discussed some problems of medical education and made a plea for the advancement of a great postgraduate center in Philadelphia. He also emphasized the importance of recognition: that the medical profession be looked on by the public, "not as breadwinners eager for the dollar, but as men molding our lives to the saving of others." The banquet was held in the Bellevue-Stratford Hotel and more than 500 physicians who attended rendered enthusiastic tribute to Dr. de Schweinitz as a worthy leader in American medicine.

RHODE ISLAND

New Appointments.—Dr. Charles A. McDonald has been appointed neurologist of the Rhode Island Hospital; Dr. Charles S. Turner, visiting physician, and Dr. Nathan A. Bolotow, otologic extern of the hospital.

SOUTH CAROLINA

Traveling Dental Clinic.—The legislative delegation of Greenville County has authorized the county commissioner of health to establish a traveling dental clinic for the schoolchildren in the rural districts, for three months, to educate the children in dental hygiene. This is the first clinic of its type in South Carolina.

TEXAS

Personal.—Dr. H. Earl Rogers has resigned as a member of the Dallas City Health Department and will practice in New York City.

Hospital News.—A memorial hospital, a tribute to the boys of Hays County who fought in the World War, will be erected in the vicinity at a cost of $50,000.——A charter has been granted to the Sealy and Smith Foundation of the John Sealy Hospital, Galveston, the purpose of which is the construction, enlarging, remodeling, and equipping of the hospital buildings connected with the John Sealy Hospital.——The Rolston Hospital, El Paso, will be purchased for $130,000 by the Masonic Hospital Association.——The Lee Surgical Hospital, San Antonio, has been reorganized and remodeled and will in future be known as the Jackson Hospital, in memory of the late Dr. T. T. Jackson.——The contract has been awarded for a $150,000 building for the West Texas Baptist Memorial Sanatorium, Abilene.

WASHINGTON

King County Medical Society.—Sir Auckland C. Geddes, ambassador to the United States for Great Britain, gave an address before the society at a luncheon given in his honor, March 31.

Graduate Medical Lectures.—Dr. Hobart A. Hare, Dr. John B. Deaver, and Dr. William McKim Marriott will be the regular lecturers in internal medicine, surgery and pediatrics, respectively, in the Graduate Medical Lectureship at the University of Washington, Seattle, this year. They will give five lectures each.

WISCONSIN

Ruling Against Chiropractors.—The assistant attorney general has advised the secretary of the board of medical examiners that chiropractors cannot add the abbreviation "Dr." or "D.C." to their names while practicing in Wisconsin, as it is unlawful and in violation of the statutes.

Hospital News.—The Tri-County Tuberculosis Sanatorium, Salmo, will be enlarged to double its present capacity.——The cornerstone of the new $150,000 government hospital at Soldiers' Home was laid recently——The capacity of the Milwaukee Sanatorium, Wauwatosa, will be enlarged from seventy to 100 beds during the summer.——A new building at Sheboygan will be opened this month for the housing of a group clinic of thirty physicians.

Milwaukee Academy of Medicine.—The first of a series of illustrated lectures on tuberculosis to be given before the academy by Dr. Oscar Lotz was delivered, March 28, on "History and Significance of Tuberculosis." On April 4, Dr. Lotz spoke on "Tuberculosis Infection." On April 11, the subject was "Pulmonary and Other Tuberculosis." April 18, the subject will be "Treatment of Tuberculosis," and, April 25, "Prevention of Tuberculosis."

Personal.—Dr. Gerhard A. Bading, former health commissioner of Milwaukee, has been appointed by President Harding as minister to Ecuador, South America.——Dr. Edward L. Cornell, Chicago, delivered a lecture on "Cesarean Section" at the Hanover Hospital, Milwaukee.——Dr. Oscar Lotz was elected president of the Wisconsin Alumni Society of the University of Pennsylvania recently, to succeed Dr. James G. Taylor.——Dr. John G. Meachem, Sr., has been made chief of staff of St. Luke's Hospital, Racine.——Dr. Frederick C. Rodda, association professor of pediatrics at the University of Minnesota, gave an address before the Milwaukee Academy of Medicine, March 28, on "Hemorrhagic Diseases of the New-Born."

PORTO RICO

Personal.—Dr. Pedro Gutierrez Igaravidez, San Juan, has been made president of the Insular Board of Health.——Dr. William F. Lippitt, San Juan, is executive health officer.——Dr. Francisco Matanzo, San Juan, has been elected to the board of medical examiners.——Dr. Esteban Garcia Cabrera is now president of the Northern District Medical Society of Porto Rico.——Dr. José Mendín Sabat has been made superintendent of the hospital, Arecibo.——Dr. Eugenio Font Suarez is now superintendent of the Hospital Municipal, Santurce, San Juan.——Dr. Garry R. Burke is resident physician of the Presbyterian Hospital, San Juan.

CANADA

Medical Mission.—A medical mission has been organized at St. John's Garrison Church, Toronto, and was dedicated, March 4, in commemoration of the men of the parish who served overseas during the World War. The mission comprises a fee clinic for men, women and children, and is nonsectarian. Dr. John T. Fotheringham will be clinician-in-chief.

Society News.—The annual convention of the Canadian Radiological Society will be held in Winnipeg in June, in conjunction with the annual meeting of the Dominion Medical Association.——At the annual meeting of the Lambton Medical Association, held recently, the following officers were elected: president, Dr. W. R. Hamilton, Petrolia; vice president, Dr. William Reid, Wyoming, and secretary, Dr. Charles H. Smith, Petrolia.

Dr. Barnardo's Homes Association.—A building has been purchased by the council of the association in Toronto, through the agency of Albert Carless, F.R.C.S., late senior surgeon, Kings College Hospital, London, England, who lost both his sons in the war, in memory of them, and who is now devoting his life to the Barnardo work as medical director. This building will be the dominion headquarters. Twenty-seven thousand children have been brought from Great Britain to Canada by the association.

Public Health Meetings.—A joint meeting of the Executive Council of the Canadian Association for the Prevention of Tuberculosis and the Tuberculosis Division of the Department of Soldiers' Civil Re-Establishment, was held at Ottawa, March 17. Dr. Beland, minister of health, and Dr. Donald Armstrong, Framingham, Mass., delivered speeches.——The annual meeting of the Ontario Health Officers' Association will be held in Toronto, May 29-30. Dr. M. J. Rosenau will give an address on "Food Poisoning," and a symposium on "Milk," its production, pasteurization and distribution will be one of the features of the meeting.——At the last meeting of the Provincial Board of Health of Ontario, Dr. Adam Wright, chairman, was presented with a framed portrait of himself by Dr. Casgrain, which will be placed on the wall in the board room.

Personal.—Dr. Benjamin P. Watson, professor of obstetrics and gynecology, University of Toronto, will resign, to accept the chair of obstetrics and gynecology at the University of Edinburgh, Scotland.——Dr. John G. Fitzgerald, professor of hygiene, University of Toronto, and director of the Connaught Laboratories since 1913, has accepted an invitation from the University of California to take the chair of bacteriology and experimental pathology in that institution for one session.——Dr. William H. Pepler has been appointed representative of Trinity University, Toronto, in the Ontario Medical Council.——Robert D. Defries has been appointed director of the Connaught Laboratories, Toronto.——Dr. Margaret Patterson, Toronto's first woman magistrate, officially took her seat on the bench beside Magistrate Cohen in the woman's police court, March 6.——Dr. H. Ray Bulmer, Toronto, has been appointed medical officer for the London and Pacific Petroleum Company, Megritos, Peru.

GENERAL

American Society for Clinical Investigation.—The fourteenth annual meeting of the society will be held in Washington, D. C., May 1, under the presidency of Dr. Rollin T. Woodyatt, Chicago.

President Indorses National Hospital Day.—President Harding has endorsed the movement for the National Hospital Day to be held on May 12. In a letter to Matthew O. Foley, executive secretary of the National Hospital Day Committee, Chicago, Ill., the President says:

> I was pleased to learn from your letter that you are going to celebrate National Hospital Day again this year, on May twelfth, the anniversary of the birthday of Florence Nightingale.
>
> I feel that it is particularly worth while to continue this observance at present, because of some things which have lately come to my attention with regard to hospitals and hospital service, both in this country and abroad. America has led the world by a long way in the development and maintenance of modern hospitals, and in this regard our facilities are far superior to those of any other community. Yet, by reason of the extraordinary demands for care of the disabled men of the World War, we are a long way from adequate equipment. I have been told that in some of the European countries, where a very large hospital establishment was created to meet the requirements of the war, it has now proven almost impossible to secure the necessary endowment funds and community interest in these institutions, to keep them doing the great humane work which should be carried on by them, whether in war or in peace time. For myself, I have felt that in establishing the great hospital facilities which are needed for the soldiers, we will be providing ourselves with a facility whose usefulness will continue after the soldiers have been properly cared for and discharged. When that time comes I trust ways will be found to have these establishments utilized for the general interest of the community, through local associations similar to those that maintain so large a proportion of hospitals all over the country.
>
> One of the finest and most humane products of our civilization is the modern hospital, and every activity which aims to assure its advantages to an increasing number of people deserves all possible encouragement.
>
> Warren G. Harding.

LATIN AMERICA

Domínguez Decorated by France.—The *Revista de Medicina y Cirugía* of Havana relates that Dr. Francisco Domínguez of the editorial staff of the *Revista* has been appointed a commander of the Legion of Honor by the government of France.

Election of Officers.—The Academia de Medicina of Cartagena, Colombia, recently elected its officers for the year as follows: Dr. T. A. Tatis, president; Dr. Macario Paz, vice president; Dr. J. Caballero, secretary, and Dr. Ramón Pareja, treasurer.

Mexican Editor in the United States.—Dr. A. Brioso Vasconcelos, editor of the *Gaceta Médica de México,* treasurer of the Mexican Medical Association, vice president of the Mexican Yellow Fever Commission and one of the most prominent syphilologists in Mexico, is now in this country.

Hospital News.—A modern three story building is practically completed in Cartagena and will be leased as a hospital by an organization made up of Americans and Colombians. The building has a capacity of forty beds, and the staff will consist of four Colombian physicians, practically all of whom have had graduate work in American medical schools, and an American surgeon with four American graduate nurses. It is planned to have student nurses also. The staff is now in Cartagena ready to open the hospital on its completion.

Personal.—Dr. Luis Montané, professor emeritus of anthropology at the University of Havana, has been elected president of the French Société d'Anthropologie at Paris, where he is now residing. His address on assuming the presidency is reproduced in the *Revista de Medicina y Cirugía* of Havana **27**:239, 1922.——The *Brazil-Medico* reports that a group of leading physicians of Rio de Janeiro recently tendered a banquet to Dr. R. Pearce and Dr. F. Russell, both of the Rockefeller Foundation, and Dr. Carrigan, who were visiting in Rio at the time. Dr. Miguel Couto, president of the National Academy of Medicine, presided at the banquet, and addresses were made in English by Dr. C. Chagas, chief of the public health service, by the American ambassador and others.

Transactions of the Cuban Medical Congress.—The January issue of the *Crónica Médico-Quirurgica* of Havana is a stately volume of 343 pages, in white and gold cover, devoted to the recent Fifth National Medical Congress. It is profusely illustrated and records the impressions of the congress from an unusual number of points of view. It relates that the committee on social affairs offered a prize for the best collection of medical anecdotes, and the prize was awarded to Dr. J. A. López del Valle for his collection of sixty-six. A number of Havana medical institutions are also described and illustrated. An important study of legislation on infanticide in the different states of Latin-America, by Prof. L. Avendaño of Lima, was followed by adoption of a resolution on the subject. The Sixth Latin-American Medical Congress has been appointed to convene at Havana in November of this year.

The Sixth Latin American Medical Congress.—The Cuban congress has just granted an appropriation of $35,000 for celebration of the Sixth Latin-American Medical Congress, which will be held in Havana, November, 1922. According to information received from the secretary, Dr. Francisco M. Fernández, committees have already been organized in all Latin-American countries. There will be fourteen sections: biology, anatomy and pathology; bacteriology and parasitology; public health and demography; general medicine; tropical medicine; pediatrics; surgery; pharmacy and therapeutics; mental and nervous diseases, and legal medicine; ophthalmology and otorhinolaryngology; radiology and radium-therapy; odontology; veterinary medicine, and history of American medicine. The attendance fee is 10 pesos and the official language is Spanish. In connection with the congress there will be held a National Exhibition of Public Health which will remain open ten days or more. The previous Latin-American Medical Congress was held at Lima, Peru, in November, 1913. All correspondence relative to the congress should be addressed to Dr. F. M. Fernández, Prado 105, Havana, and all correspondence relative to the exhibition, to Dr. Antonio F. Barreras, San Lazaro 241, Havana, Cuba.

FOREIGN

New Indian Magazine.—The first and second issues have recently appeared of the *Madras Medical College Magazine.*

International Psychanalysis Congress.—The *Informateur* gives the address of the secretary of the committee of organization as Mr. J. C. Flügel, 11 Albert Road, London N. W. 1. The congress is to meet at Berlin, Sept. 22-25, 1922.

Scotch Medical Students at Paris.—A party of 100 medical students from Edinburgh arrived in Paris, March 19, and was received by Professor Brindeau and others, and given every opportunity to inspect the medical institutions of Paris.

Honor for Physician.—The gold medal of the British Medical Association has been awarded to Sir T. Clifford Allbutt, regius professor of physic in the University of Cambridge, England, for his distinguished services to the profession and the association, and in commemoration of his five years' presidency of the association during the World War.

Mount Everest Expedition.—Dr. A. M. Wakefield, Megantic, Quebec, Mr. T. Howard Somervell and Mr. T. G. Longstaff, both of London, England, are the three surgeons who will accompany the 1922 expedition to India in an effort to reach the peak of Mount Everest, alleged to be the highest point in the world, extending almost 30,000 feet above sea level.

Smallpox and Typhus in Germany.—The *Klinische Wochenschrift* records that there were only 685 cases of smallpox in Germany during 1921, to 2,095 in 1920. The proportion is about the same for typhus: 533 in 1921 and 1,103 the preceding year. There were only twenty-five cases of typhus among the settled population; the others were all imported cases.

Army Surgeon Banqueted.—The Madrid monthly, *Esculapio,* relates that a banquet was recently tendered Dr. Pagés on his return from the campaign in Mococco. Many of the guests were officials and soldiers on whom he had operated, including a lieutenant colonel who had been shot in the lung. Pagés is chief of the provincial hospital in the Melilla district.

Vacation Camps in France.—The *Presse Médicale* states that the president of the Touring Club of France has been elected president of the newly organized association to promote vacation camps and physical and moral training. The minister of war and the minister of hygiene sponsor the new association, and Commander Fabre has been appointed director of the vacation camps.

Congress for Professional Orientation.—It is announced that the persons interested in systamatization of ways and means to aid the young in deciding their choice of a trade, profession, etc., are to hold an international conference at Milan later in the year. Professor Ferran, Via Osservanza 34, Bologna, Italy, is the president of the committee of organization, and Dr. Mira, 5 rue Saint-Honorat, Barcelona, Spain, is the secretary.

Radiotherapy in Malaria.—The *Annali d'Igiene* mentions that seven leading physicians have been appointed by the Italian minister of the interior to form a commission for systematic study of the feasibility and efficacy of radiotherapy of malaria, alone or in conjunction with other therapeutic and prophylactic measures. Grassi is chairman of the commission, and Ascoli, Bignami, Gosio, Busi and Labranca are among the members.

Prize to Morgenroth.—At the recent meeting of the German Microbiologic Society, the annual prize from the Aronsohn Foundation, amounting to 25,000 marks, was awarded to Dr. J. Morgenroth, professor of bacteriology at the University of Berlin and chief of a department in the Koch Institute. The prize was given for his important contributions to bacteriology; in his address on receiving the prize he spoke mainly of his newer research on immunity and chemotherapy of streptococcus affections.

Resumption of Antialcohol Review.—The *International Review Against Alcohol* has resumed publication after a suspension of two years. It is to be now the organ of the International Temperance Bureau, with the same editor, Dr. R. Hercod, Avenue Ed. Dapples, Lausanne, Switzerland. The first issue of the new series contains four leading articles, including "Heredity and Blastophthoria," by Forel; "The Physician and Alcohol," by Gaupp, and "the Social Protection of Youth and the Race," a study of the effects of prohibition in the United States, by Saleeby.

The Pasteur Celebration.—The whole scientific world is commemorating this year the centennial of the birth of Pasteur, but Strasbourg is taking the lead in the celebration as he was professor of chemistry at the university there from 1852 to 1854. He was born at Dôle in the Jura, the son of a tanner, Dec. 27, 1822. Strasbourg plans two celebrations, one on the exact date, and another with great ceremony, June 1, 1923, when an exhibition will be opened, planned to demonstrate the progress that has been realized in consequence of Pasteur's discoveries, and the Pasteur monument will be unveiled. Prof. Borrel, 3 rue Koeberlé, Strasbourg, is in charge of the exposition to open June 1, 1923.

Permanent Committee of International Congresses for Military Medicine and Pharmacy.—At the recent first meeting of this committee, at Brussels, Bainbridge represented the United States; Stirling, Great Britain; Uzac, France; Van Baumberghen, Spain; Mauri, Italy, and Wibin and Voncken, Belgium. The latter is secretary of the committee, and Wibin, inspector general of the Belgian army, presided. It was decided to hold the next congress at Rome in May, 1923, and evacuation of the sick and wounded; the corporation of civil and military authorities; disinfection and disinsectization in war and in peace, and war wounds of the chest and their sequels, were the subjects appointed for discussion.

New Russian Medical Journals.—The *Medizinsky Vestnik* is now in its second year. It is published at Smolensk by the military authorities, and the January issue contains four leading articles by Skolowsky, Spassky, Bobroff and Kaloujsky on wounds of the femoral artery and vein, eye injuries, capillaroscopy and fracture of the femur. It has an abstract department with summaries of articles in seven other Russian medical journals as well as the German. The *Medizinskaia Misl* is published at Rostof on the Don, at its mouth in the Sea of Azof. The four leading articles in the first issue of the first volume, January, 1922, are by the professors of the local university, the successor to the University of Warsaw. Kastanian writes on "Constitution and Diathesis," and Emdin on "Epidemic Encephalitis and Parkinsonian Rigidity of Muscles." There is an extensive abstract department. The paper in these two medical journals just received is of the cheapest kind, the spelling is changed, and many words are abbreviated. This with the small and poor type makes the reading difficult, but the character of the contributions is high. The price of this issue of the Rostof journal is said to be 20,000 rubles.

Deaths in Other Countries

Dr. **C. Wallis,** professor of pathologic anatomy at the University of Stockholm until retirement in 1910, at one time president of the Swedish Medical Association, aged 77.——Dr. **V. Heiberg,** formerly professor of gynecology and obstetrics at the University of Copenhagen, member of the British Gynecological Society, aged 69.——Dr. **I. Saavedra** of Boyaca, Colombia, honorary president of the Fourth National

Medical Congress of Colombia.——Dr. **J. J. Kyle**, professor of chemistry at Buenos Aires until his retirement, president of the Sociedad Cientifica Argentina and of other societies, aged 84.——Dr. **F. Klein**, professor of physiology at the University of Kiel, aged 70.——Dr. **O. Gerlipp** of Berlin, organizer of the medical department of the ministry of labor in Germany, aged 52.——Dr. **Lausiès**, for many years a member of the city council of Havre and initiator of various movements for social welfare.

Government Services

U. S. Veterans' Bureau

The bureau will establish a vocational school at Chick Springs, S. C., for men suffering from certain types of nervous and mental diseases. District No. 5 is endeavoring to have this training center ready for operation, May 1, with at least 200 men assigned there by that date. Ground has been broken for a new $40,000 shop building, which the owners have agreed to have ready, and a complete survey is being made to determine the special classes of trainees that will be assigned to Chick Springs. Only single men will be sent to this school and they will be required to live in a dormitory provided by the bureau.——Blind trainees who are taking courses in poultry raising will be supplied with incubators and brooder stoves, at a cost not exceeding $125 for each trainee. Those taking massage will be given a Boston bag, an electric vibrator, one dozen surgical gowns, the outfit to cost not more than $75. If cigar makers, $45 will be spent to furnish each blind trainee with a bunch machine, a three-mold press, a rolling board, booking block, cutter, two cigar knives, a tobacco sprinkler and a stamp canceler. The blind man preparing to be a storekeeper will be provided with a standard typewriter or a cash register. There will be released to trainees in the rehabilitation division, on completion of training, whatever part of the equipment is necessary in their chosen occupations——During March, 29,953 cases received attention from the medical division and 805,517 claims for compensation for death or disability were filed, 15,526 being new claims.——It is announced that, under the land office ruling, no money may be refunded to trainees who have made part payment on homesteaded land and then have been forced to give it up owing to physical disability.——Eight tons of drug dispensary equipment have been sent to Portland, Ore., for the bureau there.——It is announced that 85,000 feet of floor space in the Grand Central Palace, New York City, has been leased for the U. S. Veterans' Bureau to consolidate the rehabilitation and the claims department offices at Seventh Avenue and Forty-Third Street, respectively. The new office will occupy the entire eighth and tenth floors of the building.

Hospitalization Bill Before Senate

The disabled soldiers' hospitalization bill passed by the house appropriating $17,000,000 for increased hospital facilities has been reported favorably to the Senate by the Public Building Grounds Committee of that body. Senator Fernald, chairman of the committee, declared that no changes were made in the house measure and that he would seek early action in the Senate.

Hospital for Negro Veterans

Assistant Secretary of the Treasury Clifford has announced that bids will be received May 1, for the construction of the new hospital for disabled negro war veterans at Tuskegee, Ala. The hospital, which is to cost $2,250,000, will have a capacity of 500 beds, of which 230 will be reserved for tuberculous cases and 270 for shell-shock cases. Actual work on the new institution will be under way by the middle of May, according to Treasury officials.

Marine Hospital at Cleveland

Representative Norton of Ohio has presented a bill to Congress providing for the sale of the marine hospital reservation at Cleveland, and the use of the money for the purchase of an additional site for the erection of a new United States Marine hospital.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 20, 1922.

The British Medical Association and the Voluntary Hospitals

The voluntary hospitals are peculiar to this country and their organization reflects the individualism of its people. Founded and supported by voluntary subscriptions for the treatment of the poor, they have, without state support or guidance, grown into great institutions for medical research and teaching, staffed by the élite of the profession. But social as well as medical conditions have gradually changed and much altered conditions. The greatly increased cost of everything since the war, combined with the high taxes of those who support the hospitals, has rendered their maintenance on the old lines impossible; hence, a general tendency to ask patients to pay at least a part, however small, toward the maintenance of the hospitals. Then the difficult question has arisen as to who are entitled to benefit. Formerly, the answer would have been easy; the persons who benefited were the working class in receipt of small wages, who, even if they continued working during the illness, could little more than maintain their families. Now wages are higher and the greatly increased cost of living, combined with the increased expense of modern treatment, has driven to the hospitals a class who may be able to pay the ordinary physician, but not the surgeon or other specialist. The position of the honorary medical staff which formerly gave its services gratuitously has been under the consideration of the British Medical Association for some years and this consideration has now been brought to a head by an elaborate report of the council prepared for submission to the next representative meeting. The report aims at the consolidation of the known policy of the association; many of the details have been adopted at previous representative meetings, and it has been endorsed by a meeting of representatives of the medical staffs of the hospitals, which has been just held at the invitation of the association.

The association recognizes a dual policy as regards voluntary hospitals: (*a*) that the purely charitable side should be continued, whereby indigent patients are maintained by gratuitous contributions and treated gratuitously by the honorary medical staffs; (*b*) that patients who are not indigent may be received when adequate treatment cannot be obtained elsewhere, and that for them payment should be received by the hospital, either from the patients themselves or on their behalf by the authority or body referring them to the hospital, and that for their treatment some method of remuneration of the honorary medical staff should be arranged. In view of the tendency of the state to require the services of the voluntary hospitals, the association holds that it should pay the full cost, including remuneration of the medical staff. On the other hand, the association admits that the voluntary method of administration is to the advantage of the public, medical science and the medical profession, and should be maintained. It considers that gratuitous contributions by employers or employees should be regarded as the payment of premiums for sickness; not as entitling to hospital treatment, but as charitable contributions to be expended at the discretion of the hospital. The association classifies hospital patients in three groups: "free" (indigent), "tariff" and "private." The first comprises those certified by the almoner or other officer as unable to contribute; the second those paying or for whom is paid the tariff cost of maintenance and treatment; and the third, those who pay for special accommodation and arrange for medical treatment independent of the hospital. The following scale is suggested, subject to economic and local variations:

Class 1. Limit of income, $1,250: (*a*) single persons over 16 years of age. (*b*) Widow or widower without children under 16 years.

Class 2. Limit of income, $1,500: (*a*) Married couples without children under 16 years of age. (*b*) Persons with one dependent under 16 years.

Class 3. Limit of income, $1,750: (*a*) Married couples with a child or children under 16 years. (*b*) Persons with more than one dependent under 16 years.

Persons with incomes above the specified scale may be received as private patients. The association holds that no tariff patient should be admitted without the recommendation of a private physician.

Augustus D. Waller, M.D., F.R.S.

Prof. A. D. Waller, director of the physiologic laboratory of the University of London, died recently from cerebral hemorrhage. The son of a famous physiologist, Augustus Volney Waller, whose name is perpetuated by his discovery of wallerian degeneration, he was born in 1856, at Paris, where his father was engaged in physiologic research. He was educated at the Collège de Genève and afterward at Aberdeen and Edinburgh. After graduation, he worked in the physiologic laboratory of University College, London, under Prof. Burdon Sanderson. He was appointed lecturer on physiology at the London School of Medicine for Women and afterward at St. Mary's Hospital. He gave up the latter post when the physiologic laboratory of the University of London was formed, mainly through his efforts. His most important researches were on the electric phenomena of the nervous system and heart. He was the pioneer of electrocardiology and first used the mirror galvanometer, then the capillary electrometer and finally the string galvanometer. He was the first to show that the electric current set up by the beating of the human heart can be recorded. His investigations of the electric currents in living tissues, especially in nerves and muscles but also in the skin and retina and in plants, are well known. The administration of chloroform and avoidance of deaths which occur under it engaged his attention. In his later years, he took up two subjects: the cost of muscular work as measured by the amount of carbon dioxid exhaled and the emotive response of man to pain and the threat of pain. In addition to various papers published in the *Transactions of the Royal Society* and the *Journal of Physiology*, he produced an "Introduction to Physiology," which reached a third edition, in 1896, and a book on animal electricity.

The Doctrine of Vitamins Attacked

The doctrine of vitamins has been attacked by two investigators, Captain Elliott and Dr. Orr, director of the Rowlett Institution. They have investigated the feeding of the larger domestic animals. They point out that stud books, milk records, and meat market statistics form an enormous mass of material for the student of dietetics which is checked by a system of postmortem examinations and serial sections, and that dietetic causes of disease may best be studied in animals. These investigators contend that the supporters of the vitamin theory do not lay enough stress on the need of all animals for mineral food, such as lime and phosphorus. The doctrine that rickets is due to deficiency of the vitamin fat-soluble A is controverted. They find that rickets can be produced in pigs by withholding certain salts, but the disease has no relation to fat-soluble A, as its absence does not produce rickets nor does its presence prevent the production of the disease. In sheep, a disease at least resembling rickets is known, but it occurs when food containing all the vitamins is supplied. As to man, it is pointed out that the shortage of butter and the wide use of margarin (which contains no vitamins) during the war was not followed by an increase in rickets.

Professional Secrecy

At the Medicolegal Society, Lord Dawson of Penn (formerly physician to the London Hospital) opened a discussion on professional secrecy, a subject which has been shown in previous letters to THE JOURNAL to be exciting a good deal of attention. He pleaded that the position of the physician was so unusual and the circumstances under which he gained his knowledge were so unique that protection in the interests of the public should be accorded to his evidence. This claim was not based on professional interests. It was not the privilege of the doctor but of the patient which was claimed. The public in the past had been under the conviction that what the physician was told was sacred, and, in a general way, that the obligation of secrecy would be respected in courts of law. They, therefore, received no small shock by the judges' rulings in recent cases. In one case, the ruling injured the whole fabric of venereal clinics. Unless those who attended had confidence that they could do so secretly, many would never attend at all. Privilege was already granted by statute to the lawyer and by practice to the priest, and was either permitted or ordained in foreign countries. Granted that medical privilege, even if properly limited, would occasionally result in failure to detect or punish the wrongdoer, it would be far better, in the public interest, that the ends of justice be defeated now and then than that the case of the sick should be prejudiced always. Lawyers were apt to think that the vindication of the law was the supreme interest of the state; whereas occasions occurred on which there were interests which overrode those of the law. He did not claim what was allowed to lawyers and to priests by practice—absolute privilege. Physicians did not forget their duties as citizens. What the measure of that privilege and its limitations should be could best be considered by a round table conference between physicians and lawyers, after the principle had first been conceded. Physicians appealed to the sister profession to consider the force of the plea and give it support.

Physician Convicted of Manslaughter in Consequence of Drunkenness

A physician has been convicted at the Durham assizes of the manslaughter of a miner's wife on whom he operated for eclampsia. The evidence showed that he visited the woman at 6:30 p. m., and her relatives refused to allow him to operate because they considered that he was under the influence of alcohol. About 10:30 he returned apparently better, and operated, administering chloroform with the assistance of his housekeeper. Those present believed that the patient was not completely under the influence of chloroform. After two hours he had not completed the operation (presumably forceps delivery, but its nature is not given in any of the reports). Another physician was then called. He made it a condition of attending that he should leave. He was of opinion that there was no necessity for the operation. The patient died two days later. At the trial, Dr. B. H. Spilsbury, the medical jurist, stated that it was unwise for the prisoner to operate single-handed. He could account for the injuries received by the deceased only as due to want of reasonable skill and care owing to intoxication. The judge passed a sentence of twelve months' imprisonment, intimating that he took into account the professional consequences which must follow the conviction.

PARIS

(*From Our Regular Correspondent*)

March 17, 1922.

The Crisis in the Army Medical Service

During the discussion on the drafting of the law on the incorporation of the 1922 recruits, in the chamber of deputies and the senate, the minister of war admitted that there was a shortage of physicians in the army. The medical corps is passing through a serious crisis due to the state of depression of its members. One of the most important causes is the term of their assignments. After the war, army physicians were continually being transferred. They were sent to take charge of a service for a month, then were transferred to another service for two months, and it became impossible for them to establish a residence with their families. Sometimes also they were ordered far away from Europe and separated from their families for two years or more. A great number of resignations were sent in, which had the disastrous effect of thinning the ranks of the medical corps immediately after the end of the war. The other cause is due to recruiting. A great number of young men forsake the career of army physician. Thus, in 1919, for 200 vacancies at the medical service school of Lyons, about 150 pupils were enlisted; in 1920, of 200 vacancies, 130 were filled; in 1921, of 200 vacancies, only 100 were filled. There have been also resignations among the pupils enlisted at the school. It is easy to realize how serious this shortage is, which increases every year.

Fatal Poisoning with Methyl Salicylate

At a recent session of the Société médico-psychologique, Dr. Legrain and Mlle. Badonnel reported an interesting case of poisoning with methyl salicylate taken by a patient with the intention of suicide. A quarter of an hour after the ingestion of 60 gm. of the product, lavage of the stomach brought back almost all, if not all, of the drug. To insure more complete elimination, the patient was given an emetic. Toward noon (the ingestion of the drug having taken place at 10 a. m.) the patient presented no grave symptoms and did not complain. She had several vomiting spells, and the vomitus revealed by its odor the presence of methyl salicylate. She had two or three stools in the afternoon. At 8:30 p. m., after another stool, she became pale and suffered nausea. The nurse gave her some tilia (linden flowers). She vomited it with bile and mucus which had a strong odor of methyl salicylate. Her breath was also impregnated with it. Soon after vomiting, the patient had convulsions that the nurse described as strong epileptic seizures. For approximately ten minutes, she was under violent and generalized convulsions. From that moment, the woman remained in a semicoma attended by occasional jerks. The extremities were cyanosed and the body covered with perspiration. Toward 1 a. m., the cyanosis had increased, and the patient died at 3:15 a. m. without a new seizure. This case is particularly interesting, not only on account of its uncommonness, but also because it clarifies the physiology and toxicology of methyl salicylate.

More than thirty years ago, Laborde's experiments on the toxic action of aromatic beverages made from natural or artificial essences furnished the means of classifying methyl salicylate among the epileptogenic poisons. On the basis of these experiments, clinicians, among them Magnan, were able to explain the epileptiform disturbances presented by drinkers of appetizers, especially vermuth, manufactured and aromatized with methyl salicylate. The fact had been so often confirmed by clinical experiments that it could no longer be doubted. However, the experimental proof on man was missing, and the gap has been filled by the history of Legrain's case. The time that elapsed between the ingestion of the poison and the appearance of final disturbances is to be noted. During these ten hours, the patient did not present a single alarming symptom. It follows that absorption of methyl salicylate is extremely slow (sodium salicylate is absorbed and eliminated more rapidly). This suggests that the use of the proper chemical antidote could, perhaps, prevent fatal accidents. The toxicity of methyl salicylate seems to be very high, for in this case the evacuation of the poison by lavage and emesis had been prompt and energetic, and only a relatively small quantity of the poison had passed into the intestine. It is true that the intoxication in this case was favored by insufficiency of the liver and kidneys, as necropsy showed. However, the case shows that methyl salicylate, prescribed sometimes for internal use as pills or potion, is far from being harmless and must be watched carefully.

Delivery of Bacterial Cultures

In the present state of things, bacteriologic laboratories can deliver bacterial cultures to any one asking for them. Monsieur Géo-Gérald, a deputy, believes that these conditions constitute a real social danger. On the one hand, it gives to criminals the means of accomplishing their designs; and, on the other hand, the manipulation of cultures, being particularly dangerous, should be surrounded with indispensable precautions that everybody is not always able to take. Monsieur Géo-Gérald has introduced a law intended to restrict the handling of bacilli cultures to establishments especially selected for the purpose. The delivery of cultures shall be either subject to an authorization by the ministry of public instruction, which will make an inquiry before delivering the necessary permit, or on the production of a prescription bearing the signature of a duly certified physician. Any inobservance of the law pertaining to the delivery of cultures will be punishable by a fine of from 500 to 5,000 francs and imprisonment of from one month to three years.

In Commemoration of Bretonneau

The teachings given by Bretonneau at the Hospice général of Tours during the last century will be commemorated in that city, June 24-26. One hundred years ago this remarkable clinician, who had begun his researches in 1818 on dothienenteritis (a term that Trousseau changed later to dothienenteria) affirmed the principles of the doctrine of specificity and wrote his treatise, which was not published until 1826, by Trousseau. To celebrate this centennial, a scientific committee has been formed including, among others, Achard, Gilbert, Jeanselme, Menetrier and Widal. The president of the committee on organization of the celebration is Professor Thierry, director of the school of medicine of Tours. A collection of all the documents concerning Bretonneau, his time and his pupils, will be on exhibition during the celebration. To obtain a membership card, the fee of 20 francs should be sent to Dr. Dubreuil-Chambardel, at the School of Medicine of Tours (Indre-et-Loire).

French Congress of Dermatology and Syphilology

The Société française de dermatologie et de syphiligraphie has decided to organize periodic international meetings. The first congress of French-speaking dermatologists and syphilologists will be held, June 6-8, in Paris. Those who can register their names as members are: members of national societies of dermatology and syphilology, and physicians interested in dermatosyphilologic questions who shall be accepted by the committee on organization. The membership fee is 60 francs. The congress will be held in the Hôpital Saint-Louis. The morning sessions will be devoted to the presentation of patients and to special communications; the afternoon sessions to the discussion of reports on the following subjects: (1) epidermomycosis (except tinea), Dr. Petges (of Bordeaux); (2) subacute inguinal lymphogranulomatosis of venereal origin (adenogenic venereal ulcer), Prof. J. Nicolas and Dr. Favre (of Lyons); (3) colloidal reactions in syphilis: reactions with colloidal gold, with gum mastic, and colloidal benzoin, Dr. Guy Laroche (of Paris). Membership fees should be sent before May 15, to Dr. Hudelo, 8 rue d'Alger, Paris.

Dangers for the Public in the Vulgarization of Medicine

Under the title, "Bibliothèque des connaissances médicales," the publishing house of Flammarion has launched the publication of a series of volumes on the "most interesting subjects in medicine." In announcing this work, Dr. Apert, director of the concern, states that these books will be edited in such a way that they will be not only interesting and useful to physicians and students, but also valuable to "the educated public having no special knowledge of medicine, but able, with a good general education, to understand special scientific subjects when they are clearly written." Dr. Apert says that, to accomplish this, medical language must be simplified. He does not conceal that the diffusion of a science in a concise manner when put in well intentioned but inexperienced hands might become dangerous, but he hopes to overcome this difficulty by better instructing the public. On examining the list of volumes that will make up the collection, one may doubt the usefulness of such an enterprise. While no exception might be taken to educating the general public with regard to such diseases as syphilis, one might hesitate to approve a program that includes such subjects as pericarditis, internal secretions, psychoneuroses, arterial hypertension, endocrine syndromes in children, and cardiac insufficiency. One might well ask whether persons "having no special knowledge of medicine" will be able to understand such subjects, and whether there is really any need of giving them information that may be misunderstood.

Furthermore, how can one book answer the same purpose for readers as widely different as physicians or medical students and the general public? One of the first volumes of this collection, entitled "Vaccines and Serums," was written by Dr. Apert himself, and is intended primarily for the physician. The *Journal des praticiens* comments: "Diffusion of such information should be restricted to the physician and the student, and it is regrettable that such books should reach the public. It does not understand, and this incomprehension complicates greatly the practice of medicine. . . . Dr. Apert's book will fill unprepared minds, in which everything will be mixed up in such a way that the supposed acquired knowledge will be veiled by undigested words and will fall in an avalanche of questions on the much surprised attending physician." Nearly a quarter of another volume, entitled "Diabetes Mellitus," by Dr. F. Rathery, is devoted to the pathologic physiology of diabetes, the notion of the "threshold of sugar," the origin of acidosis, etc. It is doubtful whether the public will be able to understand the gradual decomposition of diacetic acid, and its eventual transformation into beta-oxybutyric acid. At a recent session, the executive committee of the Syndicat des médecins du département de la Seine took up the question also concerning the popularization of medicine and, in particular, of therapeutics. Dr. Boyer called attention to the danger resulting from articles on therapeutics written by physicians in certain daily journals. Boyer believes that the popularization of practical and applied medicine is impossible and dangerous, especially when it deals in detail with the application of a therapeutic method, when mention is made of the superiority of a certain product or when the dosage of a medicament is given. The layman who has read such articles, proud of his inaccurate knowledge, will not fail to make and disseminate the grossest and most stupid errors. The executive committee of the syndicate approved Dr. Boyer's declaration and decided that the Commission d'étude de l'enseignement et du mouvement scientifique should follow carefully medical articles appearing in daily journals.

Information Concerning the War Wounded

The deputy Barthe has called the attention of the minister of war to the fact that certain army officers or heads of services, especially recruiting officers, have refused to furnish information concerning former wounded men to surgeons who operated on them, pretending that the rules do not allow the disclosure of such information to a third party. Barthe believes that such conditions are harmful, as operative results are of the utmost interest, and that the army should keep abreast of progress in surgery. The minister of war explained that the present rules do not allow information on medical certificates to be imparted by the health department to any interested party; but there is everything to gain in allowing the surgeon to obtain information concerning a patient on whom he has operated, and the heads of army corps and the recruiting officers should give to the surgeon, when they deem it advisable, the address of former patients whose recovery he is anxious to follow.

The Commemoration of Pasteur's Centennial

Having been invited to participate in the ceremony to be held in Strasbourg to commemorate the centennial of Pasteur's birth, the Academy of Medicine has decided to devote one of its sessions in honor of his work. As the Pasteur Institute intends to commemorate this anniversary on the exact date, Dec. 27, 1922, the Academy of Medicine has chosen December 26, the eve of the Pasteur Institute's celebration, in order that the same guests may participate in the two ceremonies. At the session will be presented data showing the progress accomplished since Pasteur's days in general biology, medicine, surgery, obstetrics, veterinary medicine and hygiene. Members of the academy who have been chosen to deliver addresses are: Widal, medicine; Delbet, surgery; Wallich, obstetrics; Barrier, veterinary medicine, and Calmette, hygiene.

Indulgence of Tribunals Toward Healers

The correctional court of Villefranche-en-Rouergue (department of Aveyron), in a recent judgment, declared that a healer is not guilty of illegal practice of medicine (without a physician's diploma) when his treatment is restricted to the laying on of hands to the diseased part, while invoking some mysterious and benevolent power. Under pretense that the healer believes he is able to communicate to the patient a power coming from some outside source, and for which he claims to be simply the instrument, the tribunal enunciated, as one of the reasons for its decision, the principle that:

> The nature, the power and degree of utilization of new forces of recent discovery have not yet been defined and demand great caution in refusing or accepting such phenomena which at first appear inadmissible, because they upset our present knowledge and habits. The tribunal is confused, it is true, by the certitude expressed by the witnesses, but has not been shown sufficient proof that the curative power in question is a reality; that, while admitting that cures were realized, it would be impossible to determine whether the therapeutic factor comes from the accused or is not the effect of autosuggestion in the patient, thus becoming his own healer.

The defective way in which the law of Nov. 30, 1892, bearing on the practice of medicine has been drawn up allows tribunals to be lenient toward all sorts of healers. By the terms of this article "all persons who have not been awarded a diploma of doctor of medicine, and who, as a rule, take part or give constant treatment in diseases or surgical affections" practice medicine illegally. Thus it is seen that, to practice medicine illegally and be susceptible of punishment, one must give constant treatment to a patient. The healer brought before the tribunal of Villefranche-en-Rouergue had advised two patients out of 8,000 to refrain from the use of medicaments and not to wear a splint. But these appeared to be isolated and accidental acts in the practice of the healer's profession, and the tribunal did not take them into consideration. On the other hand, the tribunal decided that, properly speaking, there had been no therapeutic advice given, and, moreover, each patient had been visited only once, and thus there had been no repetition of professional treatment on the same patient. In this case the law was not applicable. This proceeding shows clearly the weak points of the law, through which many cases of illegal practice of medicine may remain unpunished.

The Paris Congress of Mental Hygiene

The president of the executive committee of the international committee of mental hygiene (United States) has informed the Comité français d'initiative of the next congress of mental hygiene, which is to be held next June in Paris, that it is the intention of the committee, after complete organization of the international committee, to hold the first international congress of mental hygiene in the United States, the country in which the first mental hygiene body was formed and from which was created the French league of mental hygiene. The French committee to encourage the American undertaking decided that the congress that will be held in Paris will be called the Paris Congress of Mental Hygiene, and not the International Congress of Mental Hygiene, as it had been previously decided.

Homage to Professor Widal

Dr. Fernand Widal, professor of clinical medicine of the School of Medicine of the University of Paris, has been elected a member of the Academy of Sciences of Sweden.

MADRID

(From Our Regular Correspondent)

March 9, 1922.

Defects of the Human Body

Dr. Gimeno, count of Gimeno, former minister, member of the academy and ex-professor of the Medical School of Madrid, on being accepted as a member of the Royal Academy of Exact Physical and Natural Sciences, delivered a speech full of poetical images, historical quotations and learned allusions. Dr. Gimeno regretted the fact that the septum or screen function assigned to the diaphragm was apparently not discharged very well, its failure occasionally endangering health and even life. The place where the kidney is lodged is not tightly closed. Its two leaves separate and are only joined together above, remaining apart inside and also in the lower portion. The kidney is therefore like a purse hanging upside down and therefore liable to lose its contents. The ureter is far from perfect. The standing position has lengthened it, forming its pelvic portion and at the same time a narrow path across the iliac vessels. This is the price we have to pay for the privilege of standing on two feet. The cystic duct offers in Heister's folds an obstruction to the passing out of concrements. Perhaps it might have been desirable to have the masculine organs of generation inside the abdomen as in the cetacea, so that they would not pave the way to hernias when forced out. Dr. Gimeno has seen some patients die from lip carbuncles due to the ready connection of labial veins with facial veins and thence to the ophthalmic veins, enabling the germs finally to make their way to the cavernous sinus. He instanced many other faults of the human organism and touched on sensitiveness, saying, "As to pain, what is its cause? Is not pain, which embitters existence, being the father of sorrow and a brother to pessimism, due to the effect of a change, perversion or abnormality of sensation, depending for its causation on nerves and consciousness?" This is another defect, since it spoils life. Pain such as manifests itself, for instance, in birthpangs is entirely unnecessary. Coming to the senses, he commented on the readiness with which they mislead us. He recalled that smell admitted without protest the deathly carbon monoxid, enjoyed poisons such as chloroform and failed to notice most of the natural odors. Sight, he declared, is the sense which depends most on human invention to be really useful. The eye already begins to lose its power at the age of 10 years. He quoted Dr. Márquez, the professor of ophthalmology in the Madrid Medical School, to the effect that nature has forgotten to provide a reverse accommodation. Therefore, the eye can focus the nearest objects, only by increasing the curve of the crystalline lens, through the contraction of the ciliary muscle, and in order to adapt itself to distant objects must discontinue the contraction of that muscle. This is what causes shortsightedness in persons who cannot decrease the curve of the crystalline lens in order to diminish refraction. Put together all farsighted, shortsighted and astigmatic eyes, and you will see what few people enjoy a normal sight. In speaking of pregnancy, he recalled the general manifestations, the troubles that accompany it, which indicate the poisoning caused by the fetus and its appendages, against which even the mother's organism sometimes cannot defend itself. The human machine has been excelled by man made machines. The biblical clay was of good quality, but the product turned out somewhat imperfectly, perhaps as a punishment to our pride in considering the universe anthropocentric.

Typhus Fever Epidemic in Madrid

About ten years ago, there was a typhus fever epidemic in Madrid which caused over 1,000 deaths. Since that time, there have been no cases. Now the disease has appeared again and the sanitary authorities are chiefly to blame for its spread. The epidemic began in this way: the physician in charge of the infectious disease wards in the General Hospital of Madrid, Dr. Marañón, was informed that there was a case of typhus fever in the Segovia Inn. The truth of the report was verified by him. The Segovia Inn is a disreputable lodging house, where two or three hundred beggars sleep every evening, paying 30 *centimos* (about 4 cents) for the privilege. Dr. Marañón immediately asked the authorities (this happened over a month ago) to close the inn, after disinfecting the premises. The authorities, however, remained inactive. There are already seventy-five cases of typhus fever in the General Hospital and new pavilions will have to be equipped for typhus fever cases in the San Juan de Dios Hospital. The authorities finally closed the Segovia Inn when one of the habitual lodgers, on being taken sick, crawled to one of the sentry boxes at the very gates of the royal palace, whence he was taken to the General Hospital.

The General Inspector of Public Health Becomes Again a General Director

The office of general inspector of public health on its creation bore the name of "general director of public health." In order to place it beyond political influence, the name was changed to general inspector, the first incumbent being Dr. Martín Salazar. Now it has reverted to its original name, Dr. Salazar remaining in charge. We know this change in designation has pleased Dr. Salazar, but we have often seen with regret other so-called technical offices filled by politicians. It would be nothing short of a misfortune to have some department chief do the same in this case, placing public health matters in charge of some politician lacking all qualifications, but well provided with friends.

BUDAPEST

(From Our Regular Correspondent)

March 8, 1922.

Myopia in Hungarian Schools

At a recent meeting of the Budapest Medical Society, Dr. Tejer reported on an inquiry as to the prevalence of myopia in and around Budapest, in which 2,289 children were examined, and the results of examination of the various school classes were tabulated. In the first class, the cases of myopia amounted to 10.5 per cent.; in the second the percentage was 7, in the third 4, in the fifth 2, and in the sixth 0.4, showing a gradually increasingly percentage with the lengthened period of study. The speaker said the tables demonstrated the great influence of the school in the development of myopia. For a comparison, he also examined children of a few private institutions and found that there the percentage of myopia was only 1.1, a proof that the unfavorable hygienic conditions prevalent in the districts in which the children were living was the cause of the eye trouble. He observed very little follicular inflammation, and trachoma in a few cases only. There was one case of congenital cataract in a girl of 7, who had been looked on as idiotic. The affection had completely escaped the notice of the teachers. The school buildings have been inspected from a hygienic point of view and many of them condemned. Although new, the seats were oldfashioned, and compelled a faulty position. Some of the rooms were very dark, only one third of the area of one large room receiving direct light from without. The heating of all the schools was, so to speak, perfect, but on account of the street noises the ventilation had to be subordinated to comfort.

Venereal Diseases and Life Insurance

Dr. Low, chief physician of an important insurance company, has said, at a recent meeting of insurance physicians, that the history of an attack of syphilis in the antecedents of a person wishing to insure his life or to make some provision against sickness is always regarded as a detail of considerable importance, while, on the other hand, not much stress is laid on conditions of gonorrheal origin. It is, however, an open question as to which of the two diseases is more fraught with detrimental results to life and health. Syphilis, it is true, is credited with an alarming array of pathogenic possibilities, but in the great majority of instances, if it has been properly treated, life may run its normal course. In gonorrhea, however, more or less intense prostatic irritation occurs in a tangible proportion of cases, and more or less pronounced narrowing of the urethra is another complication which claims a comparatively large share of victims among the sufferers. If we reflect on the grave consequences of these lesions to the future health and even life of those affected, we may be tempted to ask whether, after all, gonorrhea is not, in the aggregate, more serious in its ultimate consequences than the much dreaded syphilis, and consequently more deserving of attention at the hands of examining physicians. It may be asserted with some show of reason that if syphilis is more menacing from the point of view of sickness, gonorrhea, by virtue of its secondary and far-reaching effects on the urinary tract, is more dangerous to life. The question is one which can be decided only by reference to statistics bearing on the frequency of complications and sequelae; but, unfortunately, no such statistics are available for the purpose, and each surgeon is fain to draw approximate conclusions based on his own experience. It is certainly a mistake to regard gonorrhea as a necessarily benign disease; for the frequency of one or another of its many complications renders it potentially grave. An uncomplicated attack of gonorrhea in which cure is effected is doubtless a detail of no particular pathologic significance, but it behooves practitioners entrusted with the responsible duty of examining candidates for life or sickness insurance to bear the possibilities in mind in arriving at a conclusion.

BERLIN

(From Our Regular Correspondent)

March 18, 1922.

The Campaign Against Sexual Diseases

The Berlin Medizinische Gesellschaft held a meeting, March 8, to discuss the draft of the law to combat sexual diseases, concerning which I gave a detailed account in a recent letter. Three months ago, the Berlin dermatologist Dr. Fritz Lesser, who, during the war, did excellent service in Warsaw in preventing the spread of sexual diseases, had introduced a resolution declaring that the Berlin Medizinische Gesellschaft, in the interest of public health, favored the continuance of the sanitary control measures. The society's committee on social politics called in experts to present the various phases of the question and thus aid in reaching a correct conclusion. Professor Grotjahn of the department of social hygiene has published a report of the transactions. He calls attention to the fact that the adoption of the bill as drafted would mean the actual abolition of the present method of police supervision, the so-called reglementation. He states that the system of reglementation is opposed to the principles of democratic government and the present constitution of the country in that it constitutes class legislation by bringing a certain group of women under the operation of a banning law. Physicians cannot consistently oppose the abolition of the system of reglementation unless they can furnish proof that the results of police supervision, from the standpoint of public health, are so remarkably good that such a violation of the rights of citizens is justifiable from the point of view of public welfare. The members of the society's committee did not become convinced that such is the case, although they had listened to the arguments presented by the supporters of this opinion. In addition, it should be noted that the bill, although it abolishes the system of reglementation, provides for other tried means of protecting the public health against the dangers of sexual disease in both sexes. The supervision is merely taken out of the hands of the police and put in the hands of the physicians and the public welfare department. The Berlin Medizinische Gesellschaft is in a position to welcome this development, since the bill meets the wishes of physicians, in that it provides measures to check the growth of charlatanry and makes venereal diseases notifiable, under certain conditions. The following resolution was accordingly accepted by the committee, with few dissenting votes:

> The Berlin Medizinische Gesellschaft attaches no value to reglementation, provided the new regulations in regard to the supervision of men and women who are suspected of spreading sexual diseases are of such a character as to include the application of all tried medical measures for the prevention of venereal disease.

The Causative Agent in Foot and Mouth Disease

For many years attempts have been made to discover the causative agent of foot and mouth disease, which works such havoc among cattle. Professor Löffler, late bacteriologist of Greifswald and afterward director of the Robert Koch Institute for Infectious Diseases, in Berlin, devoted much time to this problem. On an island near Rügen, a research laboratory was erected for him, where, with his assistants, he sought to find the causative agent of this disease. He also carried on investigations to discover methods of affording protection against infection with foot and mouth disease. According to the statement of Dr. Bumm, the head of the public health service, made before a committee of the reichstag, March 14, Oberregierungsrat Ditze, of the public health service, has succeeded in developing through two or three generations certain cultures with which he was able to bring about formation of complement in animals infected with foot and mouth disease. He was also able to protect animals against the disease by inoculating them with these cultures. Absolute proof that in these cultures the causative agent of foot and mouth disease is present has not been furnished, for it has not yet been possible to produce the disease in healthy animals by inoculating them with these cultures.

Women Students in the Universities of Germany

The number of women studying at German universities has still further increased, of late, in spite of the unfavorable prospects for the academic professions in general and for women students in particular. The number of women students, during the summer semester of 1921, reached the hitherto unattained level of 8,293. This year's increase is, to be sure, not as great as during the last few years. Those preparing themselves in medicine and for the teaching profession do not seem to be so much in preponderance as formerly. The major subjects that occupy women at the present time are: evangelical theology, 72, as compared with 40, two years ago; jurisprudence, 371, as against 380 two years ago; medicine, 2,013, as against 2,080; dentistry, 319, as against 165; philosophy and philology, 3,009, as against 3,070; mathematics and the natural sciences, 1,150, as against 1,174; pharmacy, 147, as against 101; political science and political economy, 1,212, as against 714. Berlin claims the largest number of women students, namely, 1,314; then follows Munich with 1,052 and Freiburg with 528. Frankfort and Bonn have, each, 422 women students; Hamburg has 421; Cologne, 414; Leipzig, 368; Heidelberg, 364; Breslau, 344; Marburg, 331; Münster, 321; Jena, 302; Göttingen, 293; Tübingen, 224; Königsberg, 205; Würzburg, 198; Halle, 173; Kiel, 160; Giessen, 131; Greifswald, 115; Rostock, 110, and Erlangen, 81.

Incidence of Smallpox in the German Empire

In 1921, 685 cases of smallpox were reported to the German authorities, as compared with 2,100 in 1920 and with 290, the average for the last five years before the war. When we consider how great the danger of contagion was under war conditions, especially on our eastern and southeastern borders, the foregoing figures must be regarded as extremely small. Doubtless this comparatively favorable showing is to be explained by the vigilance of the public health authorities at the borders and by the strict enforcement of the compulsory vaccination law throughout Germany.

Marriages

Arthur J. Fawcett, Glendale, Ore., to Miss Verl Cardwell of Myrtle Creek, Ore., at Roseburg, Ore., February 15.

Harold Albert Kent, Dorchester, Mass., to Miss Marjorie G. Munro of West Roxbury, Mass., March 22.

Edwin Aaron Sanborn, Somerville, Mass., to Miss Josephine C. Stebbens of Hanson, March 21.

William James Caesar to Miss Elsa Fredrika Bohman, both of San Francisco, recently.

Laban A. Steeves, Dallas, Ore., to Miss Martha Richardson of Portland, Ore., recently.

Paden E. Woodruff to Miss Mildred O. Cox, both of Pickens, S. C., March 22.

Arthur E. Smith to Miss Miriam H. Mitchell, both of Chicago, March 11.

Zalman J. Sabshin to Miss Sonia Barnhard, both of New York City, April 1.

Raymond Stenger to Miss Inez Worley, both of Marion, Ind., February 9.

Deaths

Henry Lowndes Lynah ⊕ New York; Medical College of South Carolina, 1900; a member of the American Laryngological, Rhinological and Otological Society and the New York Academy of Medicine; laryngologist to Willard Parker and Riverside hospitals; laryngologist and otologist to the Kingston Avenue Hospital; assistant surgeon to the New York Eye and Ear Infirmary; assistant laryngologist to the University and Bellevue Dispensary; chairman of the Eye, Ear, Nose and Throat Section of the Medical Society of the State of New York, and of the section on laryngology of the New York Academy of Medicine; well known for his work in bronchoscopy and esophagoscopy; died in Charleston, S. C., March 31, aged 43.

David Gifford Willets, Pleasantville, N. J.; Department of Medicine of George Washington University, 1907; formerly assistant in the Zoology and Hygiene laboratories, U. S. Public Health and Marine Hospital Service, Washington, D. C.; assistant professor of medical zoology, College of Medicine and Surgery, University of the Philippines, and assistant epidemiologist, U. S. Public Health Service; died, March 26, at Atlantic County Insane Asylum, Smiths Landing, N. J.

Porter Llewellin Chambers ⊕ New York; Bellevue Hospital Medical College, New York City, 1876; attending surgeon to the Presbyterian Hospital and Woman's Hospital, New York; consulting surgeon to the French Hospital and the Southampton (L. I.) Hospital; professor of gynecology, Columbia University, New York, and member of the Southern Surgical and Gynecological Association; died, March 26, from heart disease.

Robert Stephen Joyce ⊕ Ogden, Utah; Rush Medical College, Chicago, 1891; chief surgeon for the Utah Idaho Central Railroad and division surgeon for the Denver and Rio Grande Railroad, Southern Pacific and the Union Pacific Railroads; died, February 21, at the Thomas Dee Memorial Hospital, aged 54, from streptococcemia, resulting from an infected finger.

Eli Sheridan Persons, Slingerlands, N. Y.; College of Physicians and Surgeons, Baltimore, 1892; Long Island College Hospital, 1895; member of the Medical Society of the State of New York; former coroner of Schoharie County; suffered a fractured skull when he was run down by an automobile, March 21, and died, March 22, aged 54.

Stephen Warner Perry, Warwick, N. Y.; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1896; veteran of the Spanish-American War; served in the M. C., U. S. Army, during the World War with the rank of major; died, March 17, aged 47, at Bradentown, Fla.

Marjorie Irene Cameron, Pithajurain, Godaveri District, India; University of Illinois College of Medicine, Chicago, 1913; left for India in 1914 and served at the Women's and Children's Hospital, Corsanada, India, and later as a Baptist Medical Missionary at Pithajurain; died recently in India, aged 33.

James Rufus Bird, Brooklyn; College of Physicians and Surgeons in the City of New York, 1858; member of the Medical Society of the State of New York; one of the founders and consulting physician of St. John's Hospital, Brooklyn; died, March 27, aged 89, from senility.

Arthur A. Metcalf, Crystal Falls, Mich.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; member of the Michigan State Medical Society and the Washington State Medical Association; also a druggist; died recently, aged 68.

Harry Atwood Weymouth, Saco, Me.; Medical School of Maine, 1882, Portland; at one time city physician and member of the board of health; formerly mayor of Saco and member of the state legislature; died, March 18, aged 63.

William G. Safford, Tarkio, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; member of the Missouri State Medical Association; former mayor of Tarkio and president of the Pension Board; died, March 12, aged 71.

⊕ Indicates "Fellow" of the American Medical Association.

John P. Black, Greenfield, Ind.; Medical Department University of Indianapolis, 1885; secretary of the local board of health; president of the Hancock County Medical Society; died, March 16, aged 68, from cerebral hemorrhage.

John Endicott Chapin, Redwood City, Calif.; Washington University Medical School, St. Louis, 1909; was found dead in his office with a bullet wound in his head, presumably self-inflicted, March 24, aged 50.

Charles Theodore Sauer ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1885; laryngologist to the Methodist Episcopal Hospital, where he died, March 28, aged 57, from septicemia and pneumonia.

Onnie L. Deadwyler, Carlton, Ga.; University of Georgia Medical Department, Augusta, 1892; member of the Medical Association of Georgia; was killed in an automobile accident, March 18, aged 51.

John D. Slayden, Clarksville, Tenn.; Jefferson Medical College, Philadelphia, 1869; member of the Tennessee State Medical Association; veteran of the Civil War, died, March 24, aged 70.

Augustus Lee Faler, Buckland, Ohio; Eclectic Medical Institute, Cincinnati, 1905; died, March 17, aged 49, from toxemia, the result of malignant jaundice and pleuropneumonia.

Charles A. Griswold, New London, Conn.; College of Physicians and Surgeons in the City of New York, 1856; veteran of the Civil War; died, March 29, aged 91, in the Memorial Hospital.

George Warren Anthony Hess, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1908; served in M. C., U. S. Army; died, March 25, aged 36, from pneumonia.

Burrel J. Hubbard, Kaufman, Texas; Medical Department University of Louisville, 1891; member of the State Medical Association of Texas; died, March 23, from acute indigestion.

Leroy Stanton Hennen ⊕ Leetonia, Ohio; University of Nashville Medical Department, Nashville, Tenn., 1889; died suddenly, March 18, aged 53, from heart disease, in Toledo.

Elmer Lorenzo Sutherland ⊕ Sheridan, Mont.; University of Bishop College Faculty of Medicine, Montreal, Quebec, 1899; died, March 21, aged 48, at the St. James Hospital.

Alfred G. Davison, Cambria, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1871; Civil War veteran; died, March 1, aged 77, following a long illness.

Thomas Isaac Conwell ⊕ Mobile, Ala.; University of Nashville Medical Department, 1903; was found dead in his office at Chickasaw, March 20, aged 39, from heart disease.

McWalter Bernard Sutton, New Rochelle, N. Y.; University and Bellevue Hospital Medical College, New York City, 1905; died, March 30, aged 49, in Hamburg, Germany.

Oliver F. Gray, Spencer, Ind.; Medical College of Indiana, Indianapolis, 1878; member of the Indiana State Medical Association; died recently, following a short illness.

Jerome Levis Pyle, Tanguy, Pa.; Jefferson Medical College, Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; died, March 22, aged 64.

Max Reichman ⊕ Chicago (licensed, Illinois, 1895); former radiographer, Alexian Brothers' Hospital, Chicago; died, April 5, from carcinoma of the intestines, aged 56.

Henry Whisler, Wilmington, Ohio; Starling Medical College, Cincinnati, 1877; member of the Ohio State Medical Association; died, February 25, aged 86, in Sabina.

Anton Enger, Brooklyn; University of Christiania, Norway, 1897; member of the American Medico-Pharmaceutical League; died, March 22, aged 55, from pneumonia.

Charles Clinton Agin ⊕ Cincinnati; Miami Medical College, Cincinnati, 1875; founder and president of the West End Medical Society; died, March 22, aged 70.

Daniel R. Van Reed, Shelbyville, Ill.; Jefferson Medical College, Philadelphia, 1868; veteran of the Civil War; died, March 26, aged 76, following a long illness.

William Kilton Lackey ⊕ Ripley, Tenn.; Vanderbilt University Medical Department, Nashville, 1881; died, March 25, aged 64, from cerebral hemorrhage.

Issac Thomas Evans, Columbus, Ohio; Eclectic Medical College of Pennsylvania, Philadelphia, 1886; veteran of the Civil War; died, March 14, aged 80.

William Addison Richards, Morganfield, Ky.; Bellevue Hospital Medical College, New York City, 1879; died, March 3, aged 68, following a long illness.

Charles Edward Martin, Seward, Ill.; Rush Medical College, Chicago, 1891; member of the state legislature; died, March 22, aged 55, from pneumonia.

George Samuel Love ⊕ Waukesha, Wis.; Northwestern University Medical School, Chicago, 1894; died, March 31, aged 54, following a long illness.

Herman A. Richter, Garner, Iowa; Medical Department of the University of Wooster, Cleveland, 1891; died, March 16, aged 54, from arteriosclerosis.

Elmer E. Morgan ⊕ Fort Wayne, Ind.; Rush Medical College, Chicago, 1893; died, March 22, aged 60, at the Fort Wayne Lutheran Hospital.

George Henry Galbraith, Natrona, Pa.; Dartmouth Medical School, Hanover, N. H., 1862; veteran of the Civil War; died, March 25, aged 86.

William Turner Jordan, Driver, Va.; Medical Department of the University of New York, 1859; Confederate veteran; died, March 13, aged 86.

Glover Brown Wilcox ⊕ San Francisco; College of Physicians and Surgeons, Los Angeles, 1908; died, March 13, aged 43, from pneumonia.

John Erastus Weaver, Rochester, N. Y.; Medical Department of Columbia College, New York City, 1875; died recently, aged 74.

Wilson Marshall McClellan ⊕ Ashland, Ohio; Baltimore Medical College, 1895; served in the World War; died recently, aged 64.

Theophilus S. Bedwell, Dugger, Ind.; Medical Department Butler University, Indianapolis, 1880; died, March 11, aged 63, from paresis.

Elisha M. Cox ⊕ Fairmont, W. Va.; Medical Department of the University of Louisville, 1897; died, March 27, aged 58, from ascites.

George Waldo Bryant, Truckee, Calif.; California Medical College, Los Angeles, 1897; died, March 15, aged 47, from pneumonia.

Charles Henry Boyd, West Palm Beach, Fla.; Howard University School of Medicine, Washington, 1919; died recently, aged 31.

Hilary D. Rodman, Springfield, Ky.; University of Louisville, 1879; died, February 26, aged 68, from cerebral hemorrhage.

Corydon P. Gowman, Mount Airy, Md.; Detroit College of Physicians and Surgeons, Detroit, 1893; died, March 26, aged 60.

Andrew Henri Hart, New York City; American Medical College, St. Louis, 1880; died, March 19, aged 80, from heart disease.

John S. Bumpas, Mount Pleasant, Tenn. (licensed, Tennessee, 1889); died, March 19, aged 61, from cerebral hemorrhage.

Theodore H. Winans, Colorado Springs, Colo.; Chicago Homeopathic Medical College, 1888; died, March 17, aged 68.

Charles L. Green, Pasadena, Calif.; Medical Department of the University of the City of New York, 1864; died, March 14.

James A. Mairs, Browning, Mo.; Louisville (Ky.) Medical College, 1878; died, March 9, aged 66, from pleuropneumonia.

Clara Maria Sweet, Springfield, Mass.; Boston University School of Medicine, Boston, 1894; died, March 17, aged 62.

Jethro Davis, Monmouth, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; died, March 16, aged 55.

Albert Eugene Coy, Chicago; University of Michigan, Ann Arbor, 1884; died, April 4, aged 63, from heart disease.

John Hilman, Gallatin, Mo. (years of practice); Confederate veteran; died, March 14, at Hollister, aged 85.

Gilbert Shepard, Santa Cruz, Calif.; Hahnemann Medical College of Chicago, 1870; died, March 7, aged 83.

Harrison Neal, San Miguel, Calif.; Jefferson Medical College, Philadelphia, 1859; died, March 11, aged 87.

Earl Rodney Mellott ⊕ Toledo, Ohio; Toledo Medical College, 1912; died, March 23, aged 33.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

YEAST PREPARATIONS AND VITAMIN B CONCENTRATES

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following principles as a guide in the consideration of yeast preparations and vitamin B concentrates for New and Nonofficial Remedies.

W. A. Puckner, Secretary.

1. The claim that deficiency of vitamin B and diseases resulting therefrom are common conditions in the United States is not at this time supported by adequate acceptable evidence.

2. The claim that yeast preparations or extracts are, in principle or in general, essentially more effective or more practical or more available means of administering vitamins than the commonly available vitamin-containing foods is not at this time supported by adequate acceptable evidence. (Any claims for superiority made for such products proposed for inclusion in New and Nonofficial Remedies must be presented in detail and passed on specifically by the Council.)

3. The claim that therapy with yeast or yeast preparations has as yet more than an experimental status is not at this time supported by adequate acceptable evidence.

Preparations for which such claims are made, directly or by implication or in one-sided quotations, in advertisements or letters or by salesmen, cannot be admitted to or retained in New and Nonofficial Remedies.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Diemer's Manhood Tablets.—The Dr. F. W. Diemer Medicine Co., Springfield, Mo., shipped in November, 1919, a quantity of "Dr. F. W. Diemer's Manhood Tablets." When these were analyzed by the federal chemists they were found to consist chiefly of sodium bicarbonate (baking soda), reduced iron, a compound of zinc and phosphorus and small amounts of capsicum (red pepper), strychnin, and extract from a laxative plant drug. The trade package bore such claims as:

> ". . . Manhood Tablets For Sexual and Seminal Weakness . . . For Rheumatism, Neuralgia, Catarrh, Wasting Diseases, Nervous Debility, Impure Blood and all Kindred Diseases resulting from a Worn Out Nervous System."

These claims were declared false and fraudulent and in March, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment No. 9604; issued Dec. 22, 1921.*]

Santal-Miller.—The General Drug Co., New York City, shipped in June, 1919, a quantity of "Santal-Miller" to Chattanooga. The Bureau of Chemistry reported that analysis showed the product to consist essentially of santal oil flavored with oil of cinnamon. It was falsely and fraudulently claimed on or in the trade package that the stuff would cure or relieve gonorrhea, would lessen the discharge and would spare the patient the annoyance of a prolonged attack and relieve him from the pain resulting therefrom. In November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9611; issued Dec. 22, 1921.*]

Long's Kidney and Bladder Remedy.—William T. Long, trading as the William T. Long Medicine Co., Oklahoma City, Okla., shipped in May, 1919, a quantity of "The World's Greatest Kidney and Bladder Remedy" which was misbranded. The federal chemists reported that analysis showed the stuff to consist of a watery solution of acetic acid and tannin-bearing plant material. This product, which the evidence showed was made of vinegar and berries, was falsely and fraudulently represented as an effective treatment, remedy and cure for kidney and bladder trouble, gravel, Bright's disease, diabetes, bed wetting, female weakness, rheumatism and pellagra. In February, 1921, Long was found guilty and was fined $200 and costs.—[*Notice of Judgment No. 9614; issued Dec. 22, 1921.*]

999 Nerve Tonic.—The Combination Remedy Co., Pittsburgh, shipped from Pennsylvania to Maryland a quantity of "999 Nerve Tonic" which was declared misbranded. The Bureau of Chemistry reported that analysis showed the stuff to consist of capsules containing phosphorus and extractives of damiana and nux vomica. The box label bore the claim:

> ". . . The best possible remedy for nervous disorder and lost vitality, no matter from what cause."

This claim was declared false and fraudulent, since the article contained no ingredient or combination of ingredients capable of producing the effect claimed. In June, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9619; issued Dec. 22, 1921.*]

Banes' Female Pills.—Dr. Artilens Valerius Banes, who did business as the "Dr. A. V. Banes' Medicine Co.," St. Joseph, Mo., shipped in October, 1918, from Missouri to Kansas a quantity of "Dr. A. V. Banes' Female Pills" which were misbranded. Analysis by the Bureau of Chemistry showed the pills to consist essentially of compounds of calcium, magnesium and iron, and mercury, capsicum (red pepper), sugar and aloes. Banes' product was falsely and fraudulently labeled as an effective treatment, remedy and cure for disorders of menstruation, nervous headache, nervous prostration, general debility, indigestion, neuralgia, conditions due to change of life, etc., "when in truth and in fact it was not." In September, 1920, Banes pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 9631; issued Dec. 22, 1921.*]

KOLOR-BAK

A Hair Dye Exploited by Direct and Inferential Falsehood

"Kolor-Bak" is put on the market by the Hygienic Laboratories of Chicago, successors to the "Kolor-Bak Products Co." Here are some of the claims made for this preparation:

> "Kolor-Bak is in no sense a dye or stain."
>
> " . . . restores gray hair to the original color, no matter what it may have been; whether brown, auburn, red, blonde or black."
>
> "It is positively harmless . . . none of the injurious effects of many hair preparations can result from Kolor-Bak."
>
> ". . . nor is it one of those 'hair restorers' containing powerful mineral ingredients. . . ."
>
> ". . . to restore gray hair to its original color we must repair the pigment supply. That is what 'Kolor-Bak' does."
>
> "It stimulates the papilla to increased pigment production. . . ."

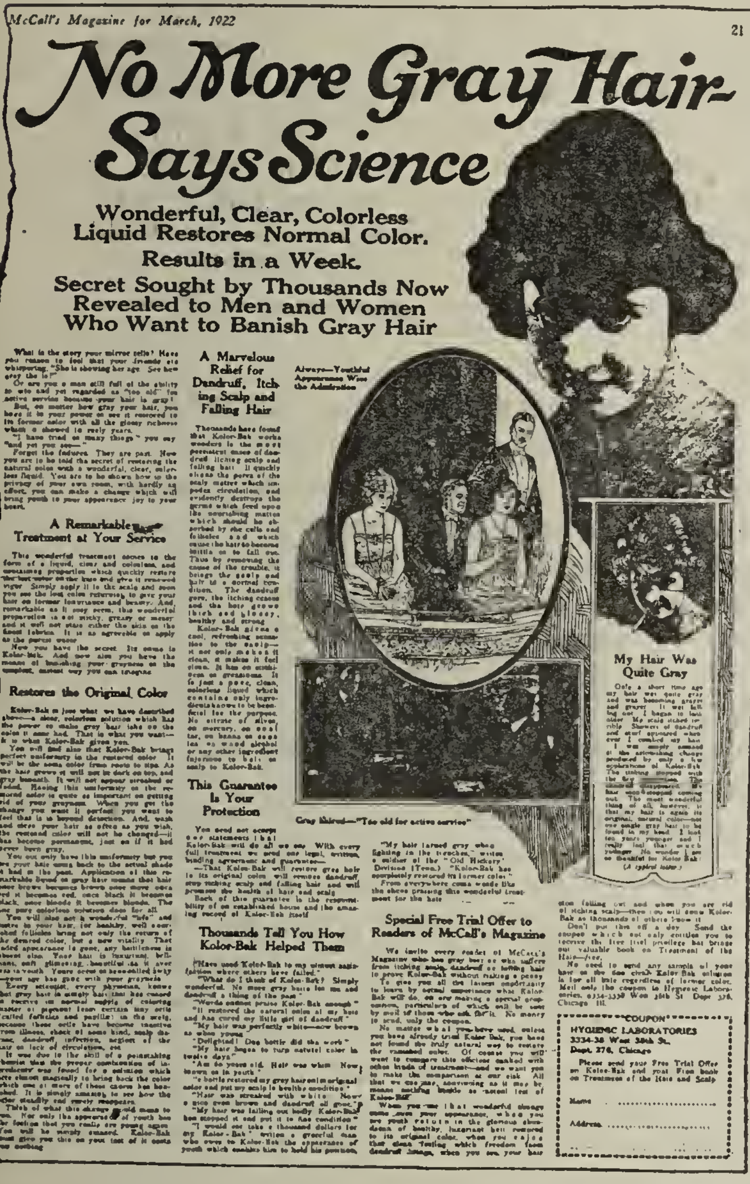
Probably because of the wide advertising campaign of this concern, The Journal, during the past year or two, has received a very large number of inquiries regarding it. It was finally decided to analyze the product. Specimens were purchased and turned over to the A. M. A. Chemical Laboratory, whose report follows:

"Specimens of Kolor-Bak, sold by the Hygienic Laboratories of Chicago, were examined. The presence of 5 per cent. of alcohol is declared on the label and the preparation is stated 'to be free from nitrate of silver, mercury, or any other ingredients injurious to the hair or scalp.' No other information concerning its composition was given. Kolor-Bak was found to be a colorless liquid containing a considerable quantity of a pale yellow powder, which resembled precipitated sulphur. The preparation had a slight acetous odor, an acid reaction and was faintly perfumed.

"Qualitative tests demonstrated the presence of precipitated sulphur, a lead salt, an acetate, a chlorid, a sodium salt, alcohol, glycerin and traces of a sulphate and of a calcium salt. Borax, cantharides, hydrogen peroxid, silver salts, mercury salts, pilocarpin, paraphenylendiamin or quinin—substances sometimes found in 'hair dyes' or 'hair tonics'—were absent, as also were nitrates, phosphates and carbonates.

Analysis indicated that different specimens of Kolor-Bak differed considerably in quantitative composition. Accordingly three separate specimens of Kolor-Bak were examined and the average results obtained in the analyses recorded. According to the analyses the composition of Kolar-Bak (in grams per 100 c.c.) is essentially as follows:

Lead acetate, U. S. P (sugar of lead)	0.60 gm.
Precipitated sulphur	1.00 gm.
Lead chlorid	0.16 gm.
Lead oxid (litharge)	0.20 gm.
Sodium chlorid (common salt)	0.60 gm.
Glycerol	2.00 gm.
Alcohol, by volume	4.8 per cent.
Water, sufficient to make	100 c.c.


McCall's Magazine for March, 1922 21

No More Gray Hair—Says Science

Wonderful, Clear, Colorless Liquid Restores Normal Color.

Results in a Week.

Secret Sought by Thousands Now Revealed to Men and Women Who Want to Banish Gray Hair

A Remarkable Treatment at Your Service

Restores the Original Color

A Marvelous Relief for Dandruff, Itching Scalp and Falling Hair

This Guarantee Is Your Protection

Thousands Tell You How Kolor-Bak Helped Them

Gray Haired—"Too old for active service"

My Hair Was Quite Gray

(A typical letter.)

Special Free Trial Offer to Readers of McCall's Magazine

COUPON

HYGIENIC LABORATORIES
3334-38 West 38th St.,
Dept. 276, Chicago

Please send your Free Trial Offer on Kolor-Bak and your Free book on Treatment of the Hair and Scalp

Name ....

Address ....

"The analytical results show that Kolor-Bak is a lead and sulphur wash. It is probable that lead chlorid was not a constituent of the formula for the preparation but that this compound was formed by interaction between the lead acetate and the sodium chlorid after the ingredients were mixed. Although the label declares that the preparation is free from 'any ingredients injurious to the hair or scalp,' Kolor-Bak contains lead acetate, a substance which is distinctly poisonous."

From the chemists's report it is obvious that each and every one of the claims quoted at the beginning of this article is specifically false. Kolor-Bak *is* a dye; it does *not* "restore gray hair to the original color"; it is *not* "positively harmless"; it *is* "one of those hair restorers containing powerful mineral ingredients"; it does *not* "repair the pigment supply," nor does it "stimulate the papilla to increased pigment production."

Medical literature contains references to cases of poisoning from hair dyes containing lead salts, and most standard books on therapeutics and pharmacology refer to this fact. In Peterson and Haines' "Text-Book of Legal Medicine and Toxicology" in the chapter on chronic lead-poisoning we read:

> "Most of the lotions called 'hair-renewers' are preparations containing sulphur and lead acetate or calcium plumbite. They do not restore the natural pigment, but cause the precipitation of black lead sulphid in the hair structure, so as to simulate the natural color."

Correspondence

"THE COEXISTENCE OF HODGKIN'S DISEASE AND AMEBIASIS"

To the Editor:—Our note on Hodgkin's disease and amebiasis (THE JOURNAL, Feb. 18, 1922, p. 532) has brought us additional material, including an inguinal gland from a patient with an intestinal infection with *Endameba dysenteriae.* This gland contains ameboid cells with pseudopodia which we interpret as amebas in the portion of the gland showing greatest disorganization. These amebas have a small, spherical, vesicular nucleus with a spherical, central karyosome and peripheral chromatin on the nuclear membrane identical in morphology with that of the ameba of human amebiasis. We have verified this determination by finding these amebas in the gland in several stages of nuclear division. This division is not that of the type in human cells but that of the rhizopodos, with intact nuclear membrane, a meridional intradesmose on the inner face of the nuclear membrane, and a small number of chromosomes, probably six. In dividing human cells in lymph glands of Hodgkin's disease, the nuclear membrane disappears entirely, there is no intradesmose, and the number of chromosomes in several cells in which we have determined it is not less than twenty-four. This morphologic and cytologic evidence is proof that *Endameba dysenteriae* is present in the hypertrophied lymph glands in Hodgkin's disease.

CHARLES A. KOFOID, PH.D.,
OLIVE SWEZY, PH.D.,
LUTHER M. BOYERS, M.D.,
Berkeley, Calif.

"BENIGN GIANT CELL TUMOR IN BONE"

To the Editor: — The editorial comment on this subject (THE JOURNAL, April) is important and valuable so far as it emphasizes the benign characteristics of this process, but is misleading in giving the impression of dealing with a neoplasm. The evident inspiration of the editorial is the excellent paper of H. S. Martland and the discussion it brought forth before the New York Pathological Society. I have been greatly interested in this particular type of bone lesion for a number of years, and beg the privilege of pointing out that the editor appears to have quite overlooked the "yolk of the egg" in discussing Martland's paper, when no mention is made of his statement that:

> From my observation in these two cases I am of the opinion that so-called benign giant cell tumor is entirely an inflammatory process in the nature of exuberant granulation tissue, located mainly in the myeloid part of the bone, formed as an attempt to repair previous bone destruction, due to trauma in the single lesions and in the multiple ones to some unknown cause.

For a number of years I have stressed the inflammatory character of these processes in numerous papers, covering the subject under the title "Hemorrhagic Osteomyelitis." The terms giant cell sarcoma and giant cell tumor are definite misnomers, because true tumor giant cells are never present in such lesions. The foreign body, or scavenger, cells that are present are generally well recognized as not possessing tumor-forming function. They are always found in greatest profusion in areas containing large amounts of sterile débris, which, it appears, it is their function to remove.

In the metaplastic tissue, or nonhemorrhagic areas, they are frequently absent altogether.

If pathologists would discontinue the use of the terms giant cell sarcoma and tumor in describing these inflammatory processes, and note instead the criteria the lesions present of an inflammation or osteomyelitis, there would be an immediate cessation on the part of the surgeons in performing radical or mutilating operations in cases of this type. Professor Ewing's sweeping statement that he knows of many cases in which patients have lost their limbs, and several that have lost their lives, from infection from bone cysts after exploratory incision and curettage sounds astounding and seems incredible of occurrence in these days.

One must agree that it is deplorable to think that, of thirty prominent surgeons present at the meeting in New York, twelve would have amputated for a lesion in the tibia described and shown them as a benign process. I hope that some of the twelve were from other cities. Most of the prominent New York surgeons are more or less familiar with the facts concerning the inflammatory nature of these cases.

George Barrie, M.D., New York.

[Comment.—The "yolk of the egg" was not overlooked by the editor, but the question of the real nature of these growths, whether inflammatory or neoplastic, was not made the subject of discussion in the editorial comment, the sole purpose of which was to emphasize rational conservatism in treatment. For the same reason the work of the correspondent on these growths, with which the writer of the editorial is fully familiar, was not considered. The question of nomenclature of the condition was considered carefully, and "benign giant cell tumor of bone" (perhaps it should have been "growth" in place of tumor) was selected as the most acceptable compromise at this time.—Ed.]

"MAGNESIUM SULPHATE SOLUTION AS AN AID IN ANESTHESIA"

To the Editor:—Under this caption is reported (The Journal, Nov. 5, 1921) a death that "could not be ascribed to any other cause than the anesthetic, and the evidence seemed to point to magnesium sulphate as the 'noxious agent.'" I doubt whether this death was the result of the anesthetic, or that magnesium sulphate was the "noxious agent." This doubt seems to be confirmed by the clinical picture as outlined: "persistent nausea and repeated vomiting, increase in the pulse rate and moderate elevation of the temperature, breathing labored," etc. Laboratory animals, when given a lethal dose of magnesium sulphate subcutaneously, are never distressed by persistent nausea and vomiting, nor is the breathing in man or animals ever "labored." In magnesium sulphate intoxication, after the subcutaneous injection the respiration gradually slows, becomes shallow, and finally ceases; while the heart still beats at a gradually diminishing rate.

The leukocytosis, pyrexia and high pulse rate would indicate an infection and a probable myocarditis with all the changes described, of cloudy swelling, fatty degeneration, etc., with a low output of urine, no doubt secondary to this cardiac insufficiency. Such insufficiency of the heart is a known complication following operation on patients with uterine fibromas.

Hyperglycemia and sometimes glycosuria with lowered carbon dioxid content of the blood follow the administration of any anesthetic. In the course of a study now being carried out on the metabolism of patients after various anesthetics, we have found practically no difference in the increase of blood sugar or the decrease of carbon dioxid between those receiving magnesium sulphate and those not receiving it.

Through the courtesy of the writer of the article, sections of the liver from the case reported were forwarded, and we have been unable to demonstrate anything beyond the usual postmortem findings. The statement that 5.33 gm. of $MgSO_4.7H_2O$ was found in the liver postmortem, above the normal magnesium content, we cannot understand.

The normal magnesium content of the blood and of the liver is in the neighborhood of 3 mg. per hundred cubic centimeters. The highest concentration in the blood that we have found after the administration of 16 gm. (in the fatal case, 12.4 gm. was given) of $MgSO_4.7H_2O$ is 11 mg. per hundred cubic centimeters. One patient receiving 16 gm. died of hemorrhage on the operating table. The liver in this case contained 3.75 mg. of magnesium per hundred grams. The size of the liver in the fatal case is not given; but, if it weighed in the neighborhood of 3,000 gm., it would have to contain 20.8 mg. of magnesium per hundred grams to account for 5.33 gm. of $MgSO_4.7H_2O$ above the normal.

We have never advised the routine use of magnesium sulphate in anesthesia—no anesthetic should be used as a routine—but its use undoubtedly reduces the amount of an inhalation anesthetic. When nitrous oxid and oxygen is used with magnesium sulphate and morphin, it practically eliminates the necessity of ether and provides a quieter and more comfortable recovery, when the patient's energy should be devoted to regaining a normal condition and recovering from the shock of the operation rather than to the elimination of or to repairing the damage from the anesthetic.

James Greenough, M.D., New York.

"IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?"

To the Editor:—I read the article by Dr. Cummings on control of diphtheria with much interest. It brought back to me vividly the introduction in 1893 in New York City of the culture test as a means of detection of diphtheria bacillus carriers. It seemed to me at that time that, if we could definitely differentiate between the carriers of bacilli and those who were free, we could look for the cooperation of the physicians and of the general public in isolating the infected cases. The culture test was applied in New York City during the two years preceding the introduction of antitoxin. The results were somewhat disappointing. The discovery that in addition to the sick and convalescent cases about 2 per cent. of the child population of the city was infected with diphtheria bacilli, that a single clear culture was inadequate to establish the freedom of a throat from bacilli, and that this infected population was changing daily, explained our failure markedly to lessen the number of diphtheria carriers, and convinced us that cultures were of real value only for help in diagnosis and in indicating the source of danger in families and institutions. It seemed to us absolutely impracticable to try to make cultures from all the children every few days, and to have under isolation on the average 20,000 persons.

As with the other respiratory infections in which carriers abound, we realize the impossibility of preventing the general dissemination of the pathogenic micro-organisms throughout a city's population. Dr. Cumming states that if a people is protected by a vaccine there will be a considerable increase in the number of carriers. So far as I know, there is no evidence to support this opinion. There is, on the other hand, a great deal of evidence that pathogenic bacteria living in carriers become gradually attenuated. Cities therefore need not fear that, if diphtheria is reduced to a minimum, they will "become reservoir hosts of bacilli." In New York City we have during the last two years made an especial endeavor to reduce diphtheria. There has been a surprising drop in the deaths from the disease, but an apparent slight rise in the cases. This increase in the reported cases we believe to be due to the interest aroused, which has caused the reporting of many very light cases. While in 1918 and 1919 there were in each year more than 1,200 deaths, there were but 1,045 in 1920 and but 891 in 1921. We believe we can still further reduce both the morbidity and the mortality from diphtheria.

Dr. Cumming agrees that by intensive work with antitoxin and toxin-antitoxin we can cut the present death rate in half and lessen equally the cases. It seems to me wise to continue to the uttermost methods which have already accomplished so much and bid fair to accomplish much more, rather than to curtail these and wait for what he suggests for "the mass sanitary protection of the populace subconsciously practiced by the people at all times."

William H. Park, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STAIN FOR GONOCOCCI—EPINEPHRIN IN LIQUID PETROLATUM

To the Editor:—1. A year or two ago, a stain was described in The Journal, with technic for gonococcus. The stain was said to be permanent. In what issue can I find the technic and composition of the stain?

2. I also wish to know how epinephrin can be dissolved in liquid petrolatum without separation (as in "Adrenalin Inhalant," P. D. & Co.).

A. H. R. Krueger, M.D., Chicago.

Answer.—1. Stains were described by:

Burke, Victor: The Gram Stain in the Diagnosis of Chronic Gonorrhea, The Journal, Sept. 24, 1921, p. 1020.

Israeli, Clara: Demonstration of Capsule-Like Appearance in Staining Gonococci, The Journal, May 28, 1921, p. 1497.

2. Epinephrin itself is insoluble in liquid petrolatum; it, or one of its salts, may be dissolved in alcohol, and this solution then mixed with castor oil (which is miscible with alcohol). In the case of "Adrenalin Inhalant," the free base epinephrin ("adrenalin") is not used, but instead the hydrochlorid ("adrenalin chlorid"), which first is probably dissolved in alcohol (the preparation contains 13 per cent. alcohol) before being added to the oily base.

EFFECTS OF STERILIZATION ON MAN

To the Editor:—To what extent is the sterilization of man practiced? What effect has sterilization had on its subject: (*a*) on his physical well being; (*b*) on his mental acumen; (*c*) on his moral conduct?

J. E. Minney, M.D., Los Angeles.

Answer.—Sterilization of mental defectives, habitual criminals and the incurably insane, authorized by legislative enactment in fourteen states of the United States in the decade beginning 1907, is now seldom performed, so far as we know. No study of those so sterilized to determine the possible effects on mind or body has been published.

During the early years of the current century, vasectomy, with incidental sterilization, was widely practiced on elderly men for the relief of the bladder troubles consequent on prostatic obstruction to the exit of urine. Neither mental nor physical effects were regularly registered in these patients, aside from those obviously due to relief from physical distress.

Two years ago Steinach, a Vienna physiologist, published a monograph entitled, "Verjüngung" (rejuvenation). In this he detailed the effects of sterilization on old rats, secured in his earlier work by ligation and section of the vas, in his later experiments by severing the vasa efferentia (coni vasculosi) leading from testis to epididymis—"Steinach's operation." The alleged advantage of this procedure over vasectomy is that it avoids injury to the artery of the vas deferens, the smallest of the three arteries through which the testis receives its blood supply. Steinach states that senile rats submitted to either operation, unilateral as well as bilateral, were rejuvenated mentally, physically and sexually; even that their bald spots grew hair. A Vienna surgeon declares that he has secured similar results in elderly men, including the hair restorer feature, by ligating and severing the vas at its emergence from the globus minor of the epididymis—which operation he adopted after a trial of the Steinach method.

As these statements do not accord with the extensive observation of the effects of vasectomy on elderly men to which reference has been made, the rejuvenating influence of sterilization, on men at least, is yet to be established. The slender hope that the Steinach method might, by avoiding injury to the small artery of the vas, achieve results impossible through vasectomy is shattered by Steinach's statement that identical benefits were secured in rats by the two operations.

The really extensive sterilization of men has been achieved not by the knife, but by the gonococcus; yet no extended study of the effect on mind and body of such unintentional occlusion of the seminal ducts is recorded. The general impression—and it is only that—among urologists seems to be that these men have at least lost nothing in mental, moral or physical integrity.

TERMINAL DISINFECTION

To the Editor:—Does fumigation with formaldehyd gas possess any potential value, and is it not a myth to assume, as is currently believed, that germs attach themselves to all sorts of fomites, from which in turn contagious diseases may be contracted? Bacteriologists say that we have all been wrong in believing any emanation or contagion could attach to clothing. If such is a proved fact, why all the tomfoolery and expense incident to fumigation, unless for its psychologic effect? Does it not seem about time to discontinue fetish worship and exorcism by fumigation of evil spirits in the form of disease germs, as inconsistent with modern ideas of scientific preventive medicine?

T. H. Pleasants, M.D., Lewiston, Mont.

Answer.—Discussions on this subject appeared in this department of The Journal, Jan. 15, 1916, p. 209, and March 12, 1921, p. 745. The value of routine fumigation of rooms as a means for preventing the spread of infectious diseases has been questioned of late years. The experience of the health authorities at Providence, R. I., extending over many years, indicates that the abandonment of room disinfection is not followed by any noticeable increase in the number of secondary cases. In New York and in several other cities terminal disinfection has been omitted since 1913 in cases of scarlet fever and in several other diseases. It is now the general belief that the germs of acute infection of the respiratory tract do not survive very long outside the body. The trend of the recent investigation has been to show that the main danger of infection is by direct transmission from convalescents, mild cases and healthy carriers. Better results are likely to be obtained in preventing the spread of most infectious diseases by giving attention to the human sources of infection rather than by resorting to frequent fumigation with a germicidal gas. It is generally accepted as a fact that formaldehyd will destroy bacteria, including the familiar pathogenic germs, on the surfaces of objects in an atmosphere containing at least 60 per cent. of moisture and at a temperature above 50 F. To summarize: There is ground for believing that the share of inanimate objects in spreading disease is not so great as at one time supposed, and that the available evidence indicates that pathogenic bacteria discharged from the body die off rather quickly under the influence of drying, oxygen and sunlight. In view of the fact that the virtual abandonment of routine gaseous disinfection in a number of cities has not been followed by any measurable increase of communicable diseases, terminal disinfection is not being employed unless the materials used with the patient have been considerably soiled by discharges from his body.

Malaria Rate Reduced.—Cooperative antimosquito work in forty-five towns located in ten southern states has reduced the malaria rate from 75 to 90 per cent. according to announcement of the U. S. Public Health Service. Combating of malaria fever in Spain and Dutch East Indies by the government health authorities has been successful by the adoption of a new method. This method is simple. It is based on the principle of refusing to allow sufferers from malaria to remain in the region over night lest they infect the malaria-bearing mosquitoes, which feed only at night. The theory is, of course, that if mosquitoes cannot find a malaria patient to bite they cannot acquire malaria germs and therefore cannot pass it to well persons.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

Georgia: Atlanta, May 31 to June 2. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

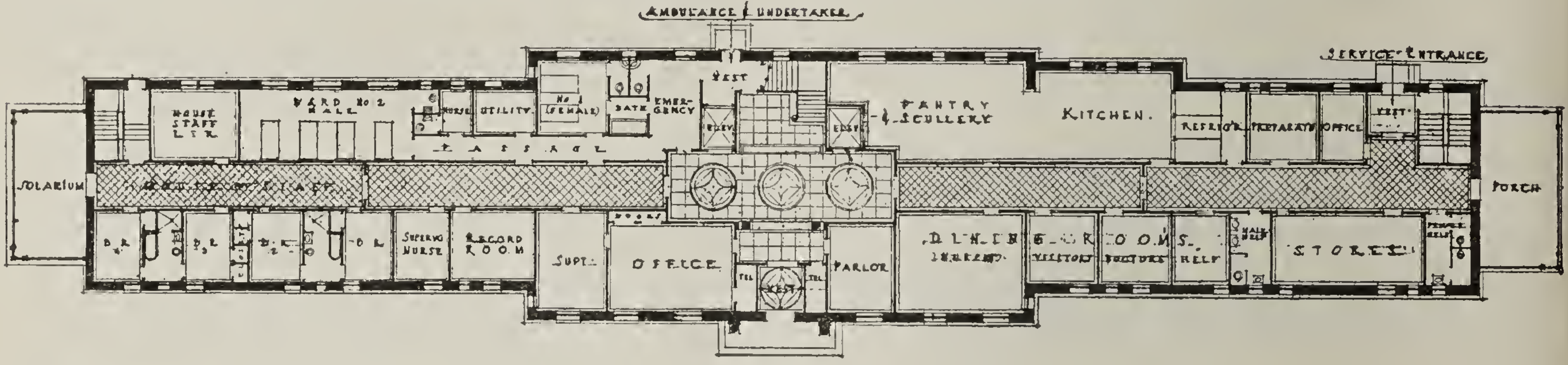
Nevada: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

A ONE HUNDRED BED HOSPITAL

ROBERT J. REILEY
Architect
New York

The hospital shown in the accompanying floor plans was designed to occupy a large plot of ground facing an avenue running north and south. The length of the building has therefore been placed parallel to the avenue—or, in other words, the building faces east, so that the rooms on the front of the house get the morning sun; those on the rear get the afternoon sun. No room, except the operating room, faces the north.



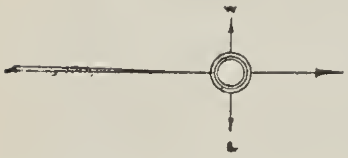


Fig. 1.—First floor plan.

The requirements called for a general hospital with a total of about 100 beds, arranged in single and double rooms, but without the use of large wards except for children and infants. The nurses' living accommodations were provided for in a separate cottage on the grounds. No dispensary is maintained in connection with the hospital.

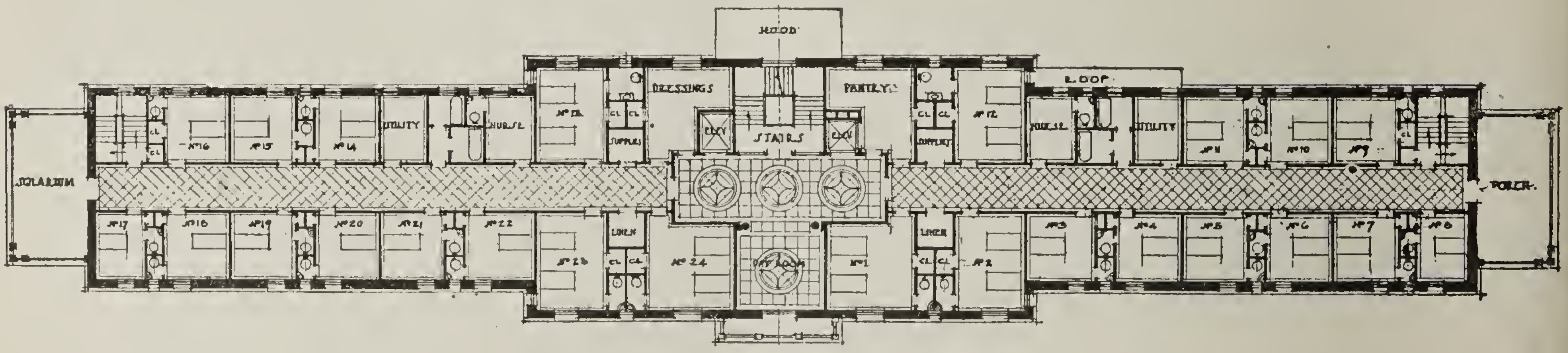


Fig. 2.—Second floor plan.

The main entrance is at the center of the building, and leads into a foyer off which opens on the right a parlor, and on the left the general office. Directly opposite the entrance is the main stairway, on the left of which is a passenger elevator large enough to accommodate a bed.

On examining the plan, it will be seen that the south wing on the first, or ground floor contains, adjoining the general office, the office of the superintendent of the hospital, the record room and the office of the supervisor of nurses. These rooms form the unit for general administration. At the extreme south end of this floor, quite by themselves but at the same time readily accessible, are the rooms for the resident staff of physicians. A living room and sun porch are provided for them, as well as four bedrooms with bath between each two rooms.

The entrance for ambulance cases is at the rear of the building, where there is an emergency room with bath room and toilet adjoining, from which access may be had to the elevator without passing through the main foyer. The same entrance would be used by the undertaker, and the morgue and necropsy room are placed below in the basement. There is a hood over this entrance so that it cannot be readily seen from the windows of the hospital.

Connected with the emergency room by a private corridor are two wards for the reception of patients, with a nurses' room and utility room centrally placed between them. The reception department is, therefore, entirely separated from the rest of the hospital and forms a self-contained unit.

The north wing on the first or ground floor is devoted to service, all foodstuffs coming in at the end of the wing, and the food, after preparation, is served through the pantry at the center of the building to the dining rooms on the first floor or through the service elevator to the upper floors. The kitchen and all its accessories are therefore entirely above ground, receive direct sunlight, and the routing of the food is such as to do away with unnecessary walking back and forth.

On the second floor there are two units, one occupying the north and one the south wing of the building, with the features common to the two in the center. Each unit contains nine rooms of one bed each and three rooms with two beds, or a total of fifteen beds in each unit, and thirty on the floor. Opening off each patient's room is a small toilet room which contains a toilet and wash basin with a cabinet above for toilet articles. There is also a small clothes closet in each room.

Each unit also includes a nurses' utility room, centrally placed, two patients' bath rooms and a nurses' room where the records, medicines, etc., will be kept, with a toilet for the nurse adjoining. The push button at the patient's bed flashes a signal in this room, while at the same time it lights a light in the corridor over the bedroom door and in the office of the supervisor of nurses. There is an enclosed stairway or fire tower near each end of the floor, off which opens a maid's closet for brooms, mops, etc. There is a linen closet and supply closet in each unit. At the south end the corridor leads to a solarium and at the north end to an open porch.

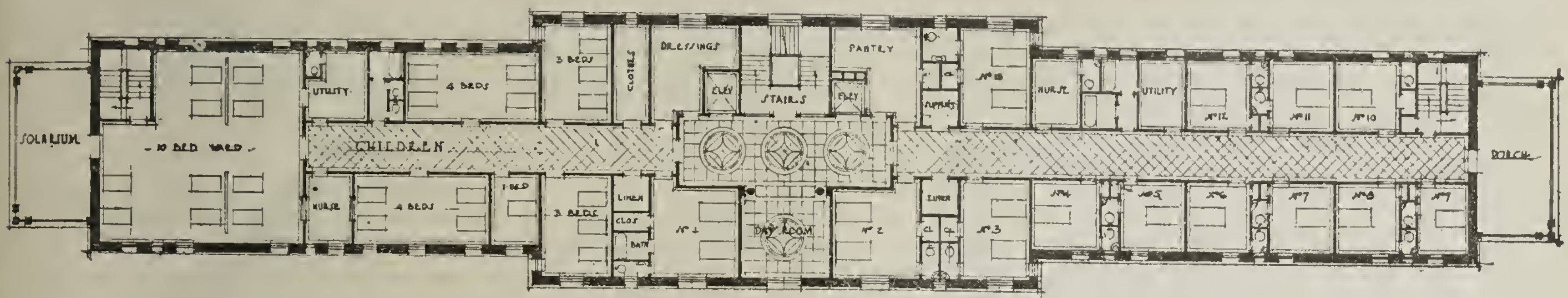


Fig. 3.—Third floor plan.

In the center of the building, where the main stairs and elevator land, is a foyer, opening off of which are the rooms used by both units in common, namely, the day room for patients, the serving pantry, and the room for surgical dressings. As there are doors separating this foyer from the corridors leading to the patients' rooms, the difficulty of maintaining quiet in the corridors is greatly lessened.

At the north end of the third floor is a unit which is identical with the one below it on the second floor; the south end of this floor is devoted to the children. The children's department consists of one ward of ten beds, two wards of four beds each, two wards of three beds each, and an isolation room with one bed, or a total of twenty-five beds. The large children's ward is divided by glass partitions around the beds, and the nurse is so placed that through the glass partitions forming her room she may easily see a large number of the children's beds. In this department there is a large closet, with window, for storing the children's clothes.

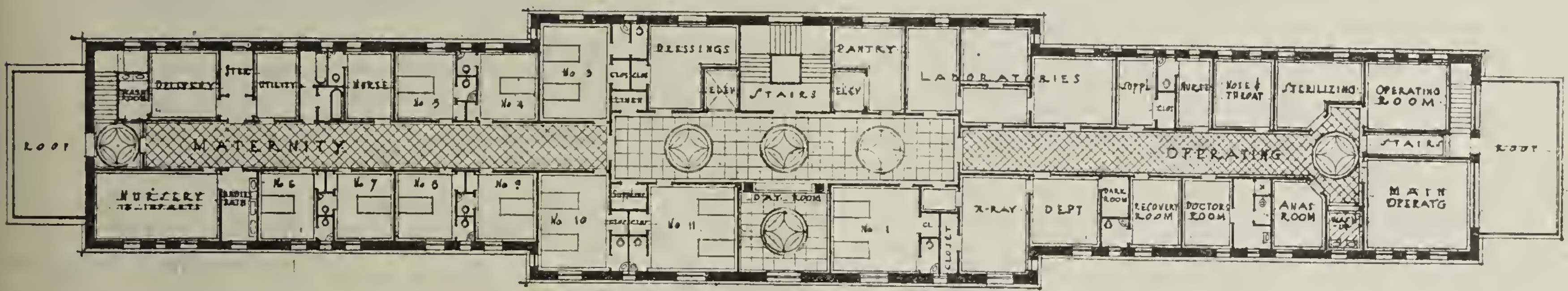


Fig. 4.—Fourth floor plan.

On the fourth floor, the north wing contains two main operating rooms, one for clean and one for pus cases, with large skylights facing the north. A smaller operating room adjoins these two. The sterilizing room is adjacent to the operating rooms and is well ventilated so that the heat may be kept out of the operating rooms. The surgeons' wash up and the anesthetizing room are near by, and the next rooms opening on the corridor are the physicians' room, the supply room, the nurses' room and a recovery room.

The roentgen-ray department adjoins the operating department, but opens off the foyer so that it is readily accessible from the elevator. The laboratories are similarly placed, but are on the opposite side of the corridor. The laboratory unit is made up of four rooms, which may in general be designated as the bacteriologic laboratory, the chemical pathology laboratory, the room for the washing of vessels and sterilizing, and the office where the records and supplies are kept.

The south end of the fourth floor is devoted to maternity cases. This department contains six rooms with one bed each and five rooms of two beds each, or a total of sixteen beds. The delivery room with its sterilizing room is placed at the far end of the wing, and is entered through a vestibule to insure quiet. There is also a wash-up room adjoining the delivery room at the opposite end from the sterilizing room. The nursery for fifteen infants is a cheerful room in the southeast corner of this floor, with bath room adjoining with special slabs for the bathing of infants. There is also a solarium and day-room on this floor for waiting mothers.

In the cellar are located the heating and mechanical equipment plant, the sterilizer for mattresses and clothes, the morgue and necropsy room and the general store rooms. As there is ample ground around the building, as well as solariums and porches on every floor, the roof is not used; but in a more congested city, it could, of course, be employed to good advantage.

It may be said in general that the building has been designed to obtain the maximum of sunlight, to save unnecessary steps for attendants, and to provide a place for everything while eliminating waste spaces, all with the aim in view of aiding the hospital to accomplish its primary function of caring for the sick.

477 Fifth Avenue.

New York May and June Examinations

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports the written examinations held at Albany, Buffalo, New York and Syracuse, May 23-26 and June 27-30, 1921. The examinations covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 646 candidates examined, 577, including 2 osteopaths, passed, and 69, including 7 osteopaths, failed. The following colleges were represented:

PASSED

College	Year Grad.	Number Licensed
University of Alabama	(1911)	1
Yale University	(1919), (1920, 2)	3
George Washington University	(1921)	4
Howard University	(1911), (1912), (1920, 2), (1921)	5
State University of Iowa College of Medicine	(1920)	1
University of Louisville Medical Dept	(1902), (1914)	2
Tulane University	(1921)	1

Johns Hopkins Univ.	(1917), (1919), (1920, 3), (1921, 3)	8
University of Maryland	(1918), (1921, 2)	3
Boston University	(1920)	1
Harvard University	(1918, 2), (1919, 2), (1921, 2)	6
Tufts College Medical School	(1919), (1920)	2
Detroit College of Medicine and Surgery	(1919)	1
University of Michigan Medical School	(1918, 2), (1919, 2)	4
St. Louis University School of Medicine	(1921)	1
University of Nebraska	(1918)	1
Albany Medical College	(1921)	17
Columbia University	(1917), (1919, 5), (1920, 2) (1921, 80)	88
Cornell University	(1919, 2), (1920), (1921, 32)	35
Fordham University	(1918), (1920, 3), (1921, 53)	57
Long Island College Hospital	(1921)	66
New York Homeopathic Medical College and Flower Hospital	(1916, 2), (1918, 2), (1921, 33)	37
New York Medical College and Hospital for Women	(1915)	1
Syracuse University	(1920), (1921, 25)	26
University and Bellevue Hospital Medical College	(1915), (1917), (1919), (1920, 7), (1921, 88)	98
University of Buffalo	(1920), (1921, 57)	58
Eclectic Medical College	(1921)	5
University of Oregon	(1919)	1
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1920)	1
Jefferson Medical College	(1917), (1920), (1921)	3
University of Pennsylvania	(1919), (1920, 4), (1921)	6
University of Pittsburgh	(1919)	2
Woman's Medical College of Pennsylvania	(1920)	1
Vanderbilt University	(1916)	1
Baylor University	(1920), (1921, 3)	4
University of Vermont	(1920, 3), (1921, 3)	6
Medical College of Virginia	(1915)	1
University of Virginia	(1921)	1
McGill University	(1903), (1918), (1919)	3
Queen's University	(1916), (1918, 2), (1919), (1921)	5
University of Toronto	(1918, 2), (1920)	3
University of Budapest	(1907), (1909), (1915)*	3
University of Zurich	(1911)*	1
University of Berne	(1919)*	1
Osteopaths		2

FAILED

University of Colorado	1902)	1
Howard University	(1916), (1920)	2
Kansas Medical College, Topeka	(1903)	1
College of Physicians and Surgeons	(1921)‡	1
University of Maryland	(1915)	1
Harvard University	(1898), (1905)	2
Tufts College Medical School	(1916), (1920), (1921)	3
University of Michigan Medical School	(1910)	1
Columbia University	(1920), (1921, 2)	3
Cornell University	(1921)	1
Fordham University	(1916), (1921, 7)	8
New York Homeopathic Medical College and Flower Hospital	(1914) (1915, 2), (1916), (1917), (1918), (1920), (1921, 2)	9
University of Buffalo	(1920), (1921, 2)	3
Eclectic Medical College	(1915)	1
University of Oregon	(1920)	1
Jefferson Medical College	(1912), (1913)	2
University of Pennsylvania	(1920)	3
Woman's Medical College of Pennsylvania	(1918)	1
Vanderbilt University	(1919), (1920, 3)	4
Baylor University	(1921)	1
McGill University	(1907), (1918), (1920, 2)	4
Bohemian University of Prague	(1920)*	1
University of Vienna	(1906),* (1913),* (1918)*	3
University of Budapest	(1912),* (1913),* (1919)*	3
University of Florence	(1907)	1
University of Berne	(1910)	1
Osteopaths		7

Mr. Herbert J. Hamilton also reports that from July 18 to Dec. 28, 1921, 34 candidates were licensed by endorsement of credentials. Three candidates were licensed on diploma. Two candidates were licensed on recommendation of the New York State Board of Medical Examiners, and one candidate's license was issued on recommendation of the Board of Regents. The following colleges were represented:

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Colorado	(1914)	California
College of Physicians and Surgeons, Chicago	(1910, 2)	Illinois
Dunham Medical College	(1902)	Illinois
Northwestern University	(1920)	Illinois
Rush Medical College	(1904), (1917)	Illinois
College of Physicians and Surgeons, Keokuk	(1873)**	
State University of Iowa Coll. of Homeo. Med.	(1898)†	Iowa
University of Maryland	(1917)	Delaware
Harvard University	(1915)	Mass.
University of Michigan Medical School	(1916)	Michigan
University Medical College of Kansas City	(1913)	New Jersey
Albany Medical College	(1879)**	
Fordham University	(1917)	Illinois
Eclectic Medical College	(1920)	Ohio
University of Oklahoma	(1915)	Kansas
University of Oregon	(1904)	Oregon
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1916)	New Jersey
Jefferson Medical College	(1890)	Virginia
Medico-Chirurgical College of Philadelphia	(1906)	New Jersey
(1907) Pennsylvania, (1913) Utah		
University of Pennsylvania	(1919)	Ohio
Baylor University	(1916)	Utah
University of Texas	(1914)	Texas
University of Vermont	(1914)	Vermont
Medical College of Virginia	(1904)	Virginia
University of Virginia	(1917), (1918), (1919)	Virginia
German University of Prague	(1904)*	Austria
University of Vienna	(1883)*	Illinois
National University, Athens	(1894)* Ohio, (1897)*	Wisconsin
University of Geneva	(1912)*	Switzerland
University of Kharkov	(1897)*	Russia

College LICENSED ON DIPLOMA	Year Grad.	Number Licensed
Harvard University	(1885)	1
Medical Department of the University of the City of New York	(1888), (1891)	2

* Graduation not verified.

‡ A report from the dean of the University of Maryland states that this candidate did not graduate from the College of Physicians and Surgeons or any of the other medical schools which merged with that of the University of Maryland.

** These candidates were licensed on recommendation of the New York State Board of Medical Examiners.

† This candidate's license was issued on recommendation of the Board of Regents.

South Carolina November Examination

Dr. A. Earle Boozer, secretary, South Carolina State Board of Medical Examiners, reports the oral, written and practical examination held at Columbia, Nov. 8-10, 1921. The examination covered 17 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 10 candidates examined, 9, including 2 chiropractors, passed, and 1 candidate failed. Four candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Emory University	(1921)	76.5, 84.6
University of Louisville Medical Dept.	(1907)	80.5
University of Maryland	(1920)	87.5
Boston University	(1920)	78.9
University of Pennsylvania	(1920)	93, 94.2
Chiropractors		75.1, 83.6
FAILED		
Southern College of Medicine and Surgery	(1914)	71.8

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Georgia	(1909)	Georgia
Johns Hopkins University	(1917)	Maryland
Woman's Medical College of Pennsylvania	(1912)	N. Carolina
University of the South Medical Department	(1909)	Maryland

Official Report on Occurrence of Leprosy in Bosnia.—From a report of the Bosnian and Hertsegovinian Health Commission sent out by the ministry of public sanitation in Belgrade to study the occurrence of leprosy in the mentioned country, one can gather that eighty-two undoubted cases of leprosy were officially known in Bosnia at the end of last year, being seven less than in 1898. The Narenta district (large river crossing the land) is the only one in which the disease is endemic, and we are promised a more strenuous search for undiscovered cases, in accordance with the resolution of the International Leprosy Committee. In the neighboring countries, as Albania, Macedonia and Montenegro, the number of leprosy cases far exceeds that in Bosnia; however, in these provinces there is no organization existing for the recording and controlling of the cases. The Belgrade government, which grasped public sanitation with a firm hand, will surely extend its activity also toward these places, and will have all leprosy patients treated in the specially built leprosy hospital in Sarajevo.

Medical Economics

BOND RATINGS—RATINGS ON CERTAIN ISSUES

To the Editor:—The letter on "Safe Investments" (The Journal, March 18, p. 836) is valuable. Disinterested, reliable investment advice is much needed by physicians.

1. Do you consider the bond ratings given in Moody's Analysis a safe guide to buy bonds on? And do you know of any other system of bond ratings that is reliable?

2. Kindly give me your ratings as to safety of principle of the enclosed list of bonds, and also their present market value.

Please omit my name. ————, Wisconsin.

Answer.—If a man were to confine his selection of bonds to those which are rated A, Aa or Aaa in Moody's Manual of Investments, he would probably be following a safe plan.

However, these ratings should be taken from only the latest editions of Moody's manual, because such ratings change from time to time. There are bonds which would have been rated Aaa a few years ago which now are rated below A.

In order to carry out the best possible plan of investment, one should purchase securities from some reliable bond house which is able and willing to keep one currently posted relative to any change in the conditions of the borrowing companies whose bonds one owns. One would probably be safe in doing business with this kind of a bond house to accept recommendations of bonds which Moody might rate lower than A.

Listed below are the bonds mentioned by our correspondent. We are indicating a rating which, we believe, is fair for each security, and are also giving the approximate market price of each as of March 30.

Rating				Market
Very strong	Chicago Union Station Co	6½s	July, 1963	112¼-114¾
Good	Amour & Co.	7s	July, 1930	102¾-103
Fair	Libby, McNeil & Libby............	7s	May, 1931	99¾-100
Good	Anaconda Copper Mining Co.	7s	Jan., 1929	102¾-103
Fair	Columbia Gas & Electric Co.	5s	1927	90½- 91½
Strong	Province British Columbia, Can...	6s	Apr., 1926	99¼-100¼
Strong	Province Alberta, Canada.........	6s	July, 1926	99¼-100¼
Strong	Province Ontario, Canada........	5½s	Aug., 1924	98 - 98¾
Strong	Gov. Switzerland	8s	1940	117 -118
Strong	Gov. French Republic..............	8s	Sept., 1945	103¾-107¼
Strong	Kingdom of Norway...............	8s	Oct., 1930	111½-112
Strong	Kingdom of Belgium..............	7½s	June, 1945	108½-109

This list of securities is a very strong one, and the only recommendation which we would add is that one should seek a little more diversification of investment. More than half of this list is in foreign government obligations, and these should remain satisfactory investments to their respective maturities. We believe, however, that it would be sounder practice to diversify one's holdings in about these propor-ions:

Railroad bonds	25%
Industrial	25%
Public utility bonds....................	25%
Foreign government bonds..............	25%

Our correspondent owns three short maturities which are elling near par, so that it would be practicable to make such a readjustment at this time.

Hard Roads, Noise and Health.—Main roads, as ordinarily onstructed—particularly the asphalt ones—soon get into a aulty condition, the heavy motor traffic causing ruts and oles which have a damaging effect on the vehicles and are he cause of much noise, particularly if the vehicles are badly worn. Rubber roads, if found to be practicable for heavy raffic, would for important city roads be a perfect solution f the problem; they would be practically noiseless, and would ncrease the life of all vehicles and of horses using them.—I. J. Spooner, *Nation's Health* **4:**156 (March) 1922.

Book Notices

Arterial Sclerosis. A Consideration of the Prolongation of Life and Efficiency after Forty. By Louis Faugères Bishop, M.A., M.D., Sc.D., Professor of the Heart and Circulatory Diseases, Fordham University School of Medicine, New York City. Cloth. Price, $4.25. Pp. 383, with 33 illustrations. New York: Oxford University Press, 1921.

The subject of arteriosclerosis is of particular interest and moment to all practicing physicians. It was hoped that this contribution would shed considerable light on the problem, but, on the contrary, it rewards the reader with nothing but a poorly organized and poorly written review of much that has been published up to 1914—nothing more recent. In fact, the book is a reprint of a 1914 "first edition." There is an incredible amount of repetition throughout the entire volume. The author offers no new scientifically proved facts. His own contribution consists of a few scattered case reports, and the formulation and attempted support of an hypothesis as to the cause and effect of arteriosclerosis by borrowing liberally from the published works of others and by an inconceivable amount of mental acrobatics. The two leading ideas in the book are autointoxication, or accidental sensitization to particular proteins in causation, and the low-protein diet in treatment. To quote:

> My own belief is that arteriosclerosis arises when the cells of the body become sensitive to particular proteins, and that these proteins create irritation, something in the nature of a mild anaphylaxis; and if this is continued over a long period of time the result is changes in structure which constitute the disease known as arteriosclerosis. . . . The key to the riddle of arteriosclerosis I believe lies in just this sensitization of individuals to particular proteins, or, to be more specific, to split products of particular proteins.

Next to Chapter XIV, which is a symposium of the opinions of many leading American physicians, the chapter on cheese is the most readable and valuable in the treatise. This chapter occupies more than thirty-eight pages, one tenth of the book, and describes the various kinds, why they were given the names they have, their composition and digestibility, the manner of preserving cheese in the home, the manner of serving cheese, numerous cheese dishes, etc.

Therapeutic Immunization in Asylum and General Practice. By W. Ford Robertson, M.D., Pathologist to the Scottish Asylums. Cloth. Price, $4. Pp. 278. New York: William Wood & Company, 1921.

This book is written by an enthusiastic supporter of vaccine therapy. The author devotes considerable space to explaining why vaccines have fallen into general disfavor. He points out in a convincing way many common errors in the application of therapeutic immunization. Far less convincing are the chapters dealing with the evidence favoring vaccine therapy. This is especially true of the treatment of such diseases as neurasthenia, exophthalmic goiter, and disseminated sclerosis with the diphtheroid bacillus vaccines which he advocates. The author believes that pernicious anemia is caused by an "intestinal pneumococcus infection," and that certain forms of insanity, including manic-depressive insanity and dementia praecox, are caused by focal infections. He describes satisfactory results in treating these conditions with vaccines. The bacteriologic technic described in the book has no advantages over that commonly employed in this country.

Die Chirurgie der peripheren Nervenverletzungen mit besonderer Berücksichtigung der Kriegs-Nervenverletzungen. Von Privatdozent Dr. Walter Lehmann, Assistent an der Chirurgischen Universitätsklinik Göttingen. Mit einem Geleitwort von Professor Dr. Rudolf Stich. Paper. Price, 104 marks. Pp. 271, with 69 illustrations. Berlin: Urban & Schwarzenberg, 1921.

This monograph may justly be considered a complete treatise on the subject of peripheral nerve injuries. Casual inspection of the text might lead the surgeon to believe that the subject matter is bulky and unnecessarily padded for a phase of surgery the clinical data of which could be very briefly stated. The author, however, has not limited himself to diagnosis and technic. In the first part, there is presented a consideration of sensory and motor injuries, neuralgias, paresthesias, vasomotor and trophic changes, etc. The subject of pathology, both nerve and associated bone and blood vessel lesions, is treated in detail. Considerable attention is devoted to the subject of differential diagnosis between complete and partial lesions and between nerve and musculotendinous injury. In the second part, prognosis and therapy are considered. The author feels that each nerve has its own prognosis; he leans toward the conservative in operative indications, but illustrates by numerous collections of statistics the danger of overlooking a complete lesion. A general anesthetic and free incision are considered essential. Under technic, nerve suture, flaps, tubulization, neurolysis and other phases are considered. The last part of the work deals with the special considerations of individual nerves and plexuses. There is an extensive bibliography containing hundreds of references. The work is illustrated by colored anatomic plates, and by photographs illustrating clinical phases. It is evidently the result of extensive personal experience.

Radiographic Technique. By T. Thorne Baker, A.M.I.E.E. Cloth. Price, $3.50. Pp. 196, with 62 illustrations. New York: William Wood and Company, 1921.

This small work really is an exposition of the photochemistry of roentgen-ray work. There is very little on roentgenographic technic per se. So far as it treats of photochemistry, the book is an aid to technicians whose working knowledge of this particular feature of the work is more or less vague. Those portions of the book that are confined strictly to photographic chemistry are well written. Related phases of roentgen-ray work are superficially covered by the text. The entire work is decidedly English in its point of view and in practice and, to the American roentgen-ray worker, many items will seem to be behind recent progress in the roentgenographic art. For example, the author expresses doubt that the roentgen-ray film will find much favor over the glass negative for general use. This is at variance with American practice, in which films have largely replaced glass negatives in modern roentgen laboratories. The chapters on apparatus are certainly far behind progress in America, and contain illustrations of apparatus no longer in use in this country. Among other items, the interrupterless transformer is not explained, a serious omission if this book is to prove valuable to American technicians. The work describes gas tubes in the regular chapters, while the Coolidge tube is explained in an appendix. As most progressive roentgen-ray operators have discarded the gas tube for the Coolidge tube, this manner of covering the subject cannot be regarded as satisfactory. A number of practical points regarding dark room equipment and illumination are given.

A French-English Dictionary for Chemists. By Austin M. Patterson, Ph.D. Cloth. Price, $3. Pp. 384. New York: John Wiley & Sons, Inc., 1921.

This work may be considered as a companion to the "German-English Dictionary for Chemists" compiled by the same author. As indicated in the title, the volume is intended mainly for chemists, but it will find friends in the allied sciences as well. The introduction contains a general discussion on technical nomenclature, and those who are somewhat deficient in French may obtain considerable help from the conjugations and discussion of feminine and plural forms. The vocabulary is enriched by the inclusion of phrases: thus, under *papier* there are 137 phrases, beginning with *papier à calquer* (tracing paper) and ending with *papier volant* (loose sheet of paper). The book is well arranged and of convenient size. Workers in the laboratory sciences will appreciate the value of this dictionary as an aid in making French literature more available.

The Anatomy of the Human Orbit and Accessory Organs of Vision. By S. Ernest Whitnall, M.A., M.D., B.Ch., Professor of Anatomy, McGill University, Montreal. Cloth. Price, $12. Pp. 428, with 195 illustrations. New York: Oxford University Press, 1921.

There is room, even in the best appointed ophthalmologic libraries, for this timely textbook, for it gathers into comparatively small volume virtually all of the authoritative data, both new and old, pertinent to the subject. The illustrations are, for the major part, photographs of actual dissections, and are excellently reproduced. The first portion is devoted to the osteology of the orbit. In marked contrast to many similar works, lengthy and tiresome tables of comparative measurements are omitted. It is noticeable that the old method of trying to teach in two dimensions alone has been replaced by three dimension activity. The second portion comprises the description of the contents of the orbit, especial stress being laid on the muscles and the orbital nerves, structures that are usually treated in a most stepmotherly manner. It is to be regretted that the author's investigations did not cover the lymphatic drainage of the orbit, a subject that he is forced to dismiss with a few lines. In the third portion, the cerebral prolongation of the optic nerve tract is discussed at not too great a length. The book closes with a bibliography from 1900 to date. The volume, as a whole, is an interesting presentation of what is at best a very dry subject.

Neoplastic Diseases. A Treatise on Tumors. By James Ewing, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical School. Second edition. Cloth. Price, $12, net. Pp. 1054, with 514 illustrations. Philadelphia: W. B. Saunders Company, 1922.

Careful examination of the second edition strengthens the favorable opinions expressed in the review of the first edition. It is hoped, incidentally, that in the next edition the author will consider the effects of the roentgen ray and radium on tumors, at least to the extent of discussing the morphologic changes induced by irradiation, with special reference to microscopic diagnosis. In the future the subject of experimental tar cancer will require more extended discussion also, if the present activities in that line continue. It is probable, too, that the question of heredity of human cancer may demand a somewhat more objective consideration. Unquestionably this is the best book on tumors now available. It is an ornament of rare distinction to American scholarship and literature.

Health Education and the Nutrition Class. A Report of the Bureau of Educational Experiments. Descriptive and Educational Sections by Jean Lee Hunt. Studies of Height and Weight and Mental Measurements by Buford J. Johnson, Ph.D. Report on Physical Examinations 1919-1920 by Edith M. Lincoln, M.D. Cloth. Price, $3.50. Pp. 281, with illustrations. New York: E. P. Dutton & Company, 1921.

This book is a report by the Bureau of Educational Experiments of work carried on at Public School 64, Manhattan. The work undertaken was extensive and thorough, and the problems of the nutrition worker are well discussed. The importance of seasonal variation in growth is well emphasized. Of extreme value, the authors state, is the necessity of close cooperation between the nutrition worker and the family. The methods by which this was brought about are given in detail. The appendix has to do with data concerning individual record sheets and specimen weight charts.

Infant Feeding. By Clifford G. Grulee, A.M., M.D., LL.D., Associate Professor and Acting Head of the Department of Pediatrics at Rush Medical College. Fourth edition. Cloth. Price, $4.50 net. Pp. 397, with 37 illustrations. Philadelphia: W. B. Saunders Company, 1922.

Pediatrics is passing through a phase of experimentation The European school has lost its prominence and leadership, and American pediatrics is developing independently of European origins. Dr. Grulee has brought up to date the literature referred to in his textbook, and calls special attention to Marriot's work on intoxication and to Pirquet's system of feeding. Neither of these methods has as yet been generally accepted, and the author wisely presents the matter without attempting to predict what the future will retain.

Building Health Habits. By M. V. O'Shea, Professor of Education, The University of Wisconsin, and J. H. Kellogg, Superintendent of the Battle Creek Sanitarium. Cloth. Price, 80 cents. Pp. 280, with illustrations. New York: The Macmillan Company, 1921.

Keeping the Body in Health. By M. V. O'Shea, Professor of Education, The University of Wisconsin, and J. H. Kellogg, Superintendent of the Battle Creek Sanitarium. Cloth. Price, 88 cents. Pp. 311, with illustrations. New York: The Macmillan Company, 1921.

The last edition of this series appeared in 1915. Its purpose is to present to elementary school pupils the fundamental facts regarding health and hygiene. The booklets are nicely printed and well adapted for their purpose, but are suitable only for the upper grades. The style is not such as to appeal to any one below the age of 12 or 14 years.

Medicolegal

Sufficient Evidence and Reason for Divorce

(Hines v. Hines (Iowa), 185 N. W. R. 91)

The Supreme Court of Iowa, in affirming a decree in favor of the plaintiff, says that it was the usual story of a marriage in which cruelty was charged by the wife against the husband, predicated on compulsory excessive sexual intercourse, which it was alleged injured her health and rendered her life burdensome and intolerable. The primary contention of the defendant was that the evidence of the plaintiff was not sufficiently corroborated to warrant a decree of divorce. The Iowa statute provides that the allegations of the petition must be established by competent evidence, and that no divorce shall be granted on the testimony of the plaintiff alone. In this case the record disclosed that the plaintiff when she left the defendant was in poor health; that thereafter and during her absence from him she regained her health; that prior to leaving her home she consulted a physician, and he testified that she was afflicted and suffering with vaginitis and general female trouble; that she did not respond to his treatment while living with her husband, and that he advised her to go away for a time, although not intending to recommend a permanent separation. May it be said that these facts were not corroborative in this case? A wife has the right to protect her health and her life from the ungoverned lust of her husband by seeking a divorce. Such an action presents as strong a case for relief as when she flees from his intolerable cruelty inflicted by other means. It is personal violence under another name, and cannot be justified under the claim of the exercise of his marital rights. These rights are reciprocal, and exist on the part of the wife as distinctly as on the part of the husband. It is true that marital rights involve marital duties, and include the duty of forbearance on the part of the husband at the reasonable request of the wife, as well as the duty of submission on the part of the wife at the reasonable request of the husband. In the decision of such matters, a court must take into consideration the duty of the husband as well as the duty of the wife. Unduly to emphasize either would be manifestly unjust.

Malpractice Found in Treatment of Oblique Fracture

(Donnelly v. Packard (Wis.), 185 N. W. R. 164)

The Supreme Court of Wisconsin says that the plaintiff, a laborer, aged 46, who had previously sustained a fracture of the femur of the right leg which resulted in a shortening of the leg, on Sept. 26, 1918, suffered an oblique fracture of the upper third of the femur of the left leg. He was taken to a hospital, where a physician who had temporarily placed the leg in a splint asked the defendant, who had been called to attend the plaintiff, whether it would not be a good idea to perform an open operation on the leg and the two fragments of bone, so as to shorten them, and then reattach the upper and lower surfaces of the bones by means of a plate and other appliances used in operations of that nature. To this inquiry, according to the plaintiff, the defendant made no reply, and the method suggested was not pursued. After setting the bone, the defendant applied a Buck's extension, the limb being placed in a splint surrounded by bandages. After the lapse of about ten days, the plaintiff expressed his regret to the defendant that the suggestion of an open operation and the use of a plate had not been followed, and inquired whether any other method could then be pursued which might result in the shortening of the left leg so as to compensate for the shortening in the right one. The defendant said, according to the plaintiff's testimony, that he could take the weight off, meaning the Buck's extension, and let the injured surface of the lower fragment run over the injured surface of the upper fragment. The extension was removed; but, it was said, the defendant did nothing to hold the injured surfaces in proper position, except to put the limb into a pneumatic ambulatory splint, which was made for the purpose of allowing the patient to be moved, as, about October 21, it was thought best, on account of the prevalence of influenza, to have him removed from the hospital to his home. The defendant testified that traction was applied when the ambulatory splint was used, but that was denied by both the plaintiff and his wife. The plaintiff was conveyed to his home, a distance of about 14 miles, over rough country roads, in a truck automobile, unaccompanied by the defendant or any other physician or a skilled attendant. Nor, according to the plaintiff, did the defendant visit him for about two weeks; when, on examining the limb, he said he ought to have attended to it before; that it was in a pretty bad condition. Thereafter he did not visit the plaintiff until about Jan. 1, 1919. As the result of the injury, the left leg showed a very marked bow, and its condition was such as to disable the plaintiff from doing any considerable amount of walking or work, and to cause him a great deal of pain; and it was practically undisputed that the condition so detailed would remain permanent.

A physician and surgeon of large experience in the treatment of fractures pronounced the results achieved by the defendant as a fair average produced by the ordinary, skilful physician, and stated that out of 100 similar cases treated by physicians 40 per cent. would produce results substantially like those in this case. There was, too, a sharp conflict in the testimony as to whether traction was removed before the adhesion of the bones; whether traction was applied when the Buck's extension was removed and the ambulatory splint was used; whether the bones had united on their sides, or on the broken surfaces; and whether the condition manifested by the bowing was due to the adhesion of the bones, or was the result of conditions that came about after January 1, when the plaintiff was advised and did attempt to resume the use of the injured limb.

The issues presented were submitted to a jury, which found that the defendant in setting the fracture did not bring the broken surfaces of the bone together and maintain them in apposition during the healing period; that he failed to exercise that degree of skill and care ordinarily exercised by physicians in good standing in that locality, in so treating the fracture; and that his failure to use care and skill was the proximate cause of the condition of the plaintiff's left thigh. The jury fixed the plaintiff's damages at $5,000; but the court reduced the amount to $3,764.95, on account of compensation which the plaintiff had recovered under the workmen's compensation act from his employer based on the alleged malpractice. The judgment is affirmed on the ground that there was ample testimony to prove that the defendant failed to exercise that degree of skill and care ordinarily exercised by physicians in good standing in the locality of his residence, and that such failure was the proximate cause of the plaintiff's condition.

Proof of Hernia and Other Injuries

(Buncle v. Sioux City Stockyards Co. (Iowa), 185 N. W. R. 139)

The Supreme Court of Iowa is of the opinion that the showing made by the plaintiff with regard to his having sustained a hernia while climbing on a high fence, although he did not consult a physician for two weeks and a half after that, was sufficiently vague and uncertain to make final the finding of the arbitration committee and the industrial commissioner that he had not met the requirements of the burden of proof to an extent justifying the award of compensation under the workmen's compensation act. But it is not true, as a matter of law, the court says, that to justify a finding of compensable injury by hernia or other bodily misfortune the claimant must be corroborated, or that the claimant broke down and was compelled to cease work; or that he reported to his employer immediately; or was compelled to seek medical assistance. Such circumstances are, of course, admissible in testimony, and may be considered with other facts and circumstances in arriving at the truth as to the alleged fact of injury and of its nature and extent; but the absence of any one or more or even of all of these so-called tests is not necessarily conclusive against the claimant. No court is so letter-perfect in human anatomy or so accomplished in surgical or medical lore that it can say that every case of traumatic hernia produces immediate prostration. On the contrary, notwithstanding the learning of the books and the dogmatic declarations of expert witnesses, it is a matter of common knowledge that thousands of men suffer from inguinal hernia, and that many of them are able to point to the time and place at which it developed and the physical strain or exertion which occasioned it, and yet were never prostrated by it. It is doubtless true that in many cases the lesion takes place from the gradual enlargement of the inguinal rings, and is not traceable to any accident or unnatural strain or exertion; and that much difficulty exists in determining whether in a given case the hernia, if one is found, is of a compensable character. This difficulty justifies the arbitration committee and the commissioner in closely scrutinizing the testimony and satisfying themselves as nearly as possibly as to the origin of the alleged injury, in order that they may do equal and exact justice between the parties, but the rule applicable is the same as in other cases and requires only a preponderance of evidence.

Disease Caused by Injury—Total and Continuous Disability of Surgeon

(Rathbun v. Globe Indemnity Co. (Neb.), 184 N. W. R. 903)

The Supreme Court of Nebraska, in affirming a judgment in favor of the beneficiary of an accident insurance policy issued to a physician and surgeon, says that the insured, in alighting from his automobile, either from a misstep or slipping on ice on the pavement, fell, striking his right hip on the pavement or on the curb. For the next two or three days, he suffered severe pain in the hip. Then he had a respite of two weeks from any conscious ill effects from the injury, during which time he attended to the most, if not all, of his professional duties as a surgeon. At the end of that time, the pain and lameness returned and continued with increasing severity for about two months and a half, during which time he performed some of his professional labors, but under more or less stress of pain and discomfort, being compelled to have his assistants do many things in the course of operations on patients that theretofore he had always been accustomed to do himself. After that, he gave up any attempt to perform any duty, because of pain and suffering from the injury, which increased in severity until about six months after the accident he died of sarcoma involving the hip joint, which the evidence conclusively showed was the direct and immediate result of the accident.

The insurance policy contained this special provision: "This policy does not cover . . . loss resulting from bodily injury caused or contributed to, directly or indirectly, by disease, or vice versa." The defendant interpreted the "vice versa" provision to mean, "This policy does not cover . . . loss resulting from disease caused or contributed to, directly or indirectly, by bodily injury," and contended that this prevented a recovery on the policy. But it seems to the court that a theory which inevitably leads to such damaging results to the insured as this would is so unreasonable, absurd and destructive of the very object and purpose of the contract, as well as the manifest intention, or at least supposed manifest intention and understanding of the parties who entered into it, that such a construction cannot be allowed; and, if the language of the provision is susceptible of no other construction, that the provision itself cannot stand. Wherefore, being of the opinion that in this instance there was no alternative, the court holds the "vice versa" clause inoperative and of no effect.

Another point required to be determined by a clause in the policy and the contention of the defendant, was as to when one insured sustaining an injury through accident may be said to be rendered "totally and continuously unable to transact all business duties from date of accident." Surely the defendant would not contend that it was entitled to an absolutely literal construction of the clause in question, and that the performance, by the insured, of anything whatsoever in the line of his business, or professional duties, no matter how trivial, or under what circumstances it may have been performed, would bar recovery. Such a claim would be unreasonable, even absurd. To illustrate: Suppose the insured had been confined to his bed, unable to rise therefrom because of the severe pains and lameness he was suffering from the injury, yet under these conditions he might still be able to consult with and prescribe for patients, and even perhaps have dressed a wound, and suppose that he had done so, would the defendant or any one say that for that reason he was not a subject of "total disability," under a proper and reasonable construction of those words in the policy? The court thinks no one could contend for a thing so unreasonable. Recurring to the two weeks in which the insured suffered little or no pain and there was little or no interruption in the prosecution of his ordinary professional labors, the defendant contended that that fact itself conclusively showed that he was not "continuously unable to transact all business from date of accident," and precluded a recovery; but this point also, the court holds, could not be sustained. When the real nature and extent of injuries do not at once reveal themselves, but the injured part apparently lies dormant for a while, it cannot be said that the injury is not continuous and from the date of the accident, nor can it fairly or justly be said that the disability is not continuous and from the date of the accident, because the injured party enjoys a brief respite from pain and suffering; and, under the circumstances stated, to hold that a brief respite during which the insured was able to transact the most, if not all, of his ordinary business should bar a recovery seems neither reasonable nor just.

Father Separated from Mother Liable for Medical Services for Child

(Von Roeder v. Miller (N. Y.), 190 N. Y. Supp. 787)

The Supreme Court of New York, Appellate Term, First Department, says that this action was brought by a physician to recover from the father of a minor child the reasonable value of medical services rendered to the child. The defendant admitted the rendition of the services and their reasonable value, but set up as a defense a separation agreement between himself and the mother of the child, contending that, because of such agreement and his compliance therewith, the plaintiff was not entitled to a recovery of a judgment against him. The plaintiff knew that the parents were living apart, but had no knowledge of the terms of the agreement under which they separated. A judgment was entered in favor of the defendant, dismissing the complaint on the merits.

In reversing that judgment, with $30 costs, and ordering a judgment for the plaintiff physician, with costs, the appellate term says that the liability of the father for the furnishing of necessaries to an infant child as a primary one is well settled. Not alone was the obligation existent at common law, but it has found concrete expression in the statutes of New York State. The obligation is a natural one, and, if the parent neglects the duty, any other person who supplies such necessaries is deemed to have conferred a benefit on the delinquent parent, for which the implied promise to pay is raised on the parent's part.

Furthermore, the court thinks it is not doubted that under no circumstances can such a parent by mere agreement with a third person—in this case the mother, by force of a separation agreement—discharge his liability for the primary obligation to supply necessaries to his infant children as fixed by the law. The agreement is binding only on those whose volition and execution gave it birth. In no wise can it diminish the liability of the parent to infant children, who were not and could not become parties thereto. By contracting with his wife, the defendant was unable to discharge his obligation to his child. That remained unimpaired. It was urged from a line of cases that the presumption that the wife is authorized to pledge the husband's credit ceases when they are living apart; but in each of those cases the articles furnished were for the use of the wife, and the liability turned on whether the husband had provided adequate means for her support, and no question of liability for necessaries furnished to infant children was involved.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
American Association for the Study of the Feebleminded, St. Louis, May 18-20. Dr. R. W. Baker, Laconia, N. H., Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia. Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society for Clinical Investigation, Washington, D. C., May 1. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia. Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Atlantic City, April 26-28. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
International Congress of Ophthalmology, Washington, D. C., April 25-May 3. Dr. Luther C. Peter. 1529 Spruce St., Philadelphia, Sec'y.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Excelsior Springs, May 2-4. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. Frederick A. Spafford, Flandreau, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

December, 1921, 8, No. 12

*Benign and Malignant Gastric Ulcers from Roentgenologic Viewpoint. R. D. Carman, Rochester, Minn.—p. 695.
*Roentgenologic Studies of Injected Kidneys. W. K. Lim, Detroit.—p. 704.
Review of Three Years' Work and Articles on Pneumoperitoneum. J. T. Case, Battle Creek, Mich.—p. 714.
Normally Developing Shoulder. I. Cohn, New Orleans.—p. 721.
Treatment of Hyperthyroidism with Roentgen-Rays. G. W. Holmes, Boston.—p. 730.
Intensive Roentgen-Ray Therapy Practiced in Clinics in Europe. S. Stern, New York.—p. 741.
*Treatment of Cancer of Rectum by Radium. D. Quick, New York.—p. 746.
Pathologic Classification of Typhoid Gland Diseases with Radium Treatment in Toxic Goiter. R. E. Loucks, Detroit.—p. 755.
American Literature on Radium and Radium Therapy Prior to 1906. C. Chase, Brooklyn.—p. 766.
Preliminary Report on New Tube for Producing Duodenal Block. R. G. Van Nuys, Oakland, Calif.—p. 779.
Simple Device to Prevent Omission of Filters in Deep Roentgen-Ray Therapy. G. E. Pfahler, Philadelphia.—p. 780.

Roentgenoscopic Appearance of Benign and Malignant Gastric Ulcers.—Carman asserts that there are but two varieties of ulcerous lesions which evince any noteworthy roentgenologic indications of malignancy. One is the ulcerating cancer with the meniscus-like crater. The other is the niche type of ulcer with an unusually large crater. With these exceptions the examiner cannot venture opinions as to the probable character of ulcers revealed by the roentgen ray, nor should he be expected to do so. Any ulcer which appears to be benign macroscopically may prove to be malignant microscopically. Cancer may arise in an ulcer which was primarily benign.

Roentgenologic Study of Injected Kidneys.—A study of a series of injected normal kidney pelvis has convinced Lim that no two pelves, not even those removed from the same subject, bear a similarity one to the other. Superimposition of the minor calyces upon the isthmus throws a shadow which very often simulates renal calculi. Distended renal blood vessels, especially the arteries, which happen to cross the pelvis, the isthmus and the calyx, affect the contour of these structures, giving them a distorted and abnormal shadow. In four kidneys removed from two subjects, aged 8 and 12, respectively, there was present a constant tortuosity at the ureteropelvic junction.

Radium Therapy in Cancer of Rectum.—Quick's experience with these cases he believes is a warrant for treating the operable as well as some of the more advanced cases of cancer of the rectum with radium, with a reasonable hope for success. The technic of the treatment is discussed.

January, 1922, 9, No. 1

Roentgen-Ray Diagnosis of Accessory Sinusitis. J. G. Van Zwaluwenburg, Ann Arbor, Mich.—p. 1.
Diagnosis of Pulmonary Conditions in Children. J. W. Pierson, Baltimore.—p. 11.
*Unsuspected Dermoid Cyst Diagnosed by Roentgen-Ray Examination. L. Edeiken, Philadelphia.—p. 15.
Lumbar Spine and Sacro-Iliac Joints. M. B. Palmer, Rochester, N. Y.—p. 16.
*Treatment of Carcinoma of Thyroid by Roentgen Rays and Radium. G. E. Pfahler, Philadelphia.—p. 20.
Roentgenotherapy of Thyroid. A. F. Tyler, Omaha.—p. 25.
Three Cases of Sarcoma Treated by Radiation. D. Y. Keith and J. P. Keith, Louisville, Ky.—p. 31.
Superficial Reaction of Radium as Guide to Dosage. W. S. Newcomet, Philadelphia.—p. 34.
Treatment of Brain Tumors by Radiation. H. K. Pancoast, Philadelphia.—p. 42.
*Treatment of Primary Carcinoma of Vagina with Radium. L. J. Stacy, Rochester, Minn.—p. 48.
New Type of Applicator for Use with Radium Emanation. D. Quick and F. M. Johnson, New York.—p. 53.
Comparison of Radiation Dosages Attainable by Use of Radium on and Within Tumors. C. H. Viol, Pittsburgh.—p. 56.

Efficiency of Bucky Diaphragm Principle. R. B. Wilsey, Rochester, N. Y.—p. 58.
Signal Light for Bucky-Potter Diaphragm. J. H. Lindsey, Fall River, Mass.—p. 67.

Dermoid Cyst Diagnosed by Roentgen Ray.—Edeiken relates the case of a girl, aged 17, whose chief complaint was sharp shooting pain in the right inguinal region. She had a vaginal discharge (leukorrhea) and a burning sensation on micturition. Menstruation was normal. The patient was referred for roentgen-ray examination of the urinary tract with a provisional diagnosis of ureteral stone. Just to the left of the lower border of the sacrum a number of undeveloped teeth were imbedded in a matrix of bone. A diagnosis of dermoid cyst was made.

Roentgenotherapy in Carcinoma of Thyroid.—Pfahler maintains that every case of carcinoma of the thyroid in which an operation has been performed should receive, as soon as possible, at least two thorough courses of roentgen-ray treatment, and more if the disease has not been removed completely so far as the surgeon can recognize. If a diagnosis of carcinoma of the thyroid can be made without operation, a reasonably good hope of success can be entertained from radiation treatment. Recurrent cases can be made to respond to treatment and the recurrence can be made to disappear, but the definite metastases are not likely to be controlled in late cases. Radium can be combined with roentgen-ray treatment to good advantage in carcinoma of the thyroid when the tumor has become definitely localized or when it ceases to respond to the roentgen rays.

Radium Therapy in Primary Vaginal Carcinoma.—Fourteen cases are reported on by Stacy. All the patients were given roentgen-ray treatments over the abdomen and back in conjunction with local radium applications. The local condition has been controlled comparatively successfully, but extension into the glands has not been prevented.

Archives of Surgery, Chicago

March, 1922, 4, No. 2

*Ventriculocordectomy. New Operation for Cure of Goitrous Paralytic Laryngeal Stenosis. C. Jackson, Philadelphia.—p. 257.
*Papilloma of Larynx in Children. Eleven Cases. S. J. Crowe and M. L. Breitstein, Baltimore.—p. 275.
*Experimental Traumatic Shock. V. Critical Level in Falling Blood Pressure. W. B. Cannon and McKeen Cattell, Boston.—p. 300.
*Postoperative Intra-Abdominal Hernia. C. H. Mayo and J. A. H. Magoun, Rochester, Minn.—p. 324.
*Radical Cure of Tuberculosis of Seminal Tract. I. Brief Survey of Literature. H. H. Young, Baltimore.—p. 334.
*Radiohumeral Bursitis, Epicondylitis, Epicondylalgia (Tennis Elbow). Personal Experience. R. B. Osgood, Boston.—p. 420.
Traumatic Fracture of Cranial Bones. I. Edema of Brain; II. Bruises of the Brain. C. W. Apfelbach, Chicago.—p. 434.
*Technic of Treatment of Carcinoma of Bladder and Prostate by Combination of Surgery, Electrocoagulation, Radium Implantation and Roentgen Ray. B. A. Thomas and G. E. Pfahler, Philadelphia.—p. 451.
*Detailed Bacteriologic Study of Case of Gas Gangrene Following Compound Fracture.. E. L. Barney and H. H. Heller, San Francisco.—p. 470.

Ventriculocordectomy.—Jackson describes what he considers an ideal operation for the cure of that form of stenosis associated with bilateral recurrent paralysis when the stenosis is due solely to the paralysis. If success is expected from ventriculocordectomy alone its performance must be limited to cases totally free from cicatricial stenosis. Recent onset of the paralysis is a contraindication. Briefly the operation consists in excising with the punch forceps the entire ventricular floor anterior to the vocal process and anterio-external surface of the arytenoid. The tissues are excised at one clip. In eleven of the eighteen cases in which Jackson did ventriculocordectomy the operation failed to restore an ample lumen and the operation had to be supplemented by other means—bouginage, laryngostomy or intubation—because the paralytic stenosis had been complicated by a cicatricial stenosis due to high tracheotomy, faulty after-care, improperly shaped or fenestrated cannulas, etc. There was no mortality from the operation.

Papilloma of Larynx in Children.—Eleven cases are reported by Crowe and Breitstein. The authors have tried every method of treatment with varying success. Experience leads the mto believe that radium, properly administered, may bring about a perfect result. It is probable, however, that even an ideal therapy will not eliminate preliminary tracheotomy, because so many of these cases in children are not recognized until complete aphonia or alarming symptoms of respiratory obstruction bring them to the physician.

Experimental Traumatic Shock.—From their experimental results Cannon and Cattell conclude that the critical level, that is, the level at which the blood pressure is no longer capable of maintaining an adequate volume flow to the tissues, and thus serving the normal oxidations of the body, is approximately 80 mm. mercury. Above 80 mm. reduction of the alkali reserve is not likely to appear; but as the pressure falls below this, a reduction will probably occur, which is more marked and develops the more rapidly the lower the pressure. If there has been a loss of blood, the circulation becomes inadequate before the pressure falls to 80 mm. mercury, i. e., the critical level is raised. Experiments also have definitely proved that with an acute lack of oxygen nerve cells abruptly cease to function. The experimental and clinical observations on the effects of prolonged low pressure point to the fact that these sensitive cells may be gradually harmed, if, instead of acute anemia, there is prolonged partial anemia. The authors emphasize the prime importance of early treatment of the low blood pressure of shock. Though the tissues may not suffer until blood pressure has fallen below a critical level of approximately 80 mm. mercury, it is desirable, when the pressure has fallen below this level and has shown no evidence of rising, that it be raised to the normal level of 120 mm. mercury, if possible, in order to provide the most favorable conditions for repair of the damage which has been done.

Postoperative Intra-Abdominal Hernia.—Two cases of internal hernia following gastrojejunostomy, and one following colostomy are reported by Mayo and Magoun, and ten cases recorded in the literature are analyzed.

Cure of Tuberculosis of Genital Tract.—These statistics based on sixty-three cases from Johns Hopkins Hospital and those recorded in the literature Young asserts are sufficient to demonstrate that among patients presenting evidence of tuberculosis of the external genitalia more than 50 per cent. present definite evidence of involvement of the prostate or vesicles, or both. Among Young's cases, thirty were unilateral, which, he asserts, is additional confirmatory evidence that the seminal vesicles became involved early in testicular disease, if not preceding it. This study also confirms the great frequency of bilateral testicular or epididymal involvement and the frequency of simultaneous involvement of the seminal vesicles, and that after removal of the disease on one side there remains a tuberculosis of the seminal vesicles from which the other testicle becomes involved, another argument showing the inadequacy of unialteral epididymectomy or castration. The fact that a cure was effected by castration or epididymectomy in only 19 per cent. proves the ineffectiveness of these operations. Of the patients who recovered five out of eight had no evident involvement of vesicles, and in those that were recorded as improved there was no involvement in six out of fourteen, showing conclusively that a large percentage of the few good results from epididymectomy or castration are among those early or isolated cases in which the involvement of the prostate and seminal vesicles is either absent or too small to be detected, and the fact that among those patients who are reported dead only three out of eighteen have no involvement of the deeper structures is also strong evidence that the more radical operation should have been caried out in those cases.

Radiohumeral Bursitis.—The essential pathology of tennis elbow, epicondylitis, or epicondylalgia Osgood states is believed to be an inflammatory reaction in a commonly existing bursa, varying in size, and located beneath the conjoined tendon of the extensor muscles between the tendon and the tip of the epicondyle, or original of the supinator radii brevis muscle, and the radiohumeral joint. Somewhat similar symptoms occasionally referred to the mesial condylar region may be explained by similar areolar tissue reactions beneath the common tendon of the flexor muscles. No constant bursa has been found in this region but adventitious ones may well occur. Heretofore, the only method of treatment which has been generally successfully has been complete immobilization for six weeks. Untreated, the discomfort may persist indefinitely; but it is usually self-limited, in from three months to a year. The operation of splitting the conjoined tendon, opening the bursa, evacuating the contents, and curetting its walls is not likely to do harm; and in two cases it has been followed by a rapid subsidence of symptoms and free use of the arm.

Treatment of Prostate and Bladder Cancer.—Employing a combination, or quartet, of therapeutic measures, twenty-six patients have been treated by Thomas and Pfahler. Although some patients have not been relieved of their symptoms, or their symptoms have returned after a period of improvement or actual freedom, only two are known to be dead, and one has been untraceable. The majority of these patients have been treated and observed only during the last three years. The authors describe their technic in detail and state the conviction that it offers more in the way of prolongation of life, if not cure in a few rare instances, than any other method of treatment heretofore employed in this particular type of malignant disease.

Bacteriology of Gas Gangrene.—The case reported by Barney and Heller emphasizes the importance of bacteriologic examination early in compound fractures, even in civil life, by one especially skilled in anaerobic work. It shows also that all cases of compound fracture should be under observation in a hospital for at least the first two days after injury. This case of gas gangrene, which was due to an infected compound fracture of the forearm, was diagnosed before amputation as a Welch bacillus infection. Four anaerobic bacilli of rapid invasion in the guinea-pig body were isolated from the amputated arm. *B. welchii* had not invaded such tissue as was supplied with circulation. The principal invader was *Vibrion septique* which nearly caused the death of the patient after amputation. There were two anaerobic bacilli that are guinea-pig invaders which are apparently new. No cocci or aerobic rods were present in the wound or surrounding tissue.

Arkansas Medical Society Journal, Little Rock

March, 1922, **18**, No. 10

Importance of Spinal Fluid Examination in Early Syphilis. E. H. Martin and E. A. Purdum, Hot Springs.—p. 187.
Mumps. S. F. Hoge, Little Rock.—p. 190.

Boston Medical and Surgical Journal

March 23, 1922, **186**, No. 12

Clinical Diagnosis of Cardiac Conditions. W. E. Preble, Boston.—p. 372.
Ankylosis of Jaw. R. H. Gilpatrick, Boston.—p. 374.
*Public Health Status of Amebic Dysentery in United States as Potentially Influenced by World War. C. W. Stiles, Washington.—p. 377.
Relative Fertility. E. Reynolds and D. Macomber, Boston.—p. 380.
Pathology of Tuberculosis. L. W. Smith, Boston.—p. 385.
*Serum Treatment of Lobar Pneumonia. L. W. McGuire, Boston.—p. 389.
Case of Mesenteric Thrombosis. J. G. Henry, Winchendon, Mass.—p. 390.

March 30, 1922, **186**, No. 13

Theory of Psychoanalysis. J. F. W. Meagher, Brooklyn.—p. 409.
Achylia Gastrica. L. Fischbein, Boston.—p. 413.
Extraction of Nonmagnetic Foreign Bodies from Anterior Chamber of Eye. W. F. O'Reilly, Lynn, Mass.—p. 418.
Progress in Gynecology. S. Rushmore, Boston.—p. 420.

Amebic Dysentery in United States.—Stiles reports on an investigation made by the U. S. Public Health Service to determine whether there has been an increase in amebic dysentery since the ending of the World War, some observers having claimed that there has been such an increase. A letter of inquiry, asking whether any increase in amebic dysentery has been observed, was sent to 607 hospitals and to 115 medical schools. Replies were received from 468 hospitals and from seventy-one medical school schools, representing every state in the Union except four. Only negative replies (190) were received from twenty-eight states. Only negative and indefinite replies were received from three states. Thus in at least thirty-one states, clinical amebic dysentery has not increased since the armistice to an extent that it attracted the attention of hospitals and medical schools. Out of a total of 532 replies, for forty-four states, twenty-four answers, or 4.5 per cent., report an increase but not in a manner as to give rise to serious concern. An examination of 13,043 specimens from 8,029 persons, in forty-eight institutions, located in twenty-two states and the District of Columbia disclosed that 44 per cent. showed either protozoan or worm infection of one kind or another; 39.9 per cent. showed protozoa; 9.6 per cent. showed worms. Immigrants, American boys and girls, civilians, soldiers who did not go to Europe, and soldiers who returned from Europe were examined, and in each group not less than 9 per cent. were infected. Therefore, Stiles believes that the conclusion is justified that on an average the soldiers who served in Europe were not infected with amebic dysentery any more than are certain other elements of the population, namely the soldiers who saw only home service, certain groups of civilians and certain training schools. The intensive studies on intestinal protozoa, studies conducted during and since the World War, appear to Stiles to bring out two practical facts very clearly: (1) At least in the temperate climates, the intestinal protozoa of man are by no means of so much clinical importance as has been feared or even assumed. (2) At least in temperate climates, *Endameba histolytica*, the parasite of amebic dysentery, is not usually a serious parasite, and its presence in healthy carriers is common.

Serotherapy of Pneumonia.—McGuire reports thirty-five cases of lobar pneumonia, Type I, in which serum treatment was effective.

Canadian Medical Association Journal, Toronto

March, 1922, **12**, No. 3

Some Tendencies in Modern Clinical Medicine. C. F. Martin, Montreal.—p. 131.
*"Marrow Pains" in Malaria and in Certain Other Acute Fevers. J. Tait, Montreal.—p. 134.
Rational Treatment of Surgical Shock Based on Proven Physiologic Data. A. R. Munroe, Edmonton, Alberta.—p. 138.
Anterior Poliomyelitis. A. A. Murray, Winnipeg.—p. 139.
*Pancreatic Extracts in Treatment of Diabetes Mellitus. F. G. Banting, C. H. Best, J. B. Collip, W. R. Campbell and A. A. Fletcher, Toronto.—p. 141.
Problems of Clinical Interest to Surgeon and Radium Therapist Relating to Cancer. C. E. Field and R. P. Wadhams, New York.—p. 153.
Statistical Study of Seventy-Seven Cases of Tuberculous Meningitis. H. McClelland, Toronto.—p. 157.
Heart Block and Auricular Fibrillation. C. F. Moffatt, Montreal.—p. 159.
Septic Abortion. O. A. Cannon, Hamilton, Ont.—p. 163.
Observations on Value of Lumbar Puncture. A. H. MacCordick, Montreal.—p. 168.
Anesthesia for Nose, Throat and Abdominal Surgery by Nitrous Oxid Oxygen C. E. Combination. H. E. H. Boyle, London, England.—p. 171.
Case Reports from Montreal General Hospital. W. H. Eakin.—p. 175.
Tuberculous Meningitis Simulating Encephalitis Lethargica Haemorrhagica. L. C. Dursthoff.—p. 176.
On Parkinsonian Syndrome. C. K. Russell.—p. 177.

Marrow Pains in Malaria.—While conducting a laboratory research on the fate of foreign particles injected into the blood stream, Tait noticed what seemed to be a relation between these experiments and malaria. When fine particles of India ink suspended in saline solution are injected in large amount into the blood vessels of a rabbit, the black pigment, mixing with the systemic blood, at first discolors it, but the discoloration rapidly disappears, and within an hour, microscopic examination of films of the blood may fail to reveal a single particle of the ink. When the injected animal is killed the liver and spleen are black as coal. The ribs show up through the chest wall conspicuously black in color, and the thin cranial bones are similarly discolored. When a long bone, such as the femur, is split open, the marrow comes out jet black, the bone itself being free from pigment. As a rule, but, perhaps, not invariably, the pigment finds a lodging also in the lung and in the kidney. The invariable absence of pigment in all the other organs is just as striking as is its constant presence in the liver, spleen and bone marrow. In malaria granules of melanin pigment as well as the organisms of the disease, congregate in the liver, in the spleen and in the bone marrow. The patient during a paroxysm suffers from fairly severe pains, which may involve various regions of the body. On the assumption that these pains might originate in bone marrow, Tait set himself the task of tabulating the sites of the pains complained of by patients in a large number of cases. Neglecting the occurrence of tenderness on pressure over the spleen and the frequent occurrence of epigastric or umbilical pain (provisionally classed as a referred pain), all the other pains of the disease were referable to regions containing bone marrow. The most frequent pains of all, and present in all cases, are pain in the back (especially sacral and lumbar, though sometimes dorsal as well) and headache (back of the eyes, frontal, vertical or occipital, as the case may be). Next in frequency are pains above and below the knee; then pains in the upper arm; more rarely in the lower part of the tibia and foot, or in the forearm and wrist. No case of costal pain was found, though in rare cases sternal pain was present. Pain in the cervical region was noted only once. Unlike the splenic tenderness, which is reduced by pressure, and in marked contrast with the pains of trench fever, these particular pains were in no way aggravated either by locally applied pressure or by movement and exercise. This discovery seemed further to support the view that they are "marrow" pains. Fimiliarity with the sites of malaria pain proved to be of value in differential diagnosis and in dealing with men who professed to have had recent attacks of malaria.

Pancreas Extract in Diabetes Mellitus.—Following the production of what appears to be a concentrated internal secretion of the pancreas and the demonstration of its physiologic activity in animals, and under careful control, its relatively low toxicity, the authors present a preliminary report on the pharmacologic activity of this extract in human diabetes mellitus. Clinical observations at this juncture would appear to justify the following conclusions: (1) Blood sugar can be reduced markedly even to the normal values. (2) Glycosuria can be abolished. (3) The acetone bodies can be made to disappear from the urine. (4) The respiratory quotient shows evidence of increased utilization of carbohydrates. (5) A definite improvement is observed in the general condition of these patients and in addition the patients themselves report a subjective sense of well being and increased vigor for a period following the administration of these preparations.

Endocrinology, Los Angeles

January, 1922, **6**, No. 1

Spontaneous Attack of Tetany During Paroxysm of Hyperpnea in Psychoneurotic Patient Convalescent from Epidemic Encephalitis. L. F. Barker and T. P. Sprunt, Baltimore.—p. 1.
Hypopituitarism and Its Treatment. H. Lisser, San Francisco.—p. 15.
Early Observations Pertaining to Hypophysis. H. G. Beck, Baltimore.—p. 40.
Water and Salt Metabolism in Diabetes Mellitus. J. Koopman, The Hague.—p. 48.
Disorders of Thyroid Gland. III. Pathologic and Clinical Significance of Diffuse Adenomatosis of Thyroid. E. Goetsch, Brooklyn.—p. 59.
Suprarenal Feeding in Conditions of Hyperthyroidism. J. Rogers, New York.—p. 73.
Suprarenal Enlargement in Rabbits. T. L. Squier, Battle Creek, and G. P. Grabfield, Boston.—p. 85.
Effect of Iodin and Iodythyrin on Larvae of Salamanders. I. Effect of Iodothyrin and Iodin on Metamorphosis of Ambystoma Maculatum. E. Uhlenhuth, New York.—p. 102.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1922, **19**, No. 2

Perfusion of Medulla of Terrapin (Pseudomys Troosti) with Epinephrin. W. J. R. Heinekamp, Chicago.—p. 131.
*Influence of Purgatives on Blood Concentration. F. P. Underhill and I. Errico, New Haven, Conn.—p. 135.
Physiologic Action of Some Protein Derivatives. IV. Toxicity of Vaughan's Crude Soluble Poison. F. P. Underhill and A. M. Hjort, New Haven, Conn.—p. 145.
Id. V. Relation of Blood Concentration to Peptone Shock. F. P. Underhill and M. Ringer, New Haven, Conn.—p. 163.
Id. VI. Influence on Blood Concentration of Vaughan's Crude Soluble Poison. F. P. Underhill and M. Ringer, New Haven, Conn.—p. 179.
Biologic Reactions of Arsphenamin. I. Mechanism of Its Agglutinative Action on Red Blood Cells in Vitro. J. Oliver and E. Douglas, San Francisco.—p. 187.
Id. II. Protective Action of Hydrophilic Colloids on Agglutination of Red Blood Cells by Arsphenamin. J. Oliver and S. S. Yamada, San Francisco.—p. 199.

Influence of Purgatives on Blood Concentration.—The significant feature in the action of purgation is the watery character of the stools. The question naturally arises "what is the source of this fluid?" Two possibilities present themselves: (1) the fluid is present because of lack of absorption of the intestinal contents induced, perhaps, by the presence of the purgative, or (2) the presence of the purgative draws water from the blood. It is quite evident that if water is drawn from the blood to any considerable extent by the action of the purgative in the bowel, such an influence is capable of measurement by observation of changes in blood concentration. In order to indicate the mode of action of different purgatives blood concentration studies were made by Underhill and Errico on animals. Magnesium sulphate, sodium sulphinate and Rochelle salts produced a distinct rise in the hemoglobin, ranging between 114 and 120 per cent. of the normal. The fact that purgatives exert a definite influence in the direction of concentrating the blood indicates that some care should be exercised in the administration of purgatives in diseased conditions especially in those states known to be responsible for concentrated blood. By ill advised use of purgatives it is quite apparent that a blood concentrated to some extent and yet not sufficiently concentrated to be dangerous in itself may reach a dangerous concentration by the added influence of the purgative. Such a factor may account, in part, for the collapse which at times follows the administration of a purgative. Castor oil and cascara sagrada produce no change whatever in the hemoglobin. Therefore, they probably produce by local irritation a very active peristalsis which hurries the intestinal contents along the alimentary tract, preventing the absorption of the entire contents.

Journal of Urology, Baltimore

January, 1922, **7**, No. 1

*Operation for Cure of Incontinence Associated with Epispadias. H. H. Young, Baltimore.—p. 1.
*Treatment of Malignant Disease of Prostate and Bladder. J. T. Geraghty, Baltimore.—p. 33.
*Case of Calcification of Seminal Vesicles. H. L. Kretschmer, Chicago. —p. 67.
*Modification of Differential Functional Test with Phenolsulphonephthalein. A. Peterson ,Los Angeles.—p. 73.
*Sarcoma of Suprarenal. H. G. Fuller.—p. 77.

Operation for Cure of Incontinence with Epispadias.—In two cases of epispadias associated with incontinence Young effected a radical cure by a new operation which he devised. In cases associated with incontinence of urine there is a muscular defect along the roof of the deep urethra associated with dilatation of the vesical orifice and the urethra in the region of the external sphincter. To obtain a radical cure of the incontinence and restoration to normal urination the plan followed consisted, briefly, in the excision of the superabundant roof of the urethra and restoring the vesical neck and external sphincter by suture.

Treatment of Cancer of Prostate.—The results obtained in the treatment of cancer of the prostate by various procedures or combination of procedures Geraghty says would seem to indicate that fulguration should be the method of choice in all benign and malignant papillomas which can be reached by endovesical means. When the tumor is resistant to fulguration, or if it is papillary carcinoma, noninfiltrating or superficially infiltrating, radium will give uniformly good results and the results will be obtained by surface applications to the tumors. When the tumor is situated deeply and is distinctly infiltrating but sufficiently localized so that resection could be carried out and the growth removed with a definite healthy margin of tissue, this procedure should be employed and no dependence placed on radium therapy. When following the removal of the growth the operator feels that possibly he has not given sufficient margin at any one point, radium should be inserted in the contiguous tissue. In the very extensive cases of carcinoma in which it is impossible satisfactory to carry out endovesical treatment with radium, it is Geraghty's custom to open the bladder suprapubically, destroy as much as possible of the tumor of tumors with the actual cautery, and then implant radium emanation tubes approximately from 1 to 2 cm. distant from each other.

So far, however, results in these otherwise hopeless cases have not been very brilliant.

Calcification of Seminal Vesicles.—Kretschmer's patient was only 14 years of age, yet there was present extensive calcification of one seminal vesicle. The boy had previously been operated on for stone in the bladder but no stone was found. A diagnosis of stone in the ureter was made and the boy's father was told by the surgeon that he had crushed the stone with his fingers and that the fragments would pass. The suprapubic wound failed to close, discharging clear urine, as a rule, but pus at intervals. Frequency of urination was present for several years. Physical examination was negative, except for the presence of a slightly enlarged right kidney. Examination of the urine showed albumin, pus cells, red blood cells and bacteria. Roentgen-ray examination showed the presence of an elongated, moderately dense shadow about 1 by 3 cm. in the lower pelvic region on the left side. From its position and contour it was believed that the shadow was not due to a stone in the ureter. Cystoscopy showed a mild generalized cystitis. Rectal examination disclosed a left seminal vesicle hard, irregular, and corresponding in outline with the shadow seen on the roentgenogram. Palpation showed that a definite interval existed between this hard calcified seminal vesicle and the shadowgraph catheter. Repeated examinations were made for tubercle bacilli in the urine from the left kidney and all were negative. A diagnosis of pus kidney, probably tuberculous, was made. Left nephrectomy was carried out. The removed kidney showed the presence of tuberculous pyonephrosis.

Modified Phenolsulphonephthalein Test.—Peterson describes a concentration test of phenolsulphonephthalein. After ureteral catherization has been accomplished and specimens collected for microscopic examinations 1 c.c. phenolsulphonephthalein is given intravenously, its time of appearance noted and the phenolsulphonephthalein collected for fifteen minutes. The bladder specimen is obtained either by having the patient void or drawn by a soft catheter. An equal number of cubic centimeters (usually 5 or less) of each kidney specimen is measured into a suitable glass graduate and a few drops of sodium hydrate solution are added to each. Each specimen is diluted with distilled water to 200 c.c., filtered and read in the colorimeter. The strength of color expressed in per cent. represents the concentration of the phenolsulphonephthalein excretion from each kidney during the period of observation without reference to the quantity actually excreted and is constant without consideration of leakage into the bladder. On the completion of the concentration reading, the remainder of each specimen is added to its respective sides and the quantitative test completed in the usual way. The amount of phenolsulphonephthalein in the bladder specimen is also determined.

Sarcoma of Suprarenal.—In Fuller's case the predominating symptom was severe pain referable to the lower scapular region. At first it was thought that this was a case of empyema, but roentgen-ray examination led to a diagnosis of either perinephritic abscess or new growth, presumably of the suprarenal, the greatest leaning being toward the latter diagnosis. Operation disclosed a tumor mass apparently springing from the upper pole of the kidney, extending upward and backward, displacing the diaphragm. The mass was distinctly above and nonadherent to the kidney structure, presenting all typical and unmistakable physical characteristics of malignant growth of the left suprarenal. It proved to be a large round cell sarcoma.

Kentucky Medical Journal, Bowling Green

March, 1922, **20**, No. 3

Blastomycosis: Syphilis. Case Reports. W. J. Young, Louisville.—p. 156.
Normal Menopause. W. L. Mosby, Bardwell.—p. 157.
Abnormal Menopause. H. A. Gilliam, Melburn.—p. 159.
Diagnosis and Treatment of Toxic Goiter. L. W. Frank, Louisville.—p. 159.
Surgical Treatment of Goiter. J. R. Wathen, Louisville.—p. 168.
Blood Transfusion in Medical Diseases. J. R. Morrison, Louisville.—p. 174.
Three Cases of Multiple Sclerosis: Review of Recent Literature. M. Flexner, Louisville.—p. 180.
Various Methods of Performing Cesarean Section with Indications and Contraindications. L. C. Redmon, Lexington.—p. 187.
Acute Brain Injuries. E. W. Jackson, Paducah.—p. 191.
Constipation. C. V. Heistand, Campbellsville.—p. 194.
Plea for Early Diagnosis and Treatment of Hyperthyroidism. C. W. Dowden and C. D. Enfield, Louisville.—p. 196.
Diagnosis and Treatment of Encephalitis. J. J. Moren, Louisville.—p. 200.
Cancer of Large Intestine. G. A. Hendon, Louisville.—p. 204.
Acute Abdomen: Diagnosis and Differential Diagnosis. W. Z. Jackson, Arlington.—p. 206.
Future of Medicine as Affected by Ultraspecialization. E. H. Ochsner, Chicago.—p. 208.

Maine Medical Association Journal, Portland

March, 1922, **12**, No. 8

Acute Mechanical Ileus. F. H. Jackson, Houlton.—p. 211.
Value of Two Stage Operation in Surgery. E. H. Risley, Waterville.—p. 218.
Prostatism. C. N. Peters, Portland.—p. 227.

Medical Record, New York

March 25, 1922, **101**, No. 12

The Stepfather. Medical Comedy with Psychanalytic Trend. C. L. Dana, New York.—p. 484.
Headache and Chronic Mastoiditis. W. L. Culbert, New York.—p. 486.
*Fluoroscope in Diagnosis of Diseases of Heart. L. F. Bishop, New York.—p. 489.
*Carcinoma of Pancreas. J. B. Deaver, Philadelphia.—p. 492.
Value of Radium in Management of Uterine Hemorrhage. J. O. Polak, Brooklyn.—p. 493.
Epidemic Encephalitis Simulating Brain Tumor. Three Cases. I. J. Sands, New York.—p. 494.
New Duodenal Tube. L. W. Kohn, New York.—p. 499.
*Diazo Reaction. R. A. Kilduffe, Pittsburgh.—p. 500.

Fluoroscopy in Diagnosis of Heart Disease.—Bishop advocates fluoroscopy as a routine procedure in the examination of large numbers of patients to determine which are deserving of detailed cardiologic study and which are not.

Prevention of Carcinoma of Pancreas.—One possible way of preventing the development of cancer of the pancreas, Deaver says, is by preventing any development of chronic pancreatitis and this is by early attention to disease of the stomach, gallbladder, bile ducts and liver. That these latter conditions can be cured to a very great extent is generally conceded, but cancer of the pancreas can never be cured. The only thing that surgery offers is to relieve back pressure of the bile and the intolerable itching caused by the jaundice.

Value of Diazo Reaction.—The technic used by Kilduffe was that advocated by Greene. In 2,017 tests a positive reaction occurred twenty-eight times, an incidence of 1.4 per cent. The reaction was positive in every case of pneumonia tested (six) and was constantly found positive at some time or another in every case of typhoid fever (five). Two known cases of tuberculosis were actively progressing and in three suspects the history and clinical picture were very suggestive, although a positive sputum was not obtained during the period of examination reported. The occurrence of a positive reaction following the injection of neo-arsphenamin is of some interest though without adequate explanation. The result of the series indicates that with the technic used the reaction does not occur promiscuously.

Missouri State Medical Association Journal, St. Louis

March, 1922, **19**, No. 3

Are We Giving Our Parturient Women A Square Deal? F. T. Van Eman, Kansas City.—p. 97.
Review of Literature of Hemorrhagic Diseases of Newborn. D. Walthall, Kansas City.—p. 100.
Gonorrhea in Women. W. J. Willis, Springfield.—p. 102.
Nontuberculous Infections of Kidney. N. Moore, St. Louis.—p. 104.
Psychic Influence on Bladder Disturbances in Women. R. E. Wobus, St. Louis.—p. 111.
Plea for Closer Cooperation of Specialist and Pediatrician on Tonsil and Adenoid Question. E. L. Russell, Kansas City.—p. 113.
Efficiency and Economy in Pediatric Practice. J. Zahorsky, St. Louis.—p. 114.
Perforating Wounds of Eyeball. E. S. Connell, Kansas City.—p. 117.
Importance of Ophthalmoscopic Examination in Children. J. P. Costello, St. Louis.—p. 118.
Obligations of Physicians and Problems of Medical Society. W. W. Graves, St. Louis.—p. 120.
*Wassermann Test at Missouri School for Blind. H. D. Lamb, St. Louis.—p. 124.

Wassermann Test in School for Blind.—At the Missouri School for the Blind the Wassermann test has been made on

155 scholars. Among these are 19, or 12.3 per cent., in whom syphilis appeared to be of evident etiologic significance. There were 41 cases of ophthalmia neonatorum, or 21.7 per cent., which would make 34 per cent. or one-third of all the cases due to venereal disease. In detail the results were: retinochoroiditis, 5 cases, 5 positive; parenchymatous keratitis, 3 cases, 1 negative, 2 positive; optic atrophy, 25 cases, 5 declined test, 12 negative, 8 positive; progressive uveitis, 10 cases, 9 negative, 1 positive; malformations (congenital), 26 cases, 5 declined test, 19 negative, 2 positive.

Neurological Bulletin, New York

September-October, 1921, **3**, No. 9-10

*Bradykinetic Analysis of Somatic Motor Disturbances: Analysis of Motor Disorders by Aid of Ultrarapid Moving Pictures. S. P. Goodhart and F. Tilney, New York.—p. 295.

Segmental or Nuclear Trigeminal Sensory Disturbance. I. S. Wechsler, New York.—p. 324.

*Cerebral Subarachnoid Hemorrhage with Recovery. C. A. McKendree, New York.—p. 327.

Significance of Nystagmus in Lesion of Abducens Nucleus. J. Rosett, New York.—p. 332.

*Arthritic Muscular Atrophy; Report of Case Simulating Anterior Crural and Obturator Neuritis. R. A. Gerber, New York.—p. 338.

*Two Cases with Signs of Increased Intracranial Pressure Presenting Unusual Roentgen-Ray Findings in Cranium. S. Brock, New York.—p. 344.

Bradykinetic Analysis of Motor Disorders.—Disturbed motor function has been studied for many years by Goodhart and Tilney by means of ultrarapid moving pictures taken at the rate either of 160 or 300 exposures per second. The ordinary cinematographic rate is sixteen exposures per second, so that the ultrarapid rate is from ten to eighteen times as fast. The normal rate of projection on the screen offers opportunity for the study of every component in each movement. The motion, thus slowed down, serves as the basis for what the authors have termed bradykinetic analysis. The motor disorders submitted to bradykinetic analysis include choreiform movements, torsion spasms, extreme intention tremors and cerebellar ataxia. These motor defects occurred in cases of chronic degenerative chorea, astasia abasia, dystonia musculorum deformans, multiple sclerosis and congenital cerebellar aplasia. In all the cases studied the motor defect was characterized by some pronounced abnormal and adventitious element of motion which produced a definite deformity of movement. Cinematographic analysis indicates that all purposive movements depend on the concurrent and synchronized operation of the kinetic and static mechanisms. Such movements are made up of a series of postures beginning with an initial posture and concluding with a terminal posture. This series of postures during a movement may readily be demonstrated by stopping the projection apparatus at each picture either in the slow or normal reproduction. Such an act as taking a step forward then appears to be composed of a series of successive postures.

Cerebral Subarachnoid Hemorrhage.—McKendree cites the case of a man, aged 31, a syphilitic, who suffered two vascular accidents. Especially noteworthy were the sudden onset of peculiarly severe headache, followed rapidly by vomiting; rigidity of the neck, and pain in the shoulders and lower back, which gradually subsided; three weeks later, sudden recrudescence of headache, vomiting, stiff neck, convulsions of the purely tonic type, delirium, etc.; bradycardia, persisting leukocytosis, strongly positive Wassermann reaction; intraocular hemorrhages on the right; left facial paresis, and transitory clonus; bloody spinal fluid on four occasions, and gradual and progressive recovery. McKendree believes that the hemorrhage resulted from the rupture of a very small aneurysm. As the patient suffered such a small amount of hemorrhage, it is most probable that the ventricles and the cisterns were not invaded. The author suggests that the aneurysm was located on the piaarachnoid on the right side, possibly on the convexity of the brain.

Arthritic Muscular Atrophy and Paresis.—Gerber reports a case of muscular atrophy, secondary to arthritis of the left hip, with paresis or partial paralysis of the muscles supplied by the anterior crural and obturator nerves.

Intracranial Osteoma and Fracture of Wing of Sphenoid.—One of the cases cited by Brock was an instance of cortical epilepsy with extensor movements of the left upper and lower extremities and left face, associated with an unusual roentgenogram of the calvarium (intracranial osteoma?) A mass having almost bonelike density extended downward and forward just anterior to the junction of the frontal and parietal bones, apparently dipping down into the longitudinal fissure. There was no history of venereal disease in this case and the blood Wassermann reaction was negative. Before admission to the hospital (December 6) the patient was given 15,000 units of tetanus antitoxin. From December 7 to December 13, he was given sodium bromid, 0.65 gm., every four hours, and occasional doses of morphin sulphate, 0.008 gm. December 15, potassium iodid was begun in 1 gm. doses, three times a day, increasing 0.006 gm. a day until December 22. December 16 and 21, he was given 0.04 gm. mercury salicylate in liquid petrolatum intramuscularly. December 20 his symptoms began to abate, and in three days had entirely disappeared. In the second case there was paralysis of the first six cranial nerves on the right side complicating fracture of the right side of the sphenoid bone, and adjacent floor of the orbit. The very slow involvement of these nerves, the negative serology, and the roentgen-ray findings constituted an interesting clinical picture. The posterior clinoid processes of the sella turcica were much enlarged with some encroachment on the pituitary fossa. An irregular line, suggesting an old fracture into the right greater wing of the sphenoid bone, continuing into the floor of the right orbit was seen. It also extended along the nasal side of the orbit into the right frontal sinus, which was somewhat clouded, giving the appearance of a peculiar thickening in the right frontal sinus.

New York Medical Journal

March 15, 1922, **115**, No. 6

Effects of Faulty Foods on Endocrine Glands. R. McCarrison, Coonoor, Madras, India.—p. 309.

Effect of Endocrine Derangement on Dental Tissues. F. W. Broderick, Bournemouth, England.—p. 314.

Endocrine Interactions. D. M. Kaplan, New York.—p. 321.

Study of Endemic Goiter in British Columbia. H. E. Waller.—p. 325.

Early Diagnosis and Treatment of Hyperthyroidism. E. Goetsch, Brooklyn.—p. 327.

Pathogenesis, Symptomatology and Treatment of Hyperthyroidism. I. Bram, Philadelphia.—p. 336.

Interrelation of Endocrines and Vegetative Nervous System. W. V. P. Garretson, New York.—p. 344.

*Suprarenals in Asthma. A. F. Hurst, London.—p. 347.

Anaphylaxis and Endocrines. H. R. Harrower, Glendale, Calif.—p. 348.

*Incidence of Syphilis in Hyperthyroidism and Myxedema in Children. M. B. Gordon, Brooklyn.—p. 350.

*Case of Hypothyrosis in Infant. A. E. Siegel, Philadelphia.—p. 352.

Epinephrin in Asthma.—An attack of asthma can, Hurst says, in fact, be cut short by the subcutaneous injection of epinephrin more rapidly than by any other method. The most efficacious dose is much smaller than that generally given. In many cases 1 minim of 1:1,000 epinephrin chlorid is enough, more than 2 minims being rarely required. But the injection should be given at the beginning of an attack, directly a patient wakes in the night, for instance, and not half an hour or an hour later when it has reached its full development. The relief is so immediate that the patient often falls asleep within five minutes of waking in an attack. Such small doses give rise to no unpleasant sensations such as frequently follow the injection of 3 or more minims. The treatment can be continued for long periods without any fear of ultimately causing arteriosclerosis.

Syphilis and Hypothyroidism.—Gordon studied the Wassermann and luetin reactions in forty-two children suffering from some form of diminished thyroid secretion in an attempt to valuate the importance of syphilis as an etiologic factor in the production of these diseases. The results obtained indicate that syphilis is not of great etiologic importance in the causation of either myxedema or hypothyroidism in children. It is, however, possible for syphilis to attack the thyroid with the production of these conditions. The presence of a mental deficiency in three of the five positive cases is significant of the predilection of the *Spirochaeta pallida* for the brain and nervous system.

Hypothyrosis in Infants.—That cretinism may be found in the offspring of goitrous parents is shown in Siegel's case.

The mother had an enlarged thyroid gland which appeared during her first pregnancy, but which enlarged for the most part during the last pregnancy. There was no evidence either of increased or diminished function and the gland was apparently cystic. Following the use of thyroid extract 1.5 grains daily in three doses, there was immediate and marked improvement. Under the continuation of this treatment, with some reduction from the initial dose, the improvement has been progressive.

Northwest Medicine Seattle

March, 1922, **21**, No. 3

*Diaphragmatic Hernia. B. N. Wade, oPrtland, Ore.—p. 65.
Roentgenologic Review of 750 Gastro-intestinal Examinations. M. F. Dwyer, Seattle.—p. 70.
Gastric and Duodenal Ulcer. A. A. Matthews, Spokane, Wash.—p. 74.
Medical Treatment of Ulcer of Stomach and Duodenum. G. Baar, Portland, Ore.—p. 78.
Nonsurgical Drainage of Gallbladder. T. C. Gibson, Salt Lake City.—p. 79.
Preventable Causes of Adhesions. P. W. Willis, Seattle.—p. 81.
Medical Legislation in Idaho. E. E. Laubaugh, Boise, Idaho.—p. 83.
What is the Matter with Practice of Medicine. W. M. Karshner, Pulyallup, Wash.—p. 85.

Diaphragmatic Hernia.—Two cases of diaphragmatic hernia are reported by Wade. One was a traumatic hernia following a stab wound, and the other an acquired hernia following an empyema.

Philippine Journal of Science, Manila

November, 1921, **19**, No. 5

New Philippine Coleoptera. K. M. Heller.—p. 523.

Tennessee State Medical Association Journal, Nashville

March, 1922, **14**, No. 11

Mediastinal Abscess. W. A. Bryan, Nashville.—p. 405.
Study of Adamantinoma with Report of Case. W. G. Carnathan, Nashville.—p. 408.
Diagnosis of Chronic Appendicitis. F. B. Bogart and W. H. Cheney, Chattanooga.—p. 411.
Glaucoma Operations. S. T. Hubbard, Chattanooga.—p. 414.
Effect of Yeast Vitamin in Marasmus. R. H. Perry, Nashville.—p. 422.
Radium Therapy. W. D. Haggard and C. R. Crutchfield, Nashville.—p. 423.
Third Stage of Labor. W. B. Anderson, Nashville.—p. 431.

Texas State Journal of Medicine, Fort Worth

March, 1922, **17**, No. 11

Better Gynecology and Better Obstetrics. W. L. Crosthwait, Waco.—p. 522.
Apprehensions for Rural Mother of Future. C. E. Durham, Hico.—p. 525.
Medical Gynecology. G. B. Foscue, Waco.—p. 528.
Ever Present Female Patient. A. D. Patillo, Wichita Falls.—p. 533.
Pelvic Inflammation of Female, with Special Reference to Peritoneum. E. Dunlap, Dallas.—p. 535.
Abdominal Delivery: Reasonable Procedure. W. Cantrell, Greenville.—p. 538.
Cystocele. C. C. Cade, San Antonio.—p. 540.
Imperative Structures That Are Utilized in Support of Pelvic Diaphragm. G. B. Thaxton, Dallas.—p. 541.
Some Eye Disturbances Due to Pelvic Reflexes. E. F. Gough, Wasahachie.—p. 543.

Virginia Medical Monthly, Richmond

March, 1922, **48**, No. 12

Congenital Hypertrophic Pyloric Stenosis. F. D. Wilson, Norfolk.—p. 675.
Surgical Treatment of Congenital Hypertrophic Pyloric Stenosis. S. McGuire, Richmond.—p. 679.
Treatment of Hemorrhoids. H. B. Stone, Baltimore.—p. 680.
Use of Bags and Version at Term. M. P. Rucker, Richmond.—p. 682.
Antisepsis in Obstetrics. G. B. Byrd, Norfolk.—p. 685.
Borderline Cases of Calculus Disease of Kidney. R. A. Hooe, Washington, D. C.—p. 687.
Variation in Sugar Content of Spinal Fluid. W. B. Martin, Norfolk.—p. 689.
Bags and Version. R. P. Kelly, Lynchburg.—p. 691.
Time and Tuberculosis. C. H. Cocke, Asheville, N. C.—p. 695.
Treatment of Gonorrhea in Male. C. B. Pritchett, Danville.—p. 700.
Management of Chronic Nephritis. W. B. Blanton, Richmond.—p. 703.
Healthy Tonsils. W. C. Moomaw, Petersburg.—p. 708.
Eversion Fractures of Ankle Joint. J. W. Gibbon, Charlotte, N. D.—p. 712.
Causes of Hypertension. F. C. Rinker, Norfolk.—p. 715.
Prevention of Heart Disease. W. A. Plecker, Richmond.—p. 717.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

February, 1922, **3**, No. 1

*Effects of Changes in Intraventricular Pressure and Filling on Ventricular Rhythm in Partial and Complete Heart Block. I. DeB. Daly and E. H. Starling.—p. 1.
*Importance of Inorganic Constituents of Food in Nutritional Disorders. I. Rickets in Pigs. W. E. Elliot, A. Crichton and J. B. Orr.—p. 10.
Comparative Study of Normal and Malignant Tissues Grown in Artificial Culture. A. H. Drew.—p. 20.
*Urea Tests of Renal Function. G. A. Harrison.—p. 28.
*Experiences with Schick Test and Active Immunization Against Diphtheria. S. M. Copeman and R. A. O'Brien, A. J. Eagleton and A. T. Glenny.—p. 42.
Carbohydrate Metabolism of Surviving Mouse Tissues and Tumors. B. R. G. Russell.—p. 51.
*Wassermann Reaction in Relapsing Fever. H. E. Road.—p. 59.

Effects of Changes in Intraventricular Pressure on Rhythm in Heart Block.—In confirmation of other observers Daly and Starling have found that after complete division of the auriculoventricular bundle, acceleration of the idioventricular rhythm can be evoked by stimulation of the cardiosympathetic nerves. In the heart separated altogether from nervous impulses, as in the heart-lung preparation, a rise of arterial pressure, or increased inflow into the heart, frequently causes increase in the idioventricular rhythm after complete division of the auriculoventricular bundle. It cannot yet be decided whether this result is due to the stimulating effects of increased tension or increased stretching of the ventricular wall, or to a direct irritant effect of the stretching on the recent lesion in the neighborhood of the auriculoventricular bundle. Reasons are given for believing that the latter is the more likely explanation. After partial division of the auriculoventricular bundle, a rise of arterial pressure or increased filling may cause the block to become complete, the block becoming once incomplete when the pressure or filling is reduced to its previous value.

Value of Inorganic Food Constituents in Nutritional Disorders.—Pigs fed on a diet of bran and oatmeal, which contained an abundance of the three vitamins, nevertheless developed rickets in two months. Another series, however, under the same conditions, but supplied with calcium salts, did not develop rickets. Pigs fed on oatmeal, rice, skimmed milk and salt also developed rickets, but the control series with calcium salts did not. If animals were fed on a diet containing a minimum of "fat soluble A" but plenty of calcium salts, the rickets syndrome did not appear although the condition of the animals was not so good as that of the controls.

Urea Tests of Renal Function.—Harrison found the provocative urea concentration test useful in 400 cases. When applying the test (*a*) it is advisable to withhold fluids for at least six hours before the test; (*b*) it is safest to measure the volume of urine passed each hour, even though the urea be not estimated in all samples. A volume greater than 150 c.c. (first hour), or 100 c.c. (second or subsequent hours), generally signifies excessive diuresis when a result below 2 per cent. does not necessarily imply an inefficient kidney. The test should be repeated and controlled by estimating the blood urea. (*c*) Occasionally it may be impossible to bring diuresis within these limits. Other test are then essential. In one case of diabetes insipidus, diuresis was controlled by 1 c.c. of pituitary extract subcutaneously. (*d*) Fifteen gm. may not always be sufficient to provoke a concentration greater than 2 per cent., although the kidneys be efficient. (*e*) Proteinuria exceeding 0.4 per cent. (Aufrecht) may introduce a large error. Blood urea estimations may be misleading (e. g., before operation) if the nature of the diet is not considered. By simply combining the urea concentration test (15 bm. by mouth) and the blood-urea estimation, the former is chocked and the latter is standardized. The "normal" values for the urea concentration test (urine), the blood urea and the urea concentration factor are discussed. The use of the urea test in the prognosis of renal disease and in the treatment of edema in nephritis is briefly mentioned.

Experience with Shick Test and Active Immunization Against Diphtheria.—In a residential school of 329 children, among who a recent epidemic of diphtheria had occurred, eighteen (6 per cent.) carried morphologic *B. diphtheriae* in the throat or nose. At the first swabbing, at the end of the epidemic, 5 per cent. of carriers were found; at the second, two months later, 2 per cent. From these eighteen children twelve cultures were isolated, of which five were virulent. The later swabbings from these five carriers showed either avirulent organisms or no "morphologic diphtheria" bacilli. On the grounds of a bacteriologic examination of a large number of cases of diphtheria, carriers and convalescents, the following suggestions are tentatively put forward by Copeman et el. That the "avirulent carrier" is of no importance epidemiologically. That the danger of a carrier of virulent bacilli is, at the time of examination, proportionate to the number of virulent bacilli present in throat and nose, and, therefore, to the ease with which the virulent bacilli can be isolated. Of 329 children, aged from 3 to 16 years, 102, i. e., 31 per cent., gave a positive Schick reaction; 95 per cent. of the readings made on the first day proved to be accurate. Of the 227 children who had given a negative response when first Schick tested, 203 remained in the school eleven weeks later. Of these, 201 on being retested again gave a negative or a negative (and pseudo) response, thus confirming the decision made two months previously. Two showed a positive response at the second test; these two children had had antitoxin injected shortly before the first test was made. These 102 children were inoculated with toxin-antitoxin mixtures (Park and Zingher formula). Local reactions occurred in about one third of the children; though in some of these the area of inflammation was large, the activities of the children were but little interfered with. Constitutional reactions were slight in all but two of the children. Of the 102 children, ninety-nine were still present in the school eleven weeks later when the Schick test was repeated. Two gave an undoubtedly positive response, the remainder a negative or negative (and pseudo) reaction; 98 per cent. were, therefore, immune.

Wassermann Reaction in Relapsing Fever.—From evidence presented by Road it appears probable that a transient positive Wassermann reaction may be found to be a constant phenomenon during the acute stage of relapsing fever. The transient character distinguishes it from the reactions due to syphilis. If the positive result is observed on every occasion in a particular patient, it may be suspected that he has syphilis also.

British Medical Journal, London

March 11, 1922, **1**, No. 3193

*Surgery of Blood. T. Sinclair.—p. 375.
*Treatment of Insomnia. R. D. Rudolf.—p. 377.
*Rickets: A Theory of Metabolic Disturbances and of Its Association with Tetany. N. Paton.—p. 379.
Amputations at Shoulder and at Hip. H. Littlewood.—p. 381.
Clinical Aspects of Abdominal Tuberculosis. J. Morley.—p. 383.
Resting Metabolism of Children and Adults in Switzerland. L. Hill and J. A. Campbell.—p. 385.
Pertussis with Leukocytosis of 176,000. G. Bourne and J. M. Scott.—p. 387.

Surgery of Blood.—Sinclair discusses the part played by surgery in the treatment of such conditions as hemophilia hemorrhage, thrombosis and embolism, splenic anemia or Banti's disease, splenomedullary leukemia and other so-called blood diseases.

Treatment of Insomnia.—Rudolf asserts that all cases of insomnia may be classified as being produced either by an increase in the excitability of the nerve centers or from an increase in the afferent stimuli reaching those centers, or by both. In every case the afferent stimuli should be reduced as much as possible, and to this end, after the environment has been made as appropriate as practicable, physical therapy, especially hydrotherapy, should be employed. If the excitement of the cerebral centers remains too great, then this may have to be reduced by the employment of hypnotics, and here the mildest should first be used. Opium and its derivatures should never be employed in the treatment of chronic insomnia, or in that dependent on abnormal mental states.

Error in Lecithin Metabolism Cause of Rickets.—Panton suggests that an error in the metabolism of lecithin, probably in the liver, may be a causal factor in the failure of bone formation in rickets, and that this faulty metabolism may in some cases be accompanied by an increased conversion of cholin into guanidin compounds, thus explaining the association of tetany with rickets.

March 18, 1922, **1**, No. 3194

*Pernicious Anemia and Septic Anemia. W. Hunter.—p. 421.
Sterility with Reference to State. R. A. Gibbons.—p. 427.
Digestibility of Bacteria. C. E. Dukes.—p. 430.
*Slipping Rib. R. Davies-Colley.—p. 432.
Restriction of Influenza Epidemics in Schools by Use of Local Prophylactic Vaccines. A. I. Simey and J. W. H. Eyre.—p. 433.
Aluminum Wire Throat Swabs. L. Grant.—p. 434.
*Influenza with Extreme Hyperpyrexia. E. T. Glenny.—p. 434.

Pernicious Anemia and Septic Anemia.—In the diagnosis of pernicious anemia Hunter stresses again the occurrence of sore tongue as the earliest and chief diagnostic feature. Such a history, associated with the clinical features of increased blood destruction (hemolysis) is, according to his observation, the most important infective and diagnostic feature of this disease. So much is this the case that the name which would, in his judgment, most clearly connote this disease, help in its early recognition and subsequent control, and at the same time get rid of the word pernicious, would be "glossitic hemolytic anemia," or, more shortly, "glossitic anemia." The second great outstanding feature of this disease is the extraordinary marked seasonal character of its onset and its periodic relapses—namely, July to September for its onset, and approximately the same months, July to September, for its relapses. Another feature shown in other cases, one of great importance, is the surprising degree of anemia which accompanies the first attack, down to 40 per cent., a fact of importance since it is very seldom that the blood is examined at this period. Lastly, a constant feature is the existence of nervous features in slighter or severer degree in all cases of the disease—visceral pains (in tongue, stomach, or intestine), peripheral, cerebral and mental. Another form of anemia discussed by Hunter is septic anemia. Oral sepsis can and often does cause a form of anemia quite different from the hemolytic anemia of the sore tongue disease. The anemia so caused is not an anemia sui generis as the former is; it is an anemic condition by long standing sepsis—chiefly streptococcal—such as accompanies dental disease, or may be found from time to time in adjacent parts, especially the antrum and nasal air sinuses. This septic anemia is, in Hunter's experience, the commonest form of all anemias. The intense clinical interest of this anemia is that it may not only exist alone. For more frequently it exists along with and complicates other anemias in which similar conditions of oral sepsis are present, and herein lies part of the great importance of oral sepsis in connection with the disease termed pernicious anemia. Hunter discusses the increased powers of recovery after removal of sepsis and the powers of recovery in glossitic anemia.

Slipping Rib.—Abnormal mobility of the lower intercostal joints, or slipping rib, causing painful symptoms, Davies-Colley asserts is a rare condition yet it is not mentioned in the modern textbooks of surgery. His two patients were quite incapacitated by the excruciating pains which followed any attempt to do manual work. The pain is described as of a sharp, stabbing nature, giving place after a few moments to a dull ache, which lasts for a considerable time, and may, indeed, persist throughout the day, only disappearing after the night's rest. In its position at the costal margin it resembles the pain due to so many deeper lesions so that the diagnosis is missed. The treatment consists in resection of the loose terminal portion of the rib cartilage. In Colley's cases this was followed by immediate and lasting relief from symptoms.

Extreme Hyperpyrexia in Influenza.—Glenny records a case of influenza in which the temperature was as high as

114 F. on one occasion. The axillary temperature twice reached 112 F. Every possible source of error was eliminated. That the patient recovered is ascribed to the fact that the high temperatures were of short duration, that cardiac tonics were given before the heart showed signs of collapse, and that throughout two invaluable nurses acted with commendable promptitude.

Indian Medical Gazette, Calcutta

February, 1922, **57**, No. 2

Syphilis in Relation to Mental and Nervous Diseases. A. W. Overbeck-Wright.—p. 41.
Prophylactic Value of Inoculation Against Influenza from Experience of Epidemic at Khulna Jail. S. L. Sarkar.—p. 51.
Extirpation of Lacrimal Sac. R. E. Wright.—p. 52.
Presence of Infectious Jaundice in Bombay. M. J. Parmanand.—p. 54.
Case of Fungating Endocarditis (Streptococcal) Leading to Rupture of Aortic Valve, Successfully Treated with Stock Serum and Autovaccine. U. P. Basu.—p. 57.
*Fracture of Atlas and Axis. E. W. Bradfield.—p. 59.

Fracture of Atlas and Dislocation of Axis.—Bradfield's patient fell into a well two months before he saw him and sustained a backward dislocation of the axis and a fracture of the atlas. His head and neck were rigid but not absolutely fixed. There was no anesthesia nor neuralgia in the area supplied by the great occipital nerve, and no paralysis of any of the neck muscles. The knee jerks were slightly exaggerated and the plantar response was extensor in character. No other nerve symptom could be elicited. The boy sought treatment for "fever" and not for this injury, which caused him little inconvenience.

Journal of Laryngology and Otology, Edinburgh

March, 1922, **37**, No. 3

Problems Which May Present Themselves to Occasional Broncho-Esophagoscopist. R. M'Kinney, Memphis, Tenn.—p. 109.
Structural Type of Mastoid Process, Based on Skiagraphic Examination of One Thousand Craniums of Various Races of Mankind. A. L. Turner and W. G. Porter.—p. 115.
Two Hundred Cases of Tonsils and Adenoids Treated by Operation. F. G. Wrigley and G. E. Archer.—p. 122.
Pathologic and Clinical Aspects of Deaf-Mutism. J. S. Fraser.—p. 126.
Foreign Body in Left Bronchus Removed by Lower (Tracheal) Bronchoscopy. J. S. Fraser.—p. 140.
New Tracheotomy Tube and False Membrane Forceps. A Cubley.—p. 141.

Journal of Tropical Medicine and Hygiene, London

March 1, 1922, **25**, No. 5

*Nature of Antigen in Complement Fixation Test for Bilharziasis. G. Z. L. LeBas.—p. 49.
Case of Elephantiasis of Vulva. J. G. MacNaughton.—p. 55.

Complement Fixation in Bilharziasis.—From the results obtained by LeBas it would appear that the antigenic substance, acting in the test for bilharziasis, is insoluble in absolute alcohol and acetone; since the treatment of the material by these two reagents did not remove it, and it was not present in the alcohol solution fraction. Further, the antigenic substance cannot have been destroyed by prolonged treatment with acetone and absolute alcohol, nor irreversibly precipitated by them; since it would not then have been found in solution in the subsequent treatment with 50 per cent. alcohol. It must be soluble to some extent in physiologic solution of sodium chlorid, since extracts with this solvent yield an efficient antigen. The solubility character of the class of alcohol soluble proteins—the prolamines—which are insoluble in absolute alcohol and insoluble in water, but are soluble in from 50 to 85 per cent. alcohol, would appear to be coincident with that of the antigen.

Lancet, London

March 11, 1922, **1**, No. 5141

*Amebic Liver Abscess: Etiology and Pathology. L. Rogers.—p. 463.
Metric System for Prescribing. W. C. Sillar.—p. 469.
*Surgical Treatment of Exophthalmic Goiter. W. H. C. Romanis.—p. 471.
*Etiology of Gout L. J. Llewellyn.—p. 475.
Estimation of Physical Fitness. A. A. Mumford.—p. 478.

Etiology of Amebic Liver Abscess.—Summarizing his review of the etiology and pathology of amebic abscess of the liver, Rogers says the serious affection formerly known as tropical liver abscess, both in the acute multiple, small and chronic large single forms, is produced by infection through the portal vein with the *Endameba histolytica*, only very occasionally assisted by bacteria, and is always secondary to antecedent amebic ulceration of the large bowel, which is clinically active and acute in the multiple variety, but usually completely latent clinical in the more chronic single variety, while such abscesses never occur in relation to bacillary dysentery.

Local Anesthesia in Goiter Operations.—Of 250 patients with exophthalmic goiter of all types of severity, on whom Romanis has operated, many with pulse rates of more than 180 and some with auricular fibrillation and other gross disorganization of the heart, only six, or 2.4 per cent., have succumbed. Performance of the operation under local anesthesia Romanis is convinced has largely contributed to the low mortality. Of the six patients who died, two were operated on under ether. Five patients operated on under local anesthesia developed pneumonia (to which two of them succumbed). It would appear, therefore, that in postoperative pneumonia, in general, the anesthetic is by no means necessarily the cause, and that, perhaps, anesthetists have been blamed unjustly for their share in the production of this complication. Other details in connection with the performance of the operation are discussed.

Heredity of Gout.—Gout, Llewellyn asserts, is purely hereditary. A tendency to cellular sensitization is the pathologic groundwork of the disorder—viz., latent gout. The gout is evoked by the corresponding protein or antigen, whether animal, vegetable, bacterial, or other. It exerts its effects through the medium of vascular endothelial poisoning, with effect on the tonus of unstriped muscle, especially the bronchioles. The same finds its clinical expression in the regular and so-called irregular manifestations of gout.

March 18, 1922, **1**, No. 5142

*Orthopedic Aspects of Rheumatoid Arthritis. A. H. Todd.—p. 515.
*Application of Modern Methods in Treatment of Psychoses. R. G. Rows.—p. 522.
*Lethargic Encephalitis: Clinical Observations on Thirty Cases. A. J. Hall.—p. 526.
Hysterical Nature of So-Called Pernicious Vomiting of Pregnancy. A. F. Hurst.—p. 528.
Severe Uterine Hemorrhage After Vaginal Operations. J. Phillips.—p. 530.
Case of Sever Fracture of Femur Due to Bull's Horn. H. A. Lediard.—p. 530.
Extroversion of Bladder Treated by Vesicocolostomy. J. A. C. Macewen.—p. 531.
*Case of Sarcoma of Mandible in an Infant. S. P. Mummery.—p. 531.

Treatment of Deformities Caused by Rheumatoid Arthritis.—Todd's experience shows that a great deal can be done for a large number of those who suffer from rheumatoid arthritis. To eradicate the cause of the complaint is always difficult and often impossible, but there are hundreds of patients whose deformities can perfectly well be cured, and the main object of this paper is to point out this fact, and to show how the various deformities can best be remedied.

Treatment of Psychoses.—If we are to understand mental illnesses Rows states we shall have to consider not psychology alone, nor psychology combined with a knowledge of the nervous system. A study of the physiology of the human organism must be included, and also whatever of the allied sciences of biology and anthropology can assist in throwing light on the origin and characters of the psychoses and the psychoneuroses.

Prognosis of Lethargic Encephalitis.—Hall asserts that a steadily progressive stupor with rising temperature and loss of sphincter control is ominous, though not necessarily fatal, but by the time that stage is reached the gravity of the case is obvious. In the early stages uncertainty as to the futures of most cases is one of their most characteristic features. Even during the progress of the case it is often impossible to form an opinion as to the prospect of recovery. Comparing it with other acute specific infections it is apparent that signs on which one can usually rely in them for prognosis are often not forthcoming in cases of encephalitis. Patients with comparatively mild attacks recover only to be seriously damaged for very long periods, even permanently. Others who have appeared in the early stages to be near death recover quickly and completely, while still others whose illness has seemed moderately severe for one or two weeks suddenly become worse and die without any obvious reason why they should.

Sarcoma of Jaw in Infant.—Mummery's patient was only 9 months old. The tumor in its early stages closely resembled a dentigerous cyst. It apparently sprang from the left mandible, occupying the left side of the mouth nearly to the middle line. Roentgenograms showed the second temporary molar embedded in the outer wall of the cyst, and the germ of the unerupted first permanent molar lying beneath it. A provisional diagnosis of dentigerous cyst was made. An operation for its removal was performed. The pathologic report was "small round cell sarcoma." Treatment by radium was undertaken, and was so far successful that the swelling disappeared entirely in a fortnight. The patient was seen again three months after the operation when the swelling had reappeared and was of the same size and appearance as formerly. A second operation was performed and radium was again used. The swelling subsided again, but reappeared in about two months. The patient died, aged 20 months, from asphyxiation caused by pressure of the growth on the fauces.

Medical Journal of Australia, Sydney

Feb. 4, 1922, **1**, No. 5

Operations for Carcinoma of Rectum. H. B. Devine.—p. 115.
Clinical Aspect of Initial Lesion of Syphilis in Male. N. M. Gibson and C. J. Wiley.—p. 123.
*"X" Disease. G. H. Burnell.—p. 126.
Keratodermia Blenorrhagica. G. Lindeman.—p. 126.
Parasitic Conjunctivitis (Phthirius Pubis). R. G. Waddy.—p. 127.

"X" Disease.—Burnell records a case of "X" disease in which symptoms similar to those described as following lethargic encephalitis occurred. The patient, aged 7, was treated with the serum of a patient convalescent from "X" disease, the dose injected subcutaneously being 30 c.c. Her condition gradually improved. One year later Burnell saw her again and was struck with the resemblance she presented to a patient suffering from paralysis agitans in an advanced state. There was a well marked, slow, rhythmical tremor of both arms. The speech was even more hesitating than before, and, although the face was not without expression, there was a good deal of dribbling of saliva. There was no marked loss of power. Burnell believes that this case furnishes some clinical evidence that acute poliomyelitis and "X" disease are separate entities. On the other hand, the symptom complex of lethargic encephalitis differs somewhat widely from that of "X" disease, so that it would appear likely that these are three separate, although allied diseases.

Feb. 11, 1922, **1**, No. 6

Some Directions in Which Advances in Preventive Medicine Could Be Made in Queensland. W. A. Sawyer.—p. 141.
Course and Treatment of Carcinoma Uteri. A. N. McArthur.—p. 145.
*Intermediate Paralysis of Respiratory Center. F. J. T. Sawkins.—p. 152.
*Sudden Fatal Case of Melena Neonatorum. J. N. Brown.—p. 153.

Feb. 18, 1922, **1**, No. 7

South Australian Laboratory of Pathology and Bacteriology. J. B. Cleland.—p. 171.
Wassermann Test. L. B. Bull.—p. 172.
Vaccines. H. M. Mayo.—p. 173.
Deaths From Pulmonary Embolism. J. B. Cleland and D. L. Barlow.—p. 175.
Rickets in Foxhound Puppies. L. B. Bull.—p. 176.
Limping. W. Potter.—p. 177.
Caseated Thymoma of Mediastinum. J. B. Cleland and F. H. Beare.—p. 182.
Case of Lymphatic Leukemia. J. B. Cleland and F. H. Beare.—p. 182.
Case of Accidental Hemorrhage. P. L. Hipsley.—p. 184.
Blood Transfusion. A. H. A. Court.—p. 184.

Intermediate Paralysis of Respiratory Center.—The outstanding clinical features in the cases seen by Sawkins were sudden failure of respiration, while the heart continued to beat regularly for considerable periods, if artificial respiration were maintained. One patient recovered sufficiently to be discharged from hospital and was lost sight of. One other recovered temporarily but died in a subsequent attack.

Fatal Case of Melena Neonatorum.—In the case cited by Brown the hemorrhage occurred within two hours after birth. The hemorrhage, the initial and only one, ended fatally.

South African Medical Record, Cape Town

Feb. 11, 1922, **20**, No. 3

Clinical and Serologic Aspects of Syphilis in Obstetric Practice. E. C. Crichton and T. J. Mackie.—p. 42.
Accessory Sinus Inflammation. W. L. Pink.—p. 45.
Vaccines in Rheumatism. J. Pratt-Johnson.—p. 49.
Origin and Development of Johannesburg Hospital and Branches. R. Daly.—p. 50.

Tubercle, London

March, 1922, **3**, No. 6

Hemoptysis and Its Treatment. II. Action of Drugs and Physical Measures. C. Riviere.—p. 241.
*Effects of Tuberculin. P. M. Holst.—p. 249.
*Conjugal Tuberculosis. S. Tillisch.—p. 256.

Effects of Tuberculin.—Investigations concerning the effects of tuberculin in the healthy organism which were made by Holst showed that the reaction which takes place in vitro by the binding of tuberculin in living tissue to a certain extent may take place also in vivo, and that the binding here is mainly effected by the bones. The circumstance that tuberculin cannot be recovered quantitatively in the organism after injection possibly means that the tuberculin now forms a new combination which cannot be detected by present methods. This may also explain why it has not been possible to find tuberculin in the tuberculous organism. Holst also has tried to isolate tuberculin from the bones of tuberculous animals and men. From lack of material he has not, however, been able to complete these experiments. He says that not until certain knowledge regarding the fact of tuberculin in the organism is obtained will it be possible to determine whether it is a true product of the tubercle bacillus, or an artefact formed by the decomposition of the real toxin.

Conjugal Tuberculosis.—Among 1,152 married patients who were made the subjects of a study by Tillisch as to the incidence of tuberculous in both husband and wife, eighty-five, i. e., 7.4 per cent., of their consorts were also tuberculous. Thirteen of these eighty-five persons had been exposed to infection while they were children. Thus, there remain seventy-two cases in which tuberculosis can, in all probability, be assumed to have been conveyed from one consort to the other; therefore, marriage with a consumptive does carry with it a certain risk for the healthy consort.

Annales de Médecine, Paris

December, 1921, **10**, No. 6

Dystrophia of Glands. IV. V. Hutinel and M. Maillet.—p. 421.
*Protein Metabolism and Uremia. R. Marquézy and P. Zizine.—p. 446.
*Thrombosis of the Aorta. C. Aubertin.—p. 454.
*The Arsphenamin Shock. E. Jeanselme and M. Pomaret.—p. 467.
*Recent Neurologic Literature. J. Lhermitte.—p. 489.

The Nonprotein Nitrogen and Uremia.—In three cases of chronic nephritis described, with necropsy, the manifestations of uremia seemed to parallel the proportion of nonprotein nitrogen in the blood. The residual nitrogen is an index of grave disturbance in nitrogen metabolism, but does not suffice for the prognosis as the nonprotein nitrogen content may drop to normal any day. The urea in the blood, on the other hand, is a gage of the functional capacity of the kidneys, and thus throws light on the prognosis in the majority of cases.

Thrombosis of the Aorta.—Aubertin adds 2 new cases to the 32 he has found on record. In 18 of the cases there was symmetrical gangrene of both legs. This is the essential symptom of thrombosis of the aorta. The abdominal aorta was the seat of the thrombosis in all but one case. In this the thrombosis was in the arch of the aorta, but the gangrene of both legs was as pronounced as in the abdominal aorta cases. In some of the cases the thrombosis was a necropsy surprise. Pain is the rule with thrombosis of the aorta; it is not in the aorta itself, but in the feet and the calves. The gangrene may be limited in extent or may include the entire lower extremities. In one of his 2 cases it extended to the abdomen, and in Keilty's case to the diaphragm. In 4 cases there was intermittent claudication and, in 7 cases, paraplegia. Senile gangrene is not symmetrical, or there is an interval between the involvement of the two limbs. The only difficulty in differentiation is when the symmetrical gangrene is not recognized in one limb, attention being focused on the more pronounced lesion. Immediate massage, crushing and scattering the obstructing thrombus, may restrict the gangrene to one limb or ward, if off altogether. In 2 cases an attempt was made to remove the embolus. It succeeded in one case, and in the other the circulation was restored, although the patient died four days later.

Arsphenamin Shock Phenomena.—From analysis of the literature and their own conclusive experiments on dogs, and clinical experiences, Jeanselme and Pomaret accept as a settled fact that the phenol bodies in the arsphenamin series are responsible for the shock phenomena. The phenol precipitates albumin and thus induces flocculation in the blood. This upset in the colloid balance in the blood is manifested by physiologic phenomena of the same order as the shock induced by peptone, etc., which is a true anaphylaxis. Flocculation cannot occur unless conditions favor it; the amount of precipitation in vitro of the albumins by an acid solution of neo-arsphenamin is an index of the disturbance and shock that may follow its injection into a vein. If the injection is made very slowly; if the drug is much diluted—even although the acidity tends to upset the colloid balance—yet the injection may proceed without appreciable reaction, the colloidal balance being immediately restored by the dissolving of the flakelets. In the clinic and in animals, the reaction depends on the relative acidity of the solution of the drug and the speed with which it is injected. This reaction can run the whole scale from traces of flocculation to actual coagulation. The aggregations of flakelets induce sudden shock, analogous to shock from any insoluble body getting into the blood stream. The blood of persons who have had nitritoid crises on injection of arsphenamins has always been found exceptionally acid. With a highly alkaline blood, the arsphenamin shock need not be feared; up to 0.6 gm. of arsphenamin or 0.9 gm. of neo-arsphenamin can be injected with impunity. If flakelets form, they dissolve again at once, but hypoalkaline blood exposes to arsphenamin shock.

Recent Neurologic Literature.—Lhermitte calls attention in particular to Christiansen's work on brain tumors; Hall's on lenticular degeneration, and Thomas' on the pilomotor reflex. Works by these authors along the same lines have been summarized in THE JOURNAL in the last few months. Lhermitte emphasizes the importance of the pilomotor reflex as the simplest and most reliable means at our command for investigating the condition of the sympathetic nervous system. When either mechanical, caloric, tactile or electric stimuli have exhausted their effect, the reaction can be elicited with pristine force by changing to one of the other forms of stimuli. Great progress has been realized in the estimation and interpretation of the pilomotor reflex by the data learned from the war wounded. As the innervation responsible for this reflex is derived exclusively from the sympathetic, the reflex response is often directly contrary to the tendon and skin reflexes. It is essentially a brain reflex connected with emotive states, and thus may have a psychologic aspect.

Archives des Maladies du Cœur, etc., Paris

January, 1922, **15**, No. 1

Special Form of Paroxysmal Tachycardia. L. Gallavardin.—p. 1.
*Myocarditis with Paroxysmal Tachycardia. E. Lenoble.—p. 15.
*Hutinel's Cardio-Tuberculous Cirrhosis. E. Lenoble.—p. 20.

Tuberculous Myocarditis.—In both of Lenoble's two cases the inoculation of guinea-pigs directly from the myocardium gave positive results. In the first case there was paroxysmal tachycardia; in the second, the myocarditis was of the type of Hutinel's *cirrhose cardio-tuberculeuse*.

Archives Médicales Belges, Liége

November, 1921, **74**, No. 11

*Vaccine Therapy in Exanthematous Typhus. E. Savini.—p. 1009.
*Neurasthenia as an Endocrine Syndrome. N. Goormaghtigh.—p. 1040.

Vaccine Therapy in Typhus.—Savini describes 970 cases of typhus given vaccine therapy at the Roumanian Red Cross hospital during the war. Eliminating the seventy moribund patients, the mortality was 15.4 per cent.

Neurasthenia as an Endocrine Syndrome.—Goormaghtigh cites the various efforts made by clinicians to explain neurasthenia, and asks in what measure has the treatment of neurasthenia been benefited by these many studies. The knowledge of the rôle of internal secretions demonstrates the necessity of eliminating factors that upset the endocrine equilibrium. Toxemia must be suppressed. To convince a patient that the organism is capable of recuperation is useful as also massage, exercise and hydrotherapy. In most cases, however, the functional deficit of the internal secretions requires organotherapy, and some remarkable cures have been recorded under this as he describes.

Bulletin de l'Académie de Médecine, Paris

Feb. 21, 1922, **87**, No. 8

*Roentgen Treatment of Erythremia. Béclère.—p. 227.
Spasmodic Aerophagia and Its Treatment. L. Livet.—p. 231.
Clinical Chronaximetry. H. Guilleminot.—p. 234.
*Permeability of Liver in Diabetes. J. Haticgan.—p. 236.

Roentgenotherapy in Erythremia.—Béclère relates that Lüdin was the first to report (1916) the permanent cure of a case of erythremia under roentgen exposures of the skeleton, the long bones, pelvis, spine, scapulae, sternum and ribs, but not the spleen. In seven weeks the erythrocytes dropped from 8,000,000 to 4,800,000 and all the symptoms subsided. This success was repeated in two other cases, and others have reported at least transient benefit. Béclère reports two new cases, in men of 39 and 49. Only the humerus and femur on each side had been exposed, but the erythrocytes dropped to normal range, the symptoms disappeared, and the patients consider themselves cured. Of course it is a question whether the cure will be durable. The interval since has not been up to five years in any instance.

Excessive Permeability of the Liver.—Hatiegan was surprised to find that in six cases of diabetes with emaciation, 0.24 gm. of indigo carmin stained the duodenal juice as brilliant a blue as the original solution injected. Even the foam was a bright blue, and the stain was pronounced even with only 0.04 gm. of the dye, while in the normal there is no trace of the dye in the duodenal juice with even 0.08 gm. The liver is evidently excessively permeable in diabetes of the wasting type. In ordinary diabetes the stain behaves as in the normal.

Bulletin Médical, Paris

Feb. 4, 1922, **36**, No. 6

Derangement of Nitrogen Metabolism in Pulmonary Tuberculosis. M. P. Weil.—p. 93.
Esophagoscopy: Technic and Application. L. Dufourmentel.—p. 95.

Feb. 18, 1922, **36**, No. 8

*Aortic Diastolic Murmur After Forty. L. A. Amblard.—p. 137.
*Plastic Linitis. V. Pauchet.—p. 139.

The Aortic Diastolic Murmur in the Forties.—Amblard had the rare experience of examining thousands of men with disordered action of the heart as consultant during the war, and he also served in the hospitals under Huchard in the heart disease department. The experience thus acquired, in addition to his own practice, has convinced him that a diastolic murmur in the aorta between the ages of 40 and 50 is scarcely ever found except in the syphilitic. He declares that the state of the aorta is what determines the age. Even if the Wassermann test is negative, and nothing can be found in the subject or his children or wife, or the previous history, yet Amblard advises neo-arsphenamin and potassium iodid treatment in the hope that a syphilitic element may be modified by specific treatment. This murmur is so constantly a sign of syphilis, when there is no recent infectious disease to explain it, that it may be regarded as an urgent call for specific treatment to ward off general paresis, tabes, etc.

Plastic Linitis.—Pauchet remarks that even roentgenography is unable to distinguish between benign linitis, sclerosis, cancer and diffuse syphilitic disease of the stomach. Gastrectomy is indicated in all unless improvement follows specific treatment, but the benign linitis cases offer the most favorable prognosis as there is no hyperchlorhydria to contend with.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 27, 1922, **46**, No. 3

Bismuth Stomatitis. Milian and Périn.—p. 135.
*Obesity with Hydrocephalus. Babonneix and Denoyelle.—p. 150.
*Megaduodenum. G. Variot and Cailliau.—p. 158.
*The Chronic Malaria Question. J. Rieux.—p. 162.
Aneurysm in Wall of Heart. A. Sézary and J. Alibert.—p. 172.
*Myoclonus-Epilepsy. J. Abadie and M. de Teyssieu.—p. 179.
*Latent Suprarenal Insufficiency. Oudard.—p. 184.
*Serotherapy of Scarlet Fever. Mironesco and Sager.—p. 188.
Pituitary Treatment of Diabetes Insipidus. Urechia and Dersca.—p. 191.
Cerebellar Abscess Simulating Schizophrenia. C. I. Urechia.—p. 195.

Obesity with Hydrocephalus.—Study of the literature and of a case illustrated, in a middle aged man, has convinced Babonneix and Denoyelle that the pituitary is not responsible for obesity accompanying essential hydrocephalus. The causal lesion is in the walls of the third ventricle. They present arguments to refute Cushing's pituitary theory.

Congenital Megaduodenum.—Necropsy explained the recurring uncontrollable vomiting of bile in the young infant. The congenital megaduodenum was accompanied with stenosis of the lower portion.

Chronic Malaria.—Rieux insists that the diagnosis of chronic malaria is often made heedlessly. Because a person has had malaria at some time, all morbid manifestations afterward are apt to be credited to the malaria as long as he lives. In examining 150 soldiers who had contracted malaria in the Near East, and were labeled "chronic malaria," he found anemia and splenomegaly in 20 per cent. but no signs of malaria. In 60 per cent. there were no signs of malaria but gastro-intestinal disturbances or cholecystitis had incapacitated the men. Chronic bronchitis, sclerosis of the lungs and nervous symptoms were evident in others.

Myoclonus Epilepsy.—The young man's muscular jerking is almost continuous. The myoclonus began at the age of 6, and at 15 was so severe that he was confined to the bed most of the time. The infrequent epileptic seizures began eleven years after the progressive myoclonus, but the physical and mental development seems otherwise normal. There were no familial features in this or in Crouzon's recent case, and no pathologic antecedents. No sedatives had the slightest action on the intense myoclonus except phenobarbital. Under large doses, 0.3 gm. a day, the myoclonic phenomena subsided enough to allow the young man to be up and about. At first, under only 0.1 gm., the jerking disappeared entirely for a month, but the effect is less pronounced now, even under the larger doses.

Latent Suprarenal Insufficiency.—Oudard's patient was a man of 42 who was operated on five months after an accident as the fractured bones did not heal. Symptoms of suprarenal insufficiency had followed the accident, but later subsided. The shock of the operation entailed acute and fatal suprarenal insufficiency, and both suprarenals were found totally destroyed by tuberculous processes.

Convalescents' Serum in Treatment of Scarlet Fever.—The serotherapy was applied in twenty-one of the graver cases of scarlet fever at Bucharest, and the results are said to have been favorable. It did not prevent the development of nephritis in one case.

Feb. 10, 1922, **46**, No. 5

Gangrenous Cholecystitis. P. Lereboullet.—p. 257.
Spontaneous Emphysema in the Tuberculous. Pissavy et al.—p. 259.
*Findings in Other Lung with Pneumothorax. A. Gendron.—p. 261.
*Therapeutic Action of Calcium Chlorid. Pellé.—p. 264.
Case of Diabetic Gangrene. A. Chauffard et al.—p. 270.
*Venous Pulse in Varicose Veins. Lechelle and Mouquin.—p. 273.
*Artificial Pneumothorax in Children. Babonneix and Denoyelle.—p. 275.
*Paget's Disease and Tabes. H. Claude and P. Oury.—p. 283. Idem. G. Guillain.—p. 291.

Physical Findings with Artificial Pneumothorax.—Gendron discusses the misleading auscultation findings in the sound lung when the other lung is compressed. He ascribes them to a propagation of the sounds from the diseased lung, and the course of a case described confirmed this assumption.

Calcium Chlorid in Treatment of Diarrhea, Vomiting and Hemoptysis.—Pellé injected intravenously a solution of calcium chlorid in 24 cases of persisting diarrhea in the tuberculous; in 12 cases of dysenteriform diarrhea; in 30 cases of vomiting in tuberculosis; in one case of the uncontrollable vomiting of pregnancy, and in 2 cases of tuberculous hemoptysis. The drug by this route induces a hemoclastic shock; in five minutes the number of leukocytes had dropped by 400 to 2,200 from the preceding figure. This hemoclastic shock arrested the diarrhea, the vomiting and the hemoptysis in nearly every case. The only rebellious cases were in 3 tuberculous subjects with persisting vomiting. At first he injected 5 c.c. of a 5 per cent. solution, but for the last year has followed the Rist-Ameuille method of injecting from 2 to 4 c.c. of a 50 per cent. solution. There is always a reaction to this strong solution, but it lasts only a minute, a sensation as if hot water were being poured over the body. No local or general toxic action was ever noted otherwise.

Venous Pulse with Heart Disease.—In Lechelle's case the postsystolic pulse in the saphenous veins accompanied varicose veins and mitral stenosis, with complete arrhythmia, in the woman of 79.

Artificial Pneumothorax in Children.—Babonneix relates that one lung alone was affected in only 4 per cent. of the 280 tuberculous children at the sanatorium, and in 5 of the 12 in this group pleural adhesions prevented the proposed artificial pneumothorax. The findings and course in the 7 other cases are reported in detail, with the roentgenograms. In 3 of the 7 cases, a focus soon developed in the other lung, evidently from infectious material squeezed out of the compressed lung. These foci retrogressed and soon healed, but they teach the necessity for applying the compression only slowly and gradually, to avoid forcing the contents of the cavity into a bronchus. In another case there was great improvement but bacilli are still found in the sputum. In the 3 other children the outcome was excellent and this seems to be durable. The wall of the thorax on that side sank in and scoliosis developed in every case, and these deformities have grown more and more pronounced.

Paget's Disease of the Bones Plus Tabes.—The woman of 57 was being examined for a fleeting acute infection when signs of both Paget's disease of bones and signs of tabes were discovered. Claude cited some other cases which suggest a connection with syphilis in certain cases, and, in the discussion that followed, Lereboullet reported an instance of Paget's disease of the bones developing simultaneously in a man and his wife. The woman had been treated for syphilis, dating from ten years before her marriage to this second husband who has never shown any signs of syphilis unless the Paget osteitis is accepted as such. Milian stated that six patients with the Paget osteitis had been benefited by specific treatment as for syphilis. Achard recalled that the lesions of Paget's disease of the bones are more of the type of those of inherited rather than acquired syphilis. Chauffard knows a family in which both mother and daughter present typical Paget osteitis. Achard argued that the spirochete of syphilis does not act directly on the skeleton but modifies indirectly the production of bone.

Journal de Chirurgie, Paris

February, 1922, **19**, No. 2

*Treatment of Complex Bilateral Harelip. V. Veau and J. Lascombe.—p. 113.
*Technic for Gastro-Enterostomy. Goullioud.—p. 137.

Treatment of Complex Bilateral Harelip.—Veau and Lascombe do not attempt the whole operation at one time. By this means the first intervention can be done at an earlier age, even as early as the fourth week, following with the second operation in three or four months. They have thus treated three recent cases at the age of 1 to 3 months, and have been surprised at the ease with which the operation could be done, and the smooth healing. The ultimate outcome is shown three or five years later in some of their cases, and the various steps of the operation are described in nineteen illustrations.

Gastro-Enterostomy with Straight Jejunal Loop.—Goullioud protests against turning the loop of jejunum, as many do, in fastening it to the stomach.

Journal d'Urologie, Paris

January, 1922, **13**, No. 1

*Extension of Pyelotomy. G. Marion.—p. 1.
Five-Glass Catheter Examination of Urine. A. L. Wolbarst (New York).—p. 9.
*Radium Treatment of Cancer of Prostate. C. Perrier and Andreae.—p. 15.
*Hypoplasia of Bladder. A. Cosacesco.—p. 21.
Bilateral Ureter-Vagina Fistula. L. Martin.—p. 25.

Enlarged Pyelotomy.—Marion's illustrations demonstrate the ease with which even very large calculi can be extracted through an incision in the pelvis. When the shape and direction of the calculus are known, the incision in the pelvis can be carried up on the kidney in the exact direction required for the easiest extraction of the calculus. The tracing for the incision thus differs in each ease. In one of his illustrations, the calculus was 7 cm. long and 5 cm. wide, with three branching arms, making the whole diameter over 7 cm. In another case the calculus was 8 cm. long, shaped like a leg of mutton; the incision here was almost a fishhook shape.

Radium Treatment of Cancer of the Prostate.—The cancer was inoperable when first seen, but it subsided under two courses of radium emanations, a total of 20.5 and 78 millicuries in three months. Three months later the prostate was removed. The photomicrograms disclose a very few cancer cells still perceptible in the prostate, but there is a possibility that, although not destroyed, their vitality may yet have been impaired by the radium.

Hypoplasia of the Bladder.—The bladder in the boy of 10 had never retained urine; the urine had always dripped, day and night, a drop at a time. There was also an arrest of development in the lower portion of the spinal cord, with lacking sacrum and coccyx. Cosacesco was successful to a certain degree in developing volitional control of the bladder. This was accomplished by systematic distention of the bladder, injecting fluid until it hurt. By this simple means a receptacle for the urine was formed, and the urine can be retained for half an hour at a time.

Lyon Médical

Jan. 10, 1922, **131**, No. 1

Diabetes in Children. G. Mouriquand.—p. 3.
Present Status of Cancer Research. F. Duplant.—p. 36.

Feb. 25, 1922, **131**, No. 4

*Chronic Abscess of Lung. Piéry and L. Barbier.—p. 139.

Chronic Abscess of the Lung.—The man of 40 presented symptoms which suggested interlobar purulent pleurisy, tuberculosis or abscess of the lung. Then came a five months latent period after the acute phase, and then a return of the acute symptoms, and artificial pneumothorax was induced. This was soon followed by purulent pleurisy, and necropsy revealed the chronic abscess in the lung. The pneumothorax had better not be attempted in such a case unless there are indications that the eavity is draining into a bronchus. The lower the abscess, the better the chances for this. The pressure from the gas should be very slight at first. It is wise also to ascertain that the abscess is separated from the visceral pleura by an ample zone of parenchyma.

Paris Médical

Feb. 18, 1922, **12**, No. 7

*Crossed Sex Tumors. Menetrier, Peyron and Isch-Wall.—p. 133.
*Retrogression of Cancers Under Radiotherapy. Lacassagne.—p. 143.
*Cancers on Birds. A. Peyron.—p. 146.
Diagnostic Excision of Scrap of Cancer. H. Rubens-Duval.—p. 151.

Feb. 25, 1922, **12**, No. 8

Reconstruction of Orbit. F. Terrien.—p. 157.
Importance of Examination of Former Site of Chancre in Syphilitics. G. Milian.—p. 159.
Properties of Phenylethylhydantoin. Gelma and Schwartz.—p. 162.
Epileptiform Seizure as First Symptom of Pleurisy. C. Laubry and S. Bloch.—p. 166.

Tumors of Female Type in Men and of Male Type in Women.—In discussing this special chapter of the histogenesis of tumors, Menetrier remarks that recent progress in comparative embryology has thrown considerable light on the embryologic potential of the different parts of the ovum. On the other hand, study of tumors has thrown much light on embryology, as he explains in detail.

Retrogression of Cancers Under Radiotherapy.—Lacassagne concludes from his analysis that the wide variations in susceptibility of different cancers to the roentgen and radium rays, and the variety of different histologic mechanisms which determine their retrogression, seem to indicate that each variety of cancer requires a special technic for radiotherapy. Our knowledge in this line is still very rudimentary.

Experimental Cancer Research.—Peyron of the Paris Institut Pasteur comments on some facts recently learned in regard to the so-called infectious tumors on birds. They are actual sarcomas and can be grafted indefinitely. A remarkable feature is that the filtrate alone—without any cells—will transmit the neoplasm. Even the blood of a bird with metastasis of such a tumor will transmit the malignant disease. The influence of trauma is remarkably evident in the location and development of these sarcomas on birds. He urges to focus research on the infectious origin of sarcomas. The bird sarcoma cells and virus can be successfully transplanted even after thorough exposure to radium.

Presse Médicale, Paris

Feb. 18, 1922, **30**, No. 14

*Importance of the Glycogen in the Liver. H. Roger.—p. 145.
Differential Diagnosis of Pelade and Tineas. R. Sabouraud.—p. 146.
Cerium Salts in Laryngeal Tuberculosis. G. Portmann.—p. 148.
Nature of Erythema Nodosum. P. Pagniez.—p. 149.

The Rôle of the Glycogen in the Liver.—Roger calls attention to recent research by himself and others which has demonstrated that the glycogen formed by the liver is not only a reserve, from which the organism borrows, but it enters directly into most of the chemical transformations accomplished by the liver. Glycogen is thus an indispensable element in the liver processes dealing with ketone products, fats, the derivatives of protein, toxic substances, and even micro-organisms. Glycogen is far more than a mere testimony to the activity of the liver; it is an important factor in liver activity, as he explains in detail. Biologic chemistry thus has definitely confirmed what empiric observation had long determined in regard to the protection of the organism by glycogen, and the importance of an ample supply of the foods from which the liver makes its glycogen. Sugar is indispensable in infections and intoxications, and in all conditions tending to induce acetonemia and acidosis. The favorable action of subcutaneous or intravenous injections of a solution of glucose is due in large measure to the reenforcing by it of the functions of the liver. Chevrier asserts that by taking 150 gm. of sugar the evening before and again the morning of the operation, anesthetics are less liable to induce liver disturbances. He follows the operation with a sugar solution by rectal drip. Among the numerous experiments described by Roger are some in which 0.125 c.mm. of an anthrax culture, injected into a peripheral vein, killed the rabbit in thirty-eight hours, while a dose, sixty-four times larger, injected into a branch of the portal vein, failed to induce the slightest symptoms, testifying to the complete annihilation of the anthrax bacilli by the liver.

Feb. 22, 1922, **30**, No. 15

*Paralysis of External Branch of Spinal Nerve. L. Bard.—p. 157.
Anomalies in Fifth Lumbar Vertebra. A. Léri.—p. 158.

Paralysis of Spinal Nerve.—Bard reports a case of compression of the spinal nerve from aneurysm of the internal carotid. It demonstrated the influence of this nerve on the sternocleidomastoid muscle and on the function of twisting the neck.

Feb. 25, 1922, **30**, No. 16

*Pseudo-Cavities in Lungs. P. F. Armand-Delille et al.—p. 165.
*Indications for Myomectomy. Goullioud.—p. 168.
Technic for Transfusion of Blood. L. Cheinisse.—p. 171.

False Cavity in Lung.—The displacement of the trachea, from traction by the shriveling of a chronic fibrous tuberculous process in the lung, is liable to induce physical findings suggesting the existence of a cavity. The roentgenograms from ten cases of the kind cleared up the misleading findings. The esophagus, heart and aorta may be dragged out of place at the same time. The patients have generally passed the age of 40 and, notwithstanding their old chronic tuberculosis, are yet in fairly good condition. There is some retraction of half of the chest; some scoliosis; displacement of the apex beat and heart dulness, and sometimes there is dysphagia, or suprasternal depression on inspiration, or an intercostal depression. Palpation with the forefinger of the fossa above the sternum is instructive when the head is bent.

Pregnancies After Myomectomy.—Goullioud relates that 20 per cent. of 26 married women treated by abdominal myomectomy have borne children since. In a total of 99 cases he has compiled in which pregnancies have followed the myomectomy, delivery was normal in 100 of the 125 conceptions; in 20 instances there was abortion, and premature delivery in 5. The uterus ruptured in 3 cases, and this is the only complication inherent to the conditions after myomectomy. It calls for special care in suturing. In his own total of 104 myomectomy cases, 34 of the women were single and 14 of the others were over 40. There have been 11 pregnancies, with 12 viable children, 2 stillborn, and 2 miscarriages. In one case, during the ten years following the enucleation of several small myomas at the age of 25, the woman gave birth to two healthy children, and then a large fibroma required hysterectomy. The child had club-feet and soon died in one case in which a large fibroma with two smaller ones had been enucleated at the age of 30. As this is the only instance of fetal deformity, Goullioud does not believe that the myomectomy was necessarily responsible for it.

March 1, 1922, **30**, No. 17

*No Preformed Center for Speech. P. Marie.—p. 177.
Stenosis of the Pylorus in Infants. B. Weill-Hallé and R. Weissman-Netter.—p. 181.

March 8, 1922, **30**, No. 19

Tropical Medicine. G. Delamare.—p. 201.
Diphtheric Paralysis of Soft Palate. V. de Lavergne.—p. 202.

Speech Center in the Brain.—Marie denies that there can be in the human brain an inborn or preformed center for spoken or written speech, as there are centers for motor functioning. The psychic processes, he theorizes, are generated by a kind of vibration of the nerve elements, and these vibrations are propagated by a series of elaborating reactions to a large number of cells, which are thus roused to action by the initial volitional or reflex excitation. Among the arguments he cites against the assumption of a preformed center for speech is the evolution through the centuries of written language, through the hieroglyphs of Egypt to the ideographs, then to the syllabic phonetic writing derived from them. The flux and reflux of generations finally detached the letters from the syllables. Man did not invent written language; it was the slow erosion of time that finally accomplished it, and even as late as the Middle Ages, only the priests and the monks mastered it and taught it to their disciples. There was no hereditary transmission of it. The war experiences with thousands of men wounded in the head failed to reveal any instance of aphasia from a wound localized in the region of the third frontal convolution. It was the wounds of the left temporoparietal region, back of the fissure of Rolando, which were accompanied with aphasia.

Marie says further that the brain that served Broca for his first demonstration of "Broca's aphasia" is still to be seen in the museum. The softening process was old and extensive, but Broca was misled by Gall's phrenology to localize the seat of the aphasia in the frontal lobe, as apparently the point where the pathologic process had begun, disregarding all other parts of the brain. Marie adds that if there were an actual speech center in the brain, deafmutes would use some kind of speech, but we know that the sounds they make are less like speech than the sounds made by dogs. The deafmute has to be trained entirely from without. The infant shows also the total lack of any congenital speech center. Aphasia has never been known in a case of right hemiplegia that had developed in a young child. There is no speech center to be destroyed by the lesion causing the hemiplegia, and hence there is no aphasia. In learning to talk, the child used other parts of its brain. The nerve elements of the left hemisphere develop a little earlier than the right hemisphere, and the first mental processes thus begin here and form, as it were, a crystallization center and a base for the associations of ideas. Thus the brain uses this left hemisphere for an important part of its psychic activity, and specializes certain parts of it here, although there is no one special "center" for any of the psychic processes. The different cells of the brain join in an infinity of different psychic processes just as mathematicians use only ten figures for the most complicated calculations.

Revue de Chirurgie, Paris

1921, **59**, No. 11

*Cancer of Urethra in Women. A. Venot and A. Parcelier.—p. 565.
*Operative Treatment of Stiff Elbow. G. Pascalis.—p. 624.

Cancer of Female Urethra.—This long article is based on 87 cases from the literature and one case personally observed. This material warns of the danger of malignant degeneration of a polyp in the urethra treated by any half-way measures. Cauterization, and leaving the root of the polyp in resection, have often been followed by cancerous degeneration. The only safe way is to resect the meatus bearing the polyp, cutting out 1 cm. of the urethra, and reimplanting the urethra in the vestibule. There was recurrence in 33 per cent. of 28 cases treated by partial resection of the urethra, but only in 16½ per cent. of 30 cases of total resection. The results of radium treatment were encouraging in the 4 cases in which it was applied. In Legueu and Chéron's case, the extensive neoplasm in the urethra of the woman of 26 subsided completely under radium treatment.

Cure of Stiff Elbow from Muscular Contracture.—Pascalis' illustrations show the tendon plastic operation with which he lengthened the retracted biceps and restored function to the elbow in two otherwise rebellious cases.

Revue Franç. de Gynécologie et d'Obstét., Paris

January, 1922, **17**, No. 1

*Local Treatment of Puerperal Infection. J. Andérodias.—p. 1.
Immediate Secondary Perineorrhaphy. P. Balard.—p. 12.

Infection of the Uterus.—Andérodias has been applying the Carrel-Dakin method in treatment of puerperal infection of the uterus after childbirth or abortion. Every two hours during the day, and three hours at night, the stopcock is turned to allow 40 or 50 c.c. of the fluid to enter the uterus. An ordinary round urethral sound proved more durable than the Carrel drains, and it answered every purpose in the 152 cases thus treated. The irrigation was kept up from two to six days in all but 16 who required it a day or two longer. If the symptoms persist unmodified for a week, in spite of this treatment, it is useless to prolong it. Omitting 3 cases in which the fever was maintained by pleural or renal disease, the treatment was successful in all but 8.5 per cent.

Revue de Médecine, Paris

January, 1922, **39**, No. 1

*The Sibson's Notch Question. G. Blechmann.—p. 5.
*Edema and Engorgement of Lymphatics. L. Alquier.—p. 19.
*Cerebellar and Vestibular Syndromes. J. Lévy-Valensi.—p. 36. Conc'n.
Recent Literature on Diphtheria. H. Godlewski.—p. 52.

Diagnosis of Effusion in the Pericardium.—In discussing the diagnosis of acute pericardial effusion, Blechmann presents arguments to prove that the *encoche de Sibson,* not only is nonexistent, but that it obtained its place in medical literature by a blunder in translation. The English writer said, "When the heart is adherent and enlarged, it encroaches on the left lung." Blechmann thinks that this word "encroaches" was responsible for the traditional "encoche" which has been linked with Sibson's name ever since, the blunder having been translated back into English as "Sibson's notch," and thus passed on from textbook to textbook.

Edema and Lymphatic Engorgement.—Alquier distinguishes two forms of edema. The edema from stagnation of the lymph above a region of engorgement of the lymphatics disappears as the obstruction to the circulation is removed. The skin is not red over it, and the edema is cold rather than warm. The other form is an active lymphatic reaction to irritation from an infection or intoxication. This edema develops in waves, with abrupt fluctuations which do not correspond to the conception of stasis, and any slight cause is liable to bring it on, but the skin is not red or hot, and there is no pain unless the vessels are extremely distended. The engorgement of the lymphatics is the relic of a lymphatic reaction. In the beginning there were the active waves. The engorgement once installed, the lymph above it may stagnate. These distinctions in regard to edema are proving of great practical utility, as the indications thus differ, according as the edema is active or passive. In the active form, the edema is only the corollary of some irritative lymphatic reaction, and treatment should aim to remove the infectious or toxic influence responsible for the irritation. In the stasis form, as long as the barrier of the engorgement persists, the edema will persist unmodified by any measures. Walter reported eight cases of stasis edema, elephantiasis of the leg, cured by introducing a tube to drain the stagnating lymph into the region below the engorgement, the buried tube thus bridging the barrier obstructing the circulation of lymph. The tube was left in place for a year. In three cases it was then removed, but the edema returned. It subsided anew when the tube was replaced.

The Cerebellar Syndrome and the Labyrinth Syndrome.—Lévy-Valensi analyzes the present status of our knowledge of disturbances for which pathologic conditions in the cerebellum or labyrinth are responsible. The functioning in both seems to be a reflex automatism, he remarks, but the vestibule does in a wholesale way what the cerebellum does in detail. The vestibule seems to be an *organe de luxe*.

Policlinico, Rome

Feb. 13, 1922, **29**, No. 7

*Primary Tuberculous Ulceration of Vulva. M. Gravagna.—p. 222.
*Foreign Body in Bladder. C. Silvan.—p. 224.
Preceding Disease with Industrial Trauma. L. Rossini.—p. 228.

Primary Tuberculosis of Vulva.—Gravagna's patient had been a prostitute for four years, and had taken several courses of treatment for syphilis and gonorrhea during this time. She had been previously healthy. An ulceration in the vulva proved to be of tuberculous nature, and it spread through the urethra to involve the bladder mucosa. There was no trace of tuberculosis elsewhere.

Foreign Body in Bladder.—The iron curling pin, 8.2 cm. long, had slipped into the bladder of the girl of 14, and the points had dug into the anterior bladder wall, as the pin came to lie across the bladder opening. Although operative relief was sought almost at once, and the foreign body was removed by a suprapubic incision in a few hours, yet a grave septic gangrenous phlegmon had already developed around almost the entire bladder. The bladder wall itself showed no signs of gangrene. Treatment with surgical solution of chlorinated soda, twice a day, arrested the phlegmonous process, and the girl was dismissed entirely cured the thirty-seventh day.

Riforma Medica, Naples

Jan. 23, 1922, **38**, No. 4

Fat Content of Blood in Tuberculosis. A. Muggia.—p. 73.
*Local Temperature over Femoral Vein. N. Samaja.—p. 76.
Serotherapy in Typhoid. C. Pezzi.—p. 80.
Radical Cure of Femoral Hernia. G. Marchetti.—p. 83.

Temperature of Limb with Occlusion of Femoral Vein.—The obstruction and edema were caused by a sarcoma in the thigh, and the high temperature in the leg had attracted attention from the first. It was long accepted as a sign of an inflammatory process.

Rivista di Clinica Pediatrica, Florence

November, 1921, **19**, No. 11

Tardy Manifestation of Congenital Stenosis in the Pylorus. E. Mensi.—p. 641.
Chronic Mediastinitis in Children. V. Mattei.—p. 656.

January, 1922, **20**, No. 1

*Resisting Powers of the Blood Vessels. G. Frontali.—p. 1.
*Disintegration in Tuberculous Meningitis. U. Montanari.—p. 40.

The Resisting Power of the Blood Vessels.—Frontali reports the results of experimental research on subcutaneous and submucosal hemorrhages, with special regard to conditions in children. The resisting power of the capillaries varies in different regions, and varies from individual to individual. But as a rule it is higher in infants than later in life. Under the influence of infections and toxins, the vessels become more fragile. The frequency of hemorrhagic phenomena in children is due to the peculiarly active injury of the vessels from the eruptive diseases, especially measles and scarlet fever.

Metabolism in Tuberculous Meningitis.—Montanari analyzes what he calls the distintegrative symptomatology of this disease as studied in seven cases. Glycosuria was manifest in 36 to 40 per cent. He theorizes to explain this, and the constant presence of creatinin in the urine, as also of acetone, diacetic acid and uric acid in large proportions.

Archivos Españoles de Pediatría, Madrid

January, 1922, **6**, No. 1

*Tumors in Children. E. Nogueras.—p. 5.
Typhoid in Infants. A. R. Lozano.—p. 19.
Astasia-Abasia in a Young Child. C. Pérez Arias.—p. 29.

Tumors in Children.—Nogueras comments on the different location of tumors in children from the locations in adults, the predominance of sarcomas, the greater incidence in boys, and the lesser tendency to cachexia and to recurrence. He refers to D'Espine and Picot's recent compilation of 577 cases of malignant tumors in children, supplementary to Duzan's compilation of 182 cases. He then adds a few cases of tumors in children from his own practice. In one girl of 7 a palliative operation on a periosteal sarcoma on the fibula was followed by pronounced debility and the tumor increased rapidly in size. The leg was amputated and prompt recovery followed although there is still an enlarged gland in the inguinal region. In another case a lipoma on the fibula of a boy of 9 was successfully enucleated. It weighed 785 gm. In three other cases a hydatid cyst in the neck was successfully treated. In one of this group the cyst had ruptured in a fall, and this had induced symptoms of severe anaphylaxis for a time. When the cyst had filled out again it was removed.

Archivos Latino-Amer. de Pediatría, Buenos Aires

January, 1922, **16**, No. 1

Albumin Milk in Infant Feeding. E. Davidsohn (Berlin).—p. 2.
*The Echo Reflex in Chorea. L. Morquio.—p. 18.
Amebic Dysentery in Children. A. Volpe and N. L. Bloise.—p. 26.
*Friedreich's Disease. A. Casaubon and W. J. Muniagurria.—p. 36.
*Pneumococcus Septicemia. M. Acuña and J. P. Garrahan.—p. 46.

The Echo Reflex in Chorea.—Morquio calls attention to the exaggeration of the patellar reflex in certain cases of chorea, and the repetition, two or three times, of the knee jerk, like an echo. This with other features of the chorea in certain cases has convinced him that, besides the rheumatismal form of chorea, we must accept another form as one manifestation of epidemic encephalitis. In his thirty cases of this form in 1918, the chorea followed some catarrhal infectious process; the chorea was moderate and generally limited to one side of the body; the course was shorter than usual, and the termination always favorable. During 1921, chorea was rare and of the rheumatismal type. He had encountered only two cases of epidemic encephalitis during the preceding six months.

Friedreich's Disease.—No cases were known in the family when the boy of 7 developed the symptoms of Friedreich's disease, which is now, at the age of 10, very pronounced. The first symptoms had followed an attack of diphtheria, but the child showed signs of inherited syphilis.

Pneumococcus Septicemia.—The boy of 8 developed pneumococcus septicemia with foci in pleura, lung and joints, but he recovered after a two months' febrile course. Two other cases of pneumococcus septicemia were observed in the same ward in the course of the two weeks, and one proved fatal. Antipneumococcus serum was followed by some improvement in the first case, but then the condition became much graver, and saline, camphor and subcutaneous injections of a silver salt, with epinephrin by the mouth, were the main reliance.

Gaceta Médica de Caracas

Oct. 31, 1921, **28**, No. 20

*Surgical Treatment of Secondary Dyspepsia. H. Cuenca.—p. 304.
Appendicitic Peritonitis. A. López Rondón.—p. 307.
*Brain Abscess. A. L. Briceño Rossi.—p. 310.
*Thrombosis of Mesenteric Veins. R. Torres Suels.—p. 312.
Helminths in Appendix. J. Quintini M.—p. 313.
*Polydactylia. A. Marcucci Delgado.—p. 317.

Secondary Dyspepsia.—Two cases of long rebellious dyspepsia are described in which a complete cure followed an operation on the gallbladder or appendix or both.

Abscess in Brain.—Briceño calls attention to the two operative cases he reports as the patients were supposedly moribund, but both promptly recovered. The abscess followed an infectious process in the frontal sinus in one and in the maxillary sinus in the other case.

Thrombosis of Mesenteric Vessels.—In Torres' two cases the sudden stormy onset of symptoms suggested perforation of a viscus or ileus, but the operation revealed the viscera intact. The thrombosis in the mesenteric vessels of the small intestine amply explained the symptoms. The diagnosis was made before the operation in one case as the woman's leg had recently been amputated for gangrene.

Polydactylia.—The man and his three daughters had six fingers and toes on each limb. The supernumerary ones were amputated.

Nov. 15, 1921, **28**, No. 21

*Operative Treatment of Acute Dysentery. S. Córdoba.—p. 324.
*Febrile Parahemoglobinuria. C. E. Salom.—p. 328.

Operative Treatment of Acute Dysentery.—Córdoba could not observe the slightest improvement under emetin or other medical measures in a grave case of dysentery in a girl of 13. The onset had been sudden and the course rapidly progressive. As a last resort, a large drain tube was introduced into the cecum and the appendix removed. The rectum was studded with ulcerations, but after the cecostomy the number of stools rapidly declined and contained very little blood; the pulse dropped from 120 to 110; the intense pain in the colon and the fever subsided, and bladder functioning was restored. Thirty hours after the operation he began to flush the bowel through the cecum to the anus, using for the disinfectant a 1 per cent. solution of boric acid. Four hours after this the pulse increased again, the heart failing to complete collapse. The case teaches the danger of temporizing in this grave form of dysentery; the interval between the first symptoms and the operation had been several days. Soto González in a neighboring city operated recently in a similar case the fifth day, with complete success. The improvement in Córdoba's case was beyond question, but the condition had passed beyond the stage of possible recuperation.

Febrile Parahemoglobinuria.—Salom designates by this term a febrile condition developing from two to six weeks after an attack of hemoglobinuric bilious fever. It is a sign of reinfection with malaria, and in the grave form the nerves and glands are involved, and an actual hemoglobinuric bilious fever develops anew. The treatment of the original attack usually decides the form; when treatment was with physiologic and hypertonic saline, heart and nerve tonics and hemostatics, and mosquitoes had been kept away, the mild form is usually promptly amenable to ordinary measures. In the grave form, the main reliance is on methylene blue, ergot, and arsenic by the mouth, or methylene blue and ergot by subcutaneous injection.

Semana Médica, Buenos Aires

Dec. 8, 1921, **28**, No. 49

*Injection of Fluid into Placenta. A. Peralta Ramos and M. L. Pérez.—p. 777.
Compressor and Table for Intravenous Injections. J. Nin Posadas.—p. 797.
Campaign Against Tuberculosis in France of the Rockefeller Foundation. J. W. Howard.—p. 799.
A National Antituberculosis League. J. W. Howard.—p. 801.
Vitamins from Clinical Standpoint. C. Pillado Matheu.—p. 803.

Turgidization of the Placenta.—In 1914, Professor Gabastou of Buenos Aires was trying to clear a placenta of blood in order to apply the Aberhalden test, when the idea occurred to him that distending with a fluid the adherent placenta might help to detach it from the wall of the uterus. He called this the hydraulic procedure, and his publication on the subject attracted much attention. Peralta and Pérez here report the application of the procedure in a series of 28 cases which has confirmed the harmlessness and the efficacy of the method. In case of inertia of the uterus, the artificial turgidization should be preceded by oxytocics. In the cases described, from 500 to 1,000 c.c. of fluid were required, and in one case a vein ruptured and the fluid escaped without distending the placenta. In one case of twin pregnancy, with two placentas, the hydraulic procedure proved exceptionally useful. In 2 cases the hemorrhage had become so alarming that the hydraulic procedure was abandoned. In 3 cases of placenta praevia, the fluid was injected at once to the maximal amount after delivery of the child, as a prophylactic measure, successful in all. Besides the 28 cases in which the procedure was indicated, it was applied in a large number of normal cases which confirmed the reliability and harmlessness of the method.

Archiv für Kinderheilkunde, Stuttgart

Feb. 21, 1922, **71**, No. 1

*Pneumonia in Infants. S. Engel.—p. 1.
*Tuberculosis in Infants. R. Fischl.—p. 6.
*Chronic Lead Poisoning in Children. E. Friedberg.—p. 25.
*Waves of Diphtheria Incidence. O. Lade.—p. 30.
Saponin Hemolysis in Scarlet Fever. F. Tebbe.—p. 40.
Roentgenography of the Hilus in Children. A. Scherer.—p. 54.

Pneumonia in Infants.—Engel's research has apparently demonstrated that pneumonia processes in debilitated infants locate at points where the ventilation is most defective. It is not a hypostatic pneumonia, as in the elderly, but starts in the upper portions and spreads downward.

Tuberculosis in Infants.—Fischel relates that in 2 of the 77 infants with tuberculosis in his service, 1915 to 1920, a positive tuberculin reaction was obtained the sixteenth and the twenty-fourth day after birth. In one of them the location of the only tuberculous process found pointed to infection from the umbilicus or swallowing tubercle bacilli in the amniotic fluid. Only 14 per cent. of the total 3,550 infants responded positively to the skin tuberculin test, repeated regularly every four weeks. At 40 necropsies, the primary focus was manifest in 35 and in all but 5 of these the focus was evidently from droplet or spray infection from bacilli spreaders. In 2 cases the focus was in the bowel, in 2 others in the middle ear, and in one in the nose, evidently from attempts to clean the nose. In 43 of the 77 cases the source of the infection was traced. In the 35 cases in which the mother was tuberculous, the child had been taken from the mother the first day, the third, eighth or tenth day in some of the cases. The tuberculous infants were under weight at birth in 33 of the 77 cases. Even with the tuberculin and roentgen examination, the tuberculosis may escape detection, or the findings may deceptively suggest tuberculosis. A cough is the earliest and most constant symptom; it was pronounced in 45, and in 10 it resembled whooping cough in some respects. Compression of a bronchus by enlarged glands may induce a wheezing during expiration. Constant losses of weight are suggestive, especially soon after birth. In 37 cases there was fever, but in 6 the temperature was constantly normal. Protein therapy is worth a trial, he says, injecting 0.5 or 2 c.c. of horse or sheep serum subcutaneously every day or second day. Tuberculin treatment by various methods was pushed, but no decided effect was realized. It might be possible by combining the tuberculin and the protein therapy to rouse to a better production of antibodies.

Chronic Lead Poisoning in Children.—A boy of 7 developed pains in joints, muscles and head, with weakness of the legs and reflex anomalies which were ascribed to beginning progressive dystrophia of muscles. The child was under observation for four years before the sudden onset of polyneuritis suggested possible lead poisoning. Then it was found that the child had some lead soldiers, cast at home, with which it played a great deal. The father, a typesetter, gave him lead letters to play with. As soon as all lead was taken away, all the symptoms gradually subsided. There had never been lead colic or the lead line on the gums.

Epidemiology of Diphtheria.—Lade discusses the climatic and geologic factors which may be responsible for the thirty-year tides in the prevalence of diphtheria. He says that we seem to be now at the beginning of a downward trend in the diphtheria curve, as we are entering on a ten year dry period after the twenty year period of extra humidity.

Archiv für klinische Chirurgie, Berlin

Jan. 27, 1922, **119**, No. 1

*Operative Mobilization of Stiff Fingers. E. Hesse.—p. 1.
*Resection of Esophagus. W. Levy.—p. 20.
*Exploratory Excision in Cancer. K. Nather.—p. 64.
The Nature of Epignathus. K. Nather.—p. 73.
Invagination of Appendix. A. Szenes.—p. 88.
*Cleft Sternum. A. Szenes.—p. 116.
*Luxation and Fracture in Trauma of Foot. W. Schulz.—p. 126.
The Intraperitoneal Pressure. E. and P. Melchior.—p. 148.
*Factors that Modify Topography of Body. V. N. Schewkunenko.—p. 157.
*Disease of Male Breast. J. Schneller.—p. 169.
Radiotherapy of Surgical Tuberculosis. H. Boch.—p. 211.
Operation for a Cecal Tumor. A. H. Hofmann.—p. 214.
*Access to Pituitary Through Sphenoidal Sinus. W. Mintz.—p. 219.

Operative Mobilization of Stiff Fingers.—Hesse warns that plenty of time must be allowed to elapse for the infection to die out. In ten cases in which the interval was from nine to eighteen months, the course was aseptic in all but one, while there was only one aseptic course in four cases in which the arthroplastic operation was undertaken in from one to four weeks.

Resection of the Esophagus.—Levy recalls that he was a pioneer in experimental research in this line thirty years ago. Of all modes of access, that through the back, with resection of ribs on the left side, gives most ample access to the thoracic portion of the esophagus. He illustrates the various steps of the operation. After resection of esophagus and cardia, the stump of the esophagus is drawn out through the skin; the diaphragm is sutured to the chest wall, and a wisp of the stomach is brought out through the chest wall below. An autoplastic tube to connect the esophagus and stomach is then constructed. He has found the whole technic feasible and satisfactory in dogs and on cadavers. The reconstructed esophagus lies close to the back, outside of the pleura, and its direction and course are like those of the normal esophagus.

Exploratory Excision of Scrap of Cancer.—Nather has noted a striking spread of the malignant disease following excision of a scrap for examination. He also noted an increase in weight in white mice with cancers after a scrap had been excised, and he thinks the increase in the weight was probably due to an increase in the tumor. An excised scrap is instructive only when a generous scrap is taken from the right spot, that is, at the zone of junction between the malignant and normal tissue. It should be excised with all the precautions of an extensive operation. The frozen section technic is the safest for the examination as it shortens the dangerous interval between the excision and the radical operation.

Cleft Sternum.—Szenes ascribes the congenital cleft in the boy of 8 to pressure from the chin as the cord was wound around the neck.

Complex Trauma of Foot.—The wheel of the automobile had passed over the foot and, besides the multiple fractures, there was complete dorsolateral luxation in the metatarsal phalangeal joint and subluxation in the tarsometatarsal joint. Schulz compares each of these pathologic conditions with statistics from the literature, and discusses the treatment of each. The final outcome in this case was satisfactory.

Factors that Modify Topography of the Body.—Schewkunenko gives an illustrated description of the various factors that modify the shape of organs, gravity, loss of elasticity, fat deposits, etc. All these must be borne in mind in selecting the technic for operations at different ages, according as these factors have had a longer or shorter time to make their influence felt.

Disease of Male Breast.—Schneller surveys the literature on this subject from deformities to infectious and malignant disease, citing instructive examples of each type from the records.

Access to the Pituitary Through the Sphenoidal Sinus.—Mintz turns back the nose and works back to the sella turcica horizontally through the sphenoidal sinus. Four cases are described that demonstrate the advantages of this method. The remarkable variety in the shape of the sella turcica is shown also in a number of illustrations.

Deutsche medizinische Wochenschrift, Berlin

Jan. 26, 1922, **48**, No. 4

*Etiology and Treatment of Detachment of Retina. Uhthoff.—p. **115.**
Deposit of a Copper Pigment within the Eye. A. Jess.—p. 118.
Testing of Acoustic Nerve with C^5 Tuning Fork. Uffenorde.—p. 120.
Treatment of Cancers. Sauerbruch and Lebsche.—p. 122. Cont'n.
Treatment of Perforated Gastric Ulcer, with Subphrenic Pyopneumothorax. R. Stahl.—p. 125.
Weight as Index of State of Nutrition. G. Oeder.—p. 126.
Studies on Typhus Fever. L. Finkelstein.—p. 128.
Testing of Corneal and Pharyngeal Reflexes. Max Möller.—p. 129.
Inflammations of the Vulva, Vagina and Uterus. Liepmann.—p. 130.

Etiology and Treatment of Detachment of the Retina.—Uhthoff discusses only idiopathic detachment of the retina from primary exudation of serous fluid below or the shrinking of newly formed cellular tissue, together with shrinking of the vitreous and a secondary collection of fluid beneath the retina. He holds that many cases of retinal detachment are due to myopia, more especially the higher grades of myopia, and states that myopia was the cause of 61 per cent. of his extensive series. He sees no good reason for rejecting the use of a pressure bandage (not too tight); advocates rest in the supine position, although a sitting posture is sometimes preferable, according to the site of the detachment. He favors diaphoresis, but warns against too heavy subcutaneous injections of pilocarpin and unusually large doses of salicylic acid. Strong solutions of sodium chlorid, up to 25 and 30 per cent. concentration, as used by some, are dangerous as they injure the tissues and may result in obliteration of the capsule of Ténon; in one case glaucoma, and in another hemorrhages into the vitreous resulted. Of 351 cases of permanent reattachment of the retina, compiled, 24 per cent. were brought about by operative procedure, 45 per cent. by conservative treatment, and 31 per cent. were spontaneous, without treatment. In the writer's personal experience, about half of the reattachments were cases of spontaneous healing, 28 per cent. were brought about by conservative treatment and 22 per cent. by operative intervention. About 9 per cent. of all his cases resulted in final reattachment. He regards as one of the most harmless operative methods the simple or double puncture of the sclera, with as complete evacuation of the subretinal exudate as possible; recurrences are, however, common.

Medizinische Klinik, Berlin

Jan. 22, 1922, **18**, No. 4

*Genital Hemorrhages. Benthin.—p. 99.
*Psychanalysis. W. Stekel.—p. 102.
*Some Syphilis Problems. Fabry and Wolff.—p. 106.
*Neurosyphilis. J. Brock.—p. 107.
*Phenol for Local Anesthesia of Skin. K. Gerson.—p. 109.
Eyelet Holes in Skin to Lace Up Openings. A. Linhart.—p. **110.**
*Poliomyelitis in Adult. P. Holzer.—p. 110.
*Disordered Heart Action in Scarlet Fever. S. Hirsch.—p. 112.
Third Modification of Meinicke Test. W. F. Winkler.—p. 114.
Acute Gastro-Intestinal Disease in Infants. K. Blühdorn.—p. 115. Conc'n No. 5, p. 149.

Genital Hemorrhages.—In discussing the causes and treatment of genital hemorrhage, Benthin keeps reiterating that the main thing is to discover and remove the cause.

Psychanalysis.—Stekel expatiates on the limits, the dangers and the abuses of psychanalysis. His article forms a chapter in his work "Psychosexueller Infantilism." This chapter is the substance of a lecture delivered at the University of Chicago in May, 1921. He deplores that psychanalysis is still so little understood, notwithstanding all this pandemic of psychanalysis. Even the most expert are liable to overlook some organic disease in its incipience, and then, as the organic disease continues its course, the physician may be accused of having engendered with his psychanalysis the dementia praecox, or other organic disease. Many a case has been referred to him for treatment, with the diagnosis of hysteria, which he has had to reject, as schizophrenia soon became unmistakable. He insists that psychanalysis should be restricted to the grave cases in which the earning capacity and aptitude for life in general are reduced by the condition.

Problems of Treatment of Syphilis.—Among other points discussed, Fabry and Wolff comment on the increasing prevalence of cases of jaundice, among persons taking arsphenamin treatment, during periods when jaundice is uncommonly prevalent under other conditions. They make a point of treating the jaundice in syphilitics with more arsphenamin, and always found that the jaundice retrogressed under it. Their extensive experience in this line confirms the *monorecidiv* character of the jaundice.

Neurosyphilis.—Brock gives the details of forty-two cases of neurosyphilis under repeated control of the cerebrospinal fluid for years. The fluid findings returned to normal in one case, with symptoms of spinal meningitis at the posterior roots, under a total course of 4.15 gm. silver salvarsan and sixteen mercurial injections, but, after transient improvement in the clinical picture, symptoms of tabes developed. In such cases treatment had better be with small doses of the arsphenamin, possibly with shorter intervals, to avoid irritating further the spinal tracts already tending to degeneration.

Phenol in Anesthetization of the Skin.—Gerson has long made a practice of applying liquid phenol on a cotton-wound toothpick to the skin until the skin turns white. This anesthetizes it as effectually as the ethyl chlorid spray, but with the great advantage over the latter that the anesthesia lasts for two or three hours. The anesthesia of the nerve terminals by this means allows painless subcutaneous and intramuscular injections, even suture of a perineal tear, opening a furuncle, etc. The phenol does not leave a scar, but it may be a month or two before the tint of the spot may be quite normal again.

Acute Poliomyelitis in Adults.—In Holzer's case the clinical picture of acute anterior poliomyelitis in a girl of 17 was masked by acute appendicitis with perforation.

Disordered Heart Action in Scarlet Fever.—Hirsch noted heart disturbances of various kinds in twenty-eight of sixty cases of scarlet fever last winter.

Jan. 29, 1922, **18**, No. 5

Intervention in Disease of Pleura. R. Cobet.—p. 133.
*Correlation of Glands. R. Wagner and J. K. Parnas.—p. 137.
Obstetric Examination of Head. H. Kritzler.—p. 141.
Sexuality in Sporadic Cretinism. H. W. Wollenberg.—p. 144.
Petrolatum Treatment of Chronic Constipation. W. Zweig.—p. 147.
Congorubin Test for Spinal Fluid. Gutfeld and Weigert.—p. 148.

Correlation of the Endocrine Glands.—The girl of 10 seemed to have chronic interstitial hepatitis; the liver was very much enlarged, and in addition there was an odor of acetone about her when fasting, and there is glycosuria after ingestion of starch and sugar, but no sugar is found in the blood, fasting, although ketone bodies abound. After eating sugar and starch, the acetone disappeared, but intense glycosuria followed. This same sequence occurred day after day. Under thyroid treatment, lipemia, lipuria and steatorrhea developed. Wagner and Parnas theorize that the main disturbance in this case is the lack of the ability to form and store glycogen in the liver. In some respects the condition is like that of a mild diabetes, but it differs materially from the latter when sugar is not being supplied from without. There is no formation of sugar from the body reserves. But this takes place when thyroid treatment is given. This seems to suggest that the thyroid is in control of this function. They theorize further that the pancreas presides over the sugar metabolism: through the liver it checks the mobilization of glycogen; through the thyroid it influences the formation of sugar anew. The removal of the pancreas thus removes the brake on both these functions, and complete experimental diabetes is the result.

Münchener medizinische Wochenschrift, Munich

Jan. 20, 1922, **69**, No. 3

*Diagnosis of Types of Tuberculosis in Man. K. E. Ranke.—p. 69.
Treatment of Pulmonary Tuberculosis by Stimulating the Circulatory Apparatus. W. Arnoldi.—p. 72.
Prolapse of the Cord and Its Treatment. Schweitzer.—p. 73.
Laceration of Tentorium and Falx During Delivery. R. Zimmermann.—p. 75.
Acute Perforation of Gastric and Duodenal Ulcer. T. Brunner.—p. 77.
Bronchotomy in Deep, Incurable Stenosis of Trachea. Réthi.—p. 81.
Acetonuria and Experimental Epinephrin Glycemia in Dysentery. Buttenwieser.—p. 83.
Availability of Meinicke's Third Modification. Ruete.—p. 83.
Flocculation Reactions by Sachs-Georgi and Meinicke Methods, and Dold's Turbidity Reaction. R. Strempel.—p. 85.
Peculiar Accident with Pneumoperitoneum. A. Lorey.—p. 86.
Roentgen Treatment of Chilblains. R. Lenk.—p. 87.
Traumatic Renal Cyst. E. Baumann.—p. 87.
Pessaries for Prolapse of Genital Organs. S. Samson.—p. 88.
Nature and Origin of Diastasic Ferments. E. Rothlin.—p. 88.
Toxic Gases in Roentgen Laboratories. H. Guthmann.—p. 89.
Treatment of Ulcus Corneae Serpens. B. Fleischer.—p. 89.

Clinical Diagnosis of Types of Tuberculosis in Man.—Ranke distinguishes four different modes of evolution of tuberculous focal infections in the human organism and three distinctly different ways in which the organism so attacked reacts to the infection. The four modes of progression are: direct spread of the infection from cell to cell; by the lymph glands; by the blood vessels; and spread of the infection in the lumen of hollow cavities, or intracanalicular. As to the three forms of reaction to the infection, he distinguishes a primary reaction with which the infection begins; a later secondary reaction with pronounced anaphylactic features, and a third with distinct evidence of a peculiar partial immunity. Transmission by way of the lymph may frequently be recognized in roentgenograms of the lung by the changes in the lymph vessels, but more especially by infection of the lymph glands. Ranke holds that the hematogenic origin is so rare that practically speaking we can regard a lymph gland infection to be a lymphogenic metastasis, and that is always the case if the regional lymph glands have become involved. Hematogenic metastasis reveals itself likewise by the site of the focus. Tubercle bacilli in the retina, in the suprarenals, in the renal parenchyma, or in other parts of the organism which the tubercle bacillus can reach only by way of the circulation, may be regarded as hematogenic, provided contact and intracanalicular transmission do not enter into the question. This will apply to most tuberculous infections of the connective tissues, the bones and joints. Intracanalicular transmission is determined by similar relations of the focus to glandular tracts, including their more remote outlets; for example, the genital tract, the intestine, the bronchi and other hollow organs.

Therapeutische Halbmonatshefte, Berlin

Nov. 1, 1921, **35**, No. 21

*Roentgen Irradiation for Pulmonary Tuberculosis. Stephan.—p. 649.
Treatment of Influenza in Pregnant Women. W. Koerting.—p. 655.

Roentgen Irradiation for Pulmonary Tuberculosis.—Stephan states that the most appropriate dose in roentgen treatment of pulmonary tuberculosis is one that is just barely effective. Roentgen therapy should be confined mainly to chronic fibrous forms, leaving out of consideration lobular, exudative processes. This indication is, of course, often difficult to meet because both processes frequently appear in close proximity to one another. Roentgen irradiation in pulmonary tuberculosis, he is convinced, can be regarded only as an adjuvant.

Dec. 1, 1921, **35**, No. 23

*Pathogenesis and Therapy of Gout. S. J. Thannhauser.—p. 717.
Roentgen-Ray Treatment of Neuralgias. W. Fürnrohr.—p. 723.
War Neuroses and Peace Neuroses. E. Jolowicz.—p. 728.
Ergotropic Treatment and Ergotropic Action. Von Gröer.—p. 732. Conc'n No. 24, p. 779.
Facial Paralysis and Trigeminal Neuralgia. Auerbach.—p. 737.

The Pathogenesis and Therapy of Gout.—Thannhauser says that the formation of uric acid in the human organism can be reduced only by decreasing to a minimum the intake of nuclein-containing food; that is, the exogenous, preformed uric acid. Diet is, therefore, the principal thing in the therapy of gout. No better proof can be brought for the correctness of these statements than the rationing of meat during the war. In the war period, when meat had disappeared, for the most part, from the table of Munich's population, not a single acute attack of gout was observed in the Second Medical Clinic. Now that meat is beginning to be more plentiful, he has begun to observe again, at least among the well-to-do, acute attacks of gout.

Wiener klinische Wochenschrift, Vienna

Jan. 12, 1922, **35**, No. 2

Anesthesia in Extraction of Teeth. A. Kneucker.—p. 25.
Reasons for the High Resistance of Certain Vegetative Products to Roentgen Rays. E. Petry.—p. 27.
Ozena. G. Hofer.—p. 27.
Ileocecal Invagination in Roentgenogram. Czepa.—p. 30.
*Cancer of the Rectum. F. Mandl.—p. 31.
Primary Sarcoma of Omentum Majus. W. Smital.—p. 33.
Relation Between Typhoid and Thyroid Gland. Fleckseder.—p. 34.
Rare Microscopic Finding in Stomach Contents Secured by Stomach Tube. W. Robitschek.—p. 35.
*Prophylaxis of Endemic Goiter. R. Klinger.—p. 35.

Cancer of the Rectum.—Mandl subjects to a review the 799 cases of cancer of the rectum that occurred in the Hochenegg clinic during the last fourteen years. They constituted 16 per cent. of all the carcinoma cases; 67.6 per cent. of the cases were in men and 32.4 were in women. Most of the patients belonged to the 50-60 age group. The youngest patient was a girl of 12 and the oldest a man of 81. In 223 cases irregularities in the stools constituted the first symptom of the disease. In many cases emaciation without rectal difficulties was the first symptom, while 66 of the patients were admitted to the hospital with the diagnosis "intestinal catarrh" or "hemorrhoids." As to position, 44.8 per cent. were in the pars ampullaris and 25.9 per cent. were located about 10 cm. from the sphincter. Hochenegg holds that every carcinoma of the rectum should receive surgical treatment. Roentgen and radium treatment produced no good results; in all but one of 28 cases the effect seemed even unfavorable (hemorrhages, pain).

Prophylaxis for Endemic Goiter.—Klinger recommends systematic iodin prophylaxis for endemic goiter, and that all goiter patients who are operated on should be given an iodin tablet every week, for a number of years which he holds will prevent the frequent recurrences.

Zeitschrift für klinische Medizin, Berlin

Dec. 30, 1921, **92**, No. 4-6

*Mineral Metabolism in Hemophilia. R. Berg.—p. 281. Id.—p. 331.
Action of Endocrine Gland Extracts on Gas Interchanges. W. Arnoldi and E. Leschke.—p. 364.
*Sodium Chlorid from Constitutional Standpoint. C. Moewes.—p. 376.
*Purin Metabolism in Chronic Arthritis. F. Lahmeyer.—p. 381.
*Cholesterin in Blood in Kidney Disease. A. Hahn and E. Wolff.—p. 393.
*Acute Yellow Atrophy of the Liver. M. Meier.—p. 406.
*Xanthomatosis and Hypercholesterinemia. F. Rosenthal and R. Braunisch.—p. 429.
*Respiratory Findings in Polycythemia. E. Schill.—p. 442.
*Epinephrin Test of Spleen Functioning. W. Frey and E. Hagemann.—p. 450.
*Acute Yellow Atrophy of the Liver. M. Gutstein.—p. 466.
Importance of Complement Binding Antibodies in Pulmonary Tuberculosis. E. Wetzel.—p. 473.
Experimental Chronic Anemia. N. Schustrow.—p. 490.
*Functional Tests of Blood-Producing Organs. N. Schustrow and Wlados.—p. 495.
The Constitutional Factor in Pernicious Anemia. Schustrow.—p. 501.
Diagnostic Import of Milk Fever Test. R. Schmidt.—p. 505.
*Curative Action of Erysipelas on Tumors. W. Wolffheim.—p. 507.

The Mineral Metabolism.—These are Berg's fifth and sixth reports on his extensive research in this line, and the fourth and fifth report on the work devoted exclusively to hemophilia. The power of oxidation of the products of metabolism is constitutionally below par in hemophilia, and an impending attack can be foreseen by the retention of certain elements in the urine. This might warn of danger. More alkali or more acid might be given in the food, and special care be taken to ward off overexertion and other factors that might aid in bringing on the attack.

Elimination of Sodium Chlorid.—Moewes denies that there is any direct connection between the elimination of sodium chlorid and any constitutional anomalies.

Purin Metabolism in Joint Processes Other than Gout.—Lahmeyer explains that the lack of exercise with chronic joint disease is liable to upset the purin metabolism almost as much as in actual gout.

Cholesterin in Blood in Kidney Disease.—Hahn and Wolff never found any parallelism between the retention of nitrogen and the blood pressure, and the cholesterin content of the blood. The latter seems to be connected, however, with changes in the tubuli.

Acute Yellow Atrophy of the Liver.—Meier remarks that the striking increase during the last few years in the number of cases of acute yellow atrophy of the liver has demonstrated that there is no single cause for it. Ordinary catarrhal jaundice is the main precursor, but the spleen and pancreas may display an activating influence.

Xanthomatosis and Hypercholesterinemia.—The young man in the case described had extensive and progressive xanthomatosis of the skin, but the cholesterin content of the blood was constantly normal, and there was nothing to suggest diabetes or jaundice.

Respiratory Findings in Polycythemia.—Schill found the metabolism normal in three cases of polycythemia investigated, as also the consumption of oxygen.

Test Epinephrin Lymphocytosis.—In sixteen cases of splenomegaly with histologic examination of the spleen, the injection of epinephrin had induced lymphocytosis whenever the spleen was functionally capable. A negative response was never obtained except when the spleen was severely pathologic.

Acute Yellow Atrophy of the Liver.—In the case described, the atrophy followed a course of 10 per cent. extract of male fern in oil to expel a tapeworm. The total dose had been twice that given in the directions on the box of "filmaronöl," and the tapeworm was expelled. The following symptoms were ascribed at first to catarrhal jaundice, but necropsy at the sixth day revealed acute yellow atrophy in the liver. The organ was already the site of an extensive tertiary syphilitic process, but this was probably only an accessory factor.

Test for Bilirubin in Urine.—In the course of Gutstein's report of the above case he mentions that the presence of bilirubin can easily be revealed by adding from 3 to 5 drops of the solution of potassium ferricyanid used in testing for albumin. The fluid turns a bright and durable green in case it contains bilirubin. This test has always proved reliable in several years' experience with it.

Test of Functional Capacity of Blood-Producing Organs.—Arsenic can be used for this purpose, as it has a hemolytic action. The maximal and minimal resisting powers of the erythrocytes were determined, and then an ordinary course of arsenic in daily therapeutic injections was begun, and the resistance of the erythrocytes was tested anew every third day. The findings in twenty-eight cases are tabulated, and the prognostic deductions from the responses.

Curative Action of Erysipelas on Neoplasms.—Wolffheim's review of the literature has shown 7 cases of sarcoma and 2 of mammary cancer in which the neoplasm completely subsided after a spontaneous erysipelas. In 11 other cases of malignant disease, erysipelas cultures were inoculated and the cancer was arrested or disappeared in several of them. In a case personally observed, a round cell sarcoma in the nasopharyngeal space, with extensive glandular involvement, in the man of 62 retrogressed under spontaneous erysipelas. He returned with recurrence six weeks later, and he was then inoculated with pus and cultures from other cases of erysipelas, applied to the scarified skin, or injected, but no effect was apparent. It proved impossible to induce erysipelas in the man. Wolffheim is inclined to explain the favorable action of erysipelas in such cases as a kind of protein therapy, and urges research in this line as possibly a promising treatment for cancer.

Zentralblatt für Chirurgie, Leipzig

Dec. 3, 1921, **48**, No. 48

*Tissue Defense Against Cancer. C. Bayer.—p. 1758.
*Technic of Esophagotomy. G. Mertens.—p. 1761.
Abnormality of Undescended Testicle Utilized in Operation. E. Pólya.—p. 1762.

Treatment of Penetrating Thorax Injuries. E. Haim.—p. 1764.
Etiology of Osteoarthritis Deformans Juvenilis of the Hip Joint. M. Hackenbroch.—p. 1766.

Sources of Defense of Organized Tissue to Cancer.—Bayer points out the constant reference in the literature, in connection with rapidly growing cancers, to the small-cell infiltration (leukocytes, lymphocytes, round cells) which with the microscope can usually be demonstrated in the tissues directly adjoining a neoplasm. Bayer has devoted considerable time to studying these accumulations of round cells commonly found around carcinomatous foci. In lymph glands involved in cancer are found unequivocal evidences of the destruction of cancer cells in the round-cell infiltrates of the lymph follicles. From this fact he concludes that the decomposition of cancer cells is brought about by these infiltrates, and that likewise the round-cell infiltrates about cancerous foci elsewhere constitute a source of defense against the cells of the neoplasm. He cites also four clinical observations in support of this view.

Technic for Esophagotomy.—Mertens describes the method he employed to remove foreign bodies from the esophagus in the case of three children who had swallowed a coin about the size of an American nickel or a flat, round lead button. Esophagotomy was resorted to at once. In general narcosis, the anterior border of the sternocleidomastoid muscle is dissected free on the left side of the neck and mobilized sufficiently so that the muscle can be drawn forward a little. Then a good-sized male metal catheter is inserted through the mouth and with the tip of the catheter the wall of the esophagus is pushed toward the incision. It is surprising how pliable the wall of the esophagus is at this point; in all three cases it was extremely easy to thrust it outward to the level of the external wound and then outside. The wall of the esophagus on either side of the catheter tip is then caught with a silk button suture, these sutures serving to hold up the esophagus, which is then opened at the tip of the catheter. This incision may be made very small, since it stretches considerably when the foreign body is withdrawn through it. Now the forceps are inserted in the esophagus, the foreign body is extracted and the wound closed, except for a small opening, into which an iodoform gauze wick is laid.

Zentralblatt für Gynäkologie, Leipzig

Dec. 3, 1921, **45**, No. 48

The Increasing Inoperability in Cases of Cancer of the Uterus. G. Winter.—p. 1733.
Embolism of the Lung in Pregnancy. W. G. Deucher.—p. 1743.
Application of Diathermy to the Female Breast. A. Seitz and E. Vey.—p. 1748.
Umbilical Hernia in New-Born Child. J. Genschel.—p. 1750.
Prolapsus Vaginae et Uteri ante et intra Partum. Fatal for Mother and Child. H. Kritzler.—p. 1753.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 14, 1922, **1**, No. 2

*Autochthonous Degenerative Psychoses. J. van der Torren.—p. 178.
*The Future of Internal Therapy. A. Willemse.—p. 186.
Direct Laryngoscopy in Children. E. Huizinga.—p. 193.
Blocking the Nerve for the Lower Jaw. J. J. de Vries.—p. 197.
Ruptured Myxocystoma of the Ovary. J. P. Hofstee.—p. 200.
*Spontaneously Painless Delivery. J. W. T. Willink.—p. 202.

Degeneracy Psychoses.—Van der Torren describes the details of two cases of autochthonous degeneracy psychoses, one with hallucinations, the other of a paranoid type.

The Future of Internal Medicine.—Willemse analyzes some typical cases to illustrate the benefit from injection of diluted turpentine directly into the joint in the phlegmonous form of gonococcus arthritis (four cases), and from daily injection of 1 c.c. of 10 per cent. turpentine in olive oil in puerperal fever (six cases). The prompt subsidence of the symptoms is too surprising to ascribe the entire effect to the one injection. No benefit was apparent in some cases of epidemic encephalitis, but parenteral injection of milk induced an intense focal reaction in some cases of acute articular rheumatism, and after its subsidence there were no further symptoms from the disease. In short, Willemse remarks in conclusion, internal treatment is undoubtedly entering on an era of the alchemy of injections. Empiricism has led the way, and scientific interpretation is trying to catch up with it.

Painless Delivery.—Willink adds another case to the list of those in which the child at term was delivered spontaneously without pain and without the woman's knowledge. In this case the infant was found drowned between the mother's thighs as she lay in bed, under the supervision of a trained midwife. The possibility of painless delivery of this kind throws light on certain cases of supposed infanticide.

Norsk Magazin for Laegevidenskaben, Christiania

February, 1922, **83**, No. 2

*Syphilitic Disease of Heart. N. B. Koppang.—p. 65.
*Blood-Borne Trichophytosis. E. Bruusgaard.—p. 83.
*Primary Duodenal Adhesions. S. Widerøe.—p. 89.
*Transfusion of Blood in Pernicious Anemia. H. F. Høst.—p. 103.

Syphilitic Disease of the Heart.—Koppang says in concluding his monograph that specific treatment of syphilitic disease of the heart may display remarkable efficacy, the arrhythmia, angina pectoris and symptoms of insufficiency all subsiding. But in other cases the result may be very disappointing. He has witnessed insufficiency of the aortic valve develop under his eyes in the midst of arsphenamin treatment. The benefit further may be not very durable. Recurrence is not infrequent. These considerations however do not detract from the importance of systematic treatment of syphilitic disease of the heart during the tertiary stage. We can arrest the course of the disease with it in many cases for a shorter or longer time, possibly for years. Specific treatment is of course only one link in the chain of measures required for the heart disease, but specific treatment is indicated whenever there is the slightest suspicion that syphilis may be involved, regardless of the previous history and negative Wassermann reaction.

Blood-Borne Trichophytosis.—The man of 66 presented the clinical picture of extensive deep trichophytosis, evidently of hematogenous origin and spread. Bruusgaard's photographs and the course of this and similar cases teach Nature's scheme of healing such lesions: the hairs drop out, and the fungus drowns in its own pus. No local measures are needed beyond merely keeping the region clean; at most, protecting the sound skin around with iodin.

Primary Duodenal Adhesions.—Widerøe's five cases illustrate the different clinical pictures liable to be induced by primary or secondary adhesions binding down the duodenum. They may suggest gastric or duodenal ulcer in every respect, except that there is no hemorrhage, as a rule. Dietetic treatment may possibly be of some use in the milder cases. In the cases here described, this treatment had had no or only transient effect, while operative correction proved successful in all. He is confident that these adhesions binding down the duodenum are more frequent than generally recognized; he has had to operate in six cases of the kind within seven years. The duodenum has to be worked loose, eventually with duodenoduodenostomy rather than gastro-enterostomy. He adds that notwithstanding some recent important works on duodenal obstruction by Kellogg, Judd and others, there are still many unsolved problems in the pathologic conditions of the duodenum.

Transfusion of Blood in Pernicious Anemia.—Høst reports that the pernicious anemia seemed to be temporarily arrested in its course in several of the eleven cases described. Remissions were recorded on nine occasions while no effect in five others was apparent. The patients were all kept in bed at first, on a light diet, with an arsenic tonic. The blood picture improved more or less at once in all, and the remissions induced in some have persisted in full force to date. When the donor had polycythemia, the blood did not display any efficacy in this line. Otherwise, the effect seemed to be proportional to the amount of blood transfused. One patient was kept alive for several months, eight transfusions having been made in the course of eleven months, a total of 5 l. of blood. One man of 62 was given five transfusions, 450, 450, 450, 900 and 200 c.c. in the course of the last three years, and he says he feels better than for many years.

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NEWER ASPECTS OF THE RICKETS PROBLEM [*]

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NEW YORK

There has been widespread interest in the etiology of rickets on the part of the clinician and the pathologist ever since Glisson and his committee in 1659 published their comprehensive report concerning its symptomatology and incidence. The interest has been sustained rather than active, as the theories regarding its etiology seemed hopelessly confused and were bewildering in their multiplicity. They have been based almost entirely on hypotheses or on general impressions gained by clinicians in the course of their medical practice. It is unnecessary to consider these various theories; suffice it to state that they have been all-embracing, incriminating errors of diet or of hygiene, faulty metabolism, inactivity of the endocrine glands, bacterial invasion, etc.

In the course of the last few years the status of rickets has changed—interest has become acute and activity intense, and advance in our knowledge promises to be greater during this decade than throughout the preceding 250 years. As the result of sudden accession of knowledge from various sources, we no longer are groping, but have been able to formulate sharply a few important questions susceptible of definite solution. The present may be said to constitute a new epoch in the history of rickets. This has come about primarily through an increased interest in nutrition and nutritional disorders, and as a logical sequel to the investigations of the vitamins and the so-called deficiency disorders. The analogy between rickets and scurvy, and the inclusion of the former among the avitamin disorders, naturally focused attention on it.

Until very recently, if we except the occasional experiment in which an animal was deprived of one or more of the inorganic salts, there had been no attempt to reproduce the disease in animals by means of controlled and restricted diets. The first serious and prolonged investigation of this kind was carried out by Mellanby. For these experiments he made use of dogs, and has published two interim reports of his work which has now extended over a period of five years.[1] Mellanby's work has been carried on and published under the egis of the Medical Research Council, which accepted his conclusions in its report on the Accessory Food Factors (Vitamines). Whether or not subsequent investigators corroborate this study, it constitutes a landmark in the experimental investigation of rickets from the dietary standpoint. More recently, the rat has been employed extensively as the experimental animal. Almost simultaneously, Sherman and Pappenheimer[2] and McCollum and his associates[3] devised standard diets which regularly led to rickets in this animal, and which by simple additions served to afford protection. This constituted a marked advance in the dietetic study of rickets, as it placed it for the first time under complete experimental control. Whereas the results in dogs were at all times conflicting or equivocal, in rats they proved to be constant. The rat had the additional advantage of being available in large numbers, susceptible of being bred from known stock, and characterized by a very rapid life cycle. Thousands of individual experiments have been carried out within the last year on this animal. This expansion of the scope of rickets investigations is certain to be of the greatest moment.

Another advance in the method of studying this disorder has been the use of the roentgen ray. Heretofore we have had to depend solely on clinical examination in diagnosing the presence of rickets, and there has been marked difference of opinion as to which signs should be regarded as pathognomonic. Today we also roentgenograph the epiphyseal ends of the long bones and obtain an objective criterion for diagnosis. It is of passing interest to observe that the possibility of employing the roentgen ray for this purpose was referred to repeatedly in the German and French literature without attracting attention in this country. Indeed, two monographs[4] on this subject were published in Germany as early as 1911.

A far broader interest in rickets has been stimulated by the realization that hygiene plays an important rôle in its causation. After years of discussion and disagreement, those who upheld the dietetic theory, as well as those who maintained the hygienic theory of origin, have been found to be right. It has been clearly demonstrated that rickets can be prevented or cured by means of light rays—either the artificial rays of the mercury vapor quartz lamp, or by sunlight. The fact that such dissimilar agents as diet and sunlight can both be of prime importance in connection with the origin and cure of a disease has not only tended to a broader conception of rickets, but also led to a larger point of view of nutritional disorders in general—an attitude which undoubtedly will prove fruitful. It will be noted that the newer aspect of rickets has resulted from advances which emanated from the clinic as well as from the laboratory, and that as so often happens, decided progress has not been made at the point at which the greatest pressure was being exerted—in this instance, in the domain of metabolism.

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[*] Cutter Lecture, read at the Harvard Medical School, Boston, Feb. 15, 1922.

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[1] Mellanby, E.: Lancet **1**: 407 (March 15) 1919; **1**: 550, 604, 856, 1920.

[2] Sherman, H. C., and Pappenheimer, A. W.: Experimental Rickets in Rats, I, A Diet Producing Rickets in White Rats, and Its Prevention by the Addition of an Inorganic Salt, J. Exper. Med. **34**: 189 (Aug.) 1921.

[3] McCollum, E. V.; Simmonds, Nina; Shipley, P. G., and Park, E. A.: The Production of Rickets by Diets Low in Phosphorus and Fat-Soluble A, J. Biol. Chem. **47**: 507 (Aug.) 1921.

[4] Fraenkel, E., and Lorey, A.: Archiv und Atlas der normalen und pathologischen Anatomie in typischen Roentgenbild, Hamburg, Lucas Graefe und Sillem, 1910. Wohlauer, F.: Atlas und Grundriss der Rachitis, München, J. F. Lehmann, 1911.

Five years ago, in conjunction with Dr. Unger, I began a clinical study of rickets. For the first two years our investigations embraced field work, such as studies of the diet of the negro mother in New York City[5] and the effect of cod liver oil on the rachitic negro infant.[6] For the last three years we have been observing the occurrence of rickets among the infants in a large child-caring institution. The babies in this home have been fed the various standard milk formulas, composed of raw or pasteurized fluid milk, dried milk, condensed milk, etc.; a few received human milk. Rickets has occurred on every one of these diets—generally in a mild form—in spite of the fact that the general hygienic conditions are exceptionally good. The investigation was carried out systematically; every month a detailed physical examination of the infants was made, combined, for the last two years, with routine roentgenograms of the epiphyses at the wrists; in addition, careful records were kept of the weight, length and temperature of each child, as well as of its food intake and stools. In this way we have been able to note the earliest beginnings of rickets, to correlate its incidence with the diet, and to appraise the relative significance of various signs of this disorder and their response to treatment. In general, it may be stated that less rickets has been found to develop among these infants than among those attending the outpatient departments in New York City. It has been our experience that those babies are most likely to develop rickets who are admitted in a poorly nourished condition and who, subsequently, thrive and gain in weight. Almost 75 per cent. of our patients belonged to this category, whereas about 25 per cent. developed rickets while not progressing satisfactorily.

Concurrently with this clinical study, an investigation of rickets in rats has been carried out in conjunction with a group of workers who have attacked various phases of this problem. At all times an effort has been made to correlate clinical and laboratory observations, to use the data from one source to check those derived from the other.

Before discussing etiology, it will be necessary to consider briefly what is to be regarded as constituting rickets. At first thought this may seem an unnecessary refinement, but pediatricians are finding it increasingly difficult to define rickets satisfactorily—a difficulty which is becoming greater as our knowledge increases and broadens. I have referred to roentgen-ray diagnosis as one of the significant advances of the last few years. Without going into detail, it may be stated that as the result of an experience embracing more than 1,500 roentgenograms of the wrists, it has been found that this method, like almost all diagnostic procedures, has important limitations. In noting the effect of treatment, for example of cod liver oil or of sunlight, it is a most delicate and prompt indicator. But in furnishing information as to the earliest beginnings of rickets, the roentgen ray was found to lag behind clinical examination. At first this may impress one as most improbable. It should be borne in mind, however, that we have to compare the roentgenogram of the epiphyses of the ulna and radius with clinical changes noted not at the wrist, but at the costochondral junctions. In our experience, the rachitic rosary (enlargement of the costochondral junctions) frequently precedes roentgenographic changes in the ulna or the radius. It is quite possible that, could we bring into clear view costochondral junctions by means of the roentgen ray, lesions would be observed in these areas before they could be appreciated by palpation. By the time the roentgen ray demonstrates rachitic changes at the epiphyses, a well defined rosary is almost invariably present. These observations apply to the early manifestation of rickets; they are not applicable to infants who have been receiving an inadequate quota of the antiscorbutic vitamin, for there is a scorbutic as well as a rachitic rosary. Furthermore, beading of the ribs is not a satisfactory criterion of the healing process, for it may persist for a considerable period after the roentgen ray has demonstrated that lime salts are being taken up by the epiphyses.

It is unnecessary to discuss other signs of rickets, such as enlargement of the epiphyses, craniotabes, delayed eruption of the teeth, poor musculature or marked sweating, as they either are later symptoms or are unreliable. Recently Howland and Kramer[7] have reported that rickets is accompanied by a diminished percentage of inorganic phosphate in the blood. It is too early to judge of the value of this test for early diagnosis. Its significance will be referred to later in another connection. In discussing rickets as in scurvy, it should constantly be borne in mind that the majority of cases are latent and not discernible by our diagnostic methods. The statistics of Schmorl, based on routine histologic examinations, indicate that rickets occurs earlier than we can discover it by the various clinical methods at our disposal.

It is impossible in this brief survey to consider even the entire question of the etiology of rickets. It will be necessary, therefore, to select, from among its various aspects, those which at present seem most timely and have been the subject of recent investigations. I shall confine myself to a consideration of the rôle in the diet of vitamin A (the fat-soluble vitamin), the rôle of phosphate, and the influence of light.

One of the central points of interest at present is whether the fat-soluble vitamin, or a vitamin closely associated with it, should be regarded as the antirachitic vitamin, whether rickets should be considered a deficiency disease similar to scurvy and beriberi. As is well known, this vitamin is present in abundance in animal fats, such as cream, butter and eggs, as well as in the leafy vegetables. Its absence has been shown to bring about xerophthalmia or keratomalacia both in animals and in children. This question was raised a few years ago by the investigation of Mellanby to which reference has been made. As a result of experiments on dogs, Mellanby came to the conclusion that rickets was due mainly to a lack of the fat-soluble vitamin. In his recently published second interim report, he has modified his position to the extent of granting lack of exercise a place in the etiology. Mellanby's experiments have been repeated on a smaller scale by Paton, Findlay and Watson,[8] who also used dogs as the experimental animal but failed to corroborate his results. There have been many other series of animal experiments, to which reference will be made, but none making use of dogs for this purpose. Mellanby's work, apart from having been carefully carried out and adopted by the Medical Research Committee of Great Britain,[9] gains additional support from the fact that cod liver oil is at once the most potent antirachitic substance for infants and for animals, and contains the fat-soluble vitamin in greatest concentration. It may be stated, therefore, that this circumstantial evidence supports the contention that the two factors are identical.

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[5] Hess, A. F., and Unger, L. J.: The Diet of the Negro Mother in New York City, J. A. M. A. **70**: 900 (March 30) 1918.

[6] Hess, A. F., and Unger, L. J.: Prophylactic Therapy for Rickets in a Negro Community, J. A. M. A. **69**: 1583 (Nov. 10) 1917.

[7] Howland, J., and Kramer, B.: Calcium and Phosphorus in the Serum in Relation to Rickets, Am. J. Dis. Child. **22**: 105 (Aug.) 1921.

About two years ago, Dr. Unger and myself considered this question. We attempted to show that babies, which had been carefully observed, developed rickets despite the fact that they received an abundance of milk, whereas others which received a diet low in fat-soluble vitamin did not develop signs of rickets.[10] It was pointed out also that metabolism studies did not favor the interpretation that rickets was due to a lack of milk, which is rich in this vitamin, for they repeatedly showed that negative calcium balances resulted when infants were given large amounts of whole milk. We therefore came to the conclusion that the fat-soluble vitamin is not the dominating factor in the development of rickets. It may be suggested that the milk may have been poor in its fat-soluble vitamin content, for, as is well known, the potency of milk in this respect depends on the fodder of the cows. Bearing this possibility in mind, the following winter we procured dried milk from pasture-fed cows instead of the ordinary dried milk, which, during this season, comes from stall-fed cows. This milk must have been particularly rich in fat-soluble vitamin, and should have protected the infants from rickets if this constituted the "antirachitic factor." As has been reported elsewhere, it was found that some of these infants developed rickets: that we had not been able to protect all the babies by supplying them with "summer milk" in the winter time.[11] In this connection, I may add that at the same time, the infant of a wetnurse, who was on a liberal diet including vegetables and at least one quart of milk a day, developed moderately severe rickets.

Almost all observations on the rôle of vitamin A are based on laboratory investigations; those on dogs have already been mentioned. About a year ago, Hess, McCann and Pappenheimer[12] studied the effect of a diet, almost totally lacking in fat-soluble vitamin, on the development of rickets in young rats. A test of this nature seemed of value in view of the fact that the rachitic bone lesions of this animal cannot be distinguished from those of infants, and that cod liver oil in very small amounts has also been found to be a specific both in the prevention and in the cure of this rickets. These experiments may be summarized by the statement that, in spite of the fact that a large series of young rats were maintained for months on a fat-soluble vitamin deficient diet, none developed rachitic lesions of the bones. Many, however, showed osteoporosis, and signs of lack of osteogenesis which should not be confused with the typical rachitic lesions of experimental animals. That these rats were truly suffering from lack of the fat-soluble vitamin was demonstrated by their eye lesions, which healed promptly on the addition of butter to the dietary; growth also failed and was at once stimulated by adding the fat-soluble factor to the dietary. These experiments recently have been corroborated by Shipley, McCollum and Simmonds,[13] who express the opinion that a diet lacking only in fat-soluble A brings about osteoporosis. An investigation of Korenchevsky[14] considers this subject from a somewhat different angle. As the result of an experiment carried out on a large series of rats, this investigation concludes that rickets is produced most readily and most frequently by a lack of the fat-soluble vitamin and of calcium, but that it is generally necessary to enforce these deficiencies for at least two generations. This is a point of view well worth bearing in mind.

There have been experiments in which other species of animals have been deprived of the fat-soluble vitamin; for example, Mackay[15] employed kittens for this purpose. Although the animals were found sensitive to this deficiency and manifested enlargement of the costochondral junctions, rickets did not develop. Tozer[16] carried out similar experiments on guinea-pigs, and also failed to produce rachitic lesions, bringing about merely atrophy of the marrow and lack of osteogenesis, as well as lesions described as resembling scurvy. Zilva, Golding and Drummond[17] used young pigs in their experiments, and likewise failed to produce rickets. Great weight cannot, however, be attached to these negative experiments, as they involve types of animals which have never been known to develop rickets under either natural or experimental conditions. As regards experiments on rats, on the other hand, the situation is quite different, as they are highly sensitive to rickets, having a susceptibility comparable to that of guinea-pigs to scurvy. Indeed, according to Mellanby's experiments it is difficult to produce rickets in dogs unless growth is maintained at a fairly normal rate, whereas in rats rickets can be regularly brought about while growth is at a standstill.

On weighing the evidence of clinical and laboratory investigations, we are led once more to the conclusion that, although the fat-soluble vitamin, or a vitamin closely associated with it, may play a rôle in the etiology of rickets, it does not play a dominant rôle. It has been shown by Zilva[18] that cod liver oil contains fully 150 times more of the fat-soluble factor than does butter,[19] and some have suggested, therefore, that the fat-soluble factor fails to prevent rickets in infants fed on milk because it is supplied in insufficient quantity. Granting that this explanation is correct, it would mean—if we consider a teaspoonful of cod liver oil sufficient to afford protection—that at least 5 quarts of milk would have to be consumed daily by an infant in order to provide an equivalent and adequate amount of this factor. It is evident that such reasoning furnishes an argument against, rather than in favor of the fat-soluble vitamin being the antirachitic factor, for, were the occurrence of rickets to depend on adequate vitamin being supplied in milk, all bottle-fed infants would be doomed to be rachitic.

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[8] Paton, N.; Findlay, L., and Watson, A.: The Cause of Rickets, Brit. M. J. **2**: 625 (Dec.) 1918.

[9] Hopkins, F. G., and Chick, H.: Report on the Present State of Knowledge Concerning Accessory Food Factors (Vitamines), Medical Research Committee Special Report, 1919, Series 38.

[10] Hess, A. F., and Unger, L. J.: The Clinical Rôle of the Fat-Soluble Vitamin: Its Relation to Rickets, J. A. M. A. **74**: 217 (Jan. 24) 1920.

[11] Hess, A. F., and Unger, L. J.: An Interpretation of the Seasonal Variation of Rickets, Am. J. Dis. Child. **22**: 186 (Aug.) 1921.

[12] Hess, A. F.; McCann, G., and Pappenheimer, A. W.: Experimental Rickets in Rats, II, The Failure of Rats to Develop Rickets on a Diet Deficient in Vitamine A, J. Biol. Chem. **47**: 395 (July) 1921.

[13] Shipley, P. G.; McCollum, E. V., and Simmonds, Nina: Studies in Experimental Rickets, IX, Lesions in the Bones of Rats Suffering from Uncomplicated Beriberi, J. Biol. Chem. **49**: 399 (Dec.) 1921.

[14] Korenchevsky, V.: Experimental Rickets in Rats, Brit. M. J. **2**: 547 (Oct. 8) 1921.

[15] Mackay, H. M.: Effect on Kittens of a Diet Deficient in Animal Fat, Biochem. J. **15**: 19, 1921.

[16] Tozer, F. M.: Effect on the Guinea-Pig of Deprivation of Vitamine A and of the Antiscorbutic Factor, J. Path. & Bacteriol. **24**: 306 (July) 1921.

[17] Zilva, S. S.; Golding, J.; Drummond, J. C., and Coward, K. H.: The Relation of the Fat-Soluble Factor to Rickets and Growth in Pigs, Biochem. J. **15**: 427, 1921.

[18] Zilva, S. S., and Miura, M.: The Quantitative Estimation of the Fat-Soluble Factor, Biochem. J. **15**: 654, 1921.

[19] It is probable that cod liver oil, like other unstandardized biologic products, should not be regarded as a fixed chemical or physiologic entity, but that its potency varies considerably.

I shall not consider the chemical aspect of this subject. It is premature to express an opinion as to the character of the potent factor in cod liver oil and in the animal fats. It is claimed by many that vitamin A is very susceptible to destruction by heat, especially when oxidation occurs simultaneously. In this connection, the recent work of Zucker and his associates[20] may be called to mind. These investigators succeeded in extracting from cod liver oil a substance almost 100 times as potent as the original oil, although in the course of the manipulations the oil was subjected to boiling many hours in an open vessel and in the presence of a strong alkali.

Numerous experiments, as stated, have shown that animals deprived of the fat-soluble vitamin develop osteoporosis of the bone. This lesion is associated with a retardation of growth in growing animals, and may bear a direct relationship to a deficiency of this vitamin. Undoubtedly, osteoporotic lesions have been regarded as rachitic, and herein lies one explanation for the difference in interpretation of the effect of inadequacies of diet. Another source of error has been the fact that until very recently no attention was paid to the amount of sunlight which the experimental animals received, whether they were housed in dark or in well lighted quarters. We now realize the importance of controlling the degree of light, and a perusal of the literature indicates that some of the inconsistent and discordant results may have been due to leaving this factor out of consideration.

THE RÔLE OF PHOSPHORUS

As regards the metabolism in infantile rickets, the greatest attention until recently has been focused on the calcium ion. It is true that the intake, excretion and balance of phosphorus have been considered in many studies, but with few exceptions this salt has been relegated to a secondary position. Now that animal experiments have brought a realization of the significance of phosphorus, it is difficult to understand why it had not been regarded as of equal importance to calcium in the nutrition of bone, for phosphorus forms one of the most important constituents of bone, and woman's milk as well as cow's milk contains it in high percentage. It is unnecessary to review in detail the experiments of the past year in relation to the rôle of phosphorus in experimental rickets. About a year ago, as has been stated, it was shown independently by two groups of investigators that rickets could be brought about without fail in rats by a diet adequate in calcium but deficient in phosphorus. The diet of Sherman and Pappenheimer contains 0.4 per cent.—about 86 mg. per hundred grams of diet—of phosphorus in the form of secondary potassium phosphate.[21] An addition of from 50 to 75 mg. per cent. of phosphorus is sufficient invariably to afford protection, to change the diet to a nonrickets producing food. So responsive is the rat to the amount of phosphorus in this diet that different degrees of rickets can be produced at will by varying the phosphorus intake. The rachitic lesions have been confirmed during life by roentgenograms of the epiphyses, and postmortem by histologic examination. Although osteoporosis developed frequently in spite of the addition of an adequate amount of phosphorus, rachitic lesions were in all instances absent.

Viewing these experiments in the light of clinical experience, it is evident that they cannot indicate—nor have they been so interpreted—that the development of rickets in infants is merely dependent on an adequate phosphorus supply. Unfortunately, data as to the phosphorus requirement of infants are inadequate to determine this question. The very fact, however, that woman's milk contains only about one-fifth as much phosphorus as cow's milk, and that rickets is of far less frequent occurrence among nursing than among bottle-fed babies, indicates that the phosphorus intake does not play the deciding rôle; even the extreme dilution of cow's milk by one-half does not reduce its phosphorus content to that of woman's milk. A review of diets on which rickets has developed fully bears out this conclusion. On estimating the phosphorus intake of infants who developed rickets on various standard diets, and comparing this intake with that of infants on similar diets who showed no signs of rickets, no distinction as to phosphorus or as to the calcium phosphorus ratio could be observed. It was found, moreover, that some infants developed rickets on dried milk, while others fed on milk of the same lot manifested no signs of rickets either clinically or by roentgen ray. It is evident, therefore, that the problem in infantile rickets is not so simple as might appear from investigations on rat rickets, in which the diet is reduced to simple components. It should be remembered that, in spite of years of clinical observation, no diet has been noted which leads to rickets in infants.

That phosphorus is an important factor in the rickets of infants, as well as in that of rats, follows from the observations, previously referred to, showing that the content of inorganic phosphate in the blood is generally low in infantile rickets.[7] Using the method of Doisy and Bell, the normal content of inorganic phosphate was found to be about 4.0 to 4.5 mg. per hundred cubic centimeters of blood, decreasing in the mild rickets which we observed to about 3 to 3.75 mg. per cent.[22] Since the preliminary work of last year, routine blood examinations have been carried out on infants who were receiving standard diets, in order to ascertain the relationship of blood phosphate to the early development of rickets as well as to diet.[23] I shall not enter into the details of this study, but it may be stated that, in general, it was found that clinical rickets may precede a decrease in the inorganic phosphate of the blood, but that the later roentgen-ray signs were accompanied usually by low blood phosphate; furthermore, that the blood of infants apparently free from rickets, according to all recognized signs and symptoms, may be low in inorganic phosphate. In other words, although the inorganic phosphate is generally lowered in rickets, there seems to be a factor unaccompanied by rickets which likewise determines its level. For example, some infants who were receiving from 24 to 32 ounces (710 to 946 c.c.) a day of raw cow's milk had more than 4 mg. per cent. of inorganic phosphate in the blood, whereas some others receiving protein milk—and likewise showing no evidences of rickets—had a blood phosphate content of about 3.7 per cent. The difference in inorganic phosphate evidently was due to a difference in the nature of the food. Not that the latter furnished an inadequate amount of phosphorus, for analysis showed it to contain 0.104 per cent. phosphorus (as phosphoric acid), fully twice as much as human milk, but the form or association was such as to render it incompletely available. Until we know the factors which influence the absorption and retention of phosphorus, it will be impossible to judge the rôle of phosphorus in the various diets of infants. The work of Moll,[24] confirmed by others, showing that breast-fed infants excrete far less phosphorus in the urine than those which are bottle-fed, and, furthermore, that one of the earliest signs of intestinal indigestion is an increased excretion of phosphorus, indicates both the importance of the medium in which the phosphorus is supplied and the possibility of disturbing factors in the intermediary metabolism.

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[20] Zucker, T. F.; Pappenheimer, A. W., and Barnett, M.: Observations on Cod Liver Oil and Rickets, Proc. Soc. Exper. Biol. & Med., January, 1922, p. 1919.

[21] The constitution of this diet (No. 84) is: patent flour, 95.0; calcium lactate, 2.9; sodium chlorid, 2.0, and ferric citrate, 0.1 per cent.

[22] Hess, A. F., and Gutman, Margaret B.: The Cure of Infantile Rickets by Sunlight Accompanied by an Increase in the Inorganic Phosphate of the Blood, J. A. M. A. **78**: 29 (Jan. 7) 1922.

[23] As the use of oxalate in this test was found at times disturbing, it was discontinued and the blood was collected simply in paraffined tubes and then laked.

Experimental rickets in rats tends to confirm the conclusion that, although a low inorganic phosphate content of the blood generally accompanies rickets, this change does not necessarily indicate the presence of this disorder. Rats which are fed the standard rickets-producing diet, but which are protected from rickets by light rays—manifesting no rickets either by roentgen ray or on microscopic examination of the bones—have a lowered percentage of inorganic phosphate in their blood. Instead of 6 mg. or more of inorganic phosphate per hundred cubic centimeters of blood, they have about 4 mg. In other words, the blood reflects the deficiency of phosphate in the diet in spite of the protection afforded by light.

Animal experiments emphasized an aspect which has been disregarded in considering infantile rickets, namely, that the requirement of phosphorus (and probably of calcium as well) bears a direct and important relationship not only to body weight and to age but also to rate of growth. This does not refer merely to the theoretical growth of the age period, but to the rate which the animal manifests at the particular time. This may be illustrated by two sets of experiments. For example, whereas increasing the phosphorus to about 150 mg. per cent., in the diet which we have employed as a routine, suffices to protect rats from rickets, this amount fails to protect when the diet is so modified as to induce increased growth. To illustrate the reverse phenomenon, the occurrence of spontaneous healing may be cited. When rats are fed on the rigid rickets-producing diet (No. 84), spontaneous healing does not occur; but when 25 mg. per cent. of phosphorus is added, although the rats develop rickets, they will show spontaneous healing when their rate of growth is less rapid, and the demand for phosphorus is reduced (Table 1). Such experiments demonstrate that the phosphorus requirement of a growing individual is labile, that a supply which is adequate may shortly become inadequate, or, on the other hand, that a supply which is inadequate may be rendered adequate simply by a diminished rate of growth.

THE FACTOR OF LIGHT

For centuries, physicians have discussed whether faulty diet or hygiene is the etiologic factor in rickets. The pendulum has swung first in one direction and then in the other, swayed by the authority and prestige of individuals rather than by objective evidence. Not many years ago, the popular theory was that of Kassowitz, who believed that rickets is due to breathing the noxious gases of badly ventilated rooms. More recently the rôle of hygiene has been regarded as almost negligible, and diet as all important, owing to the realization of the significance of diet in nutrition and following the report of Mellanby and its wide acceptance by investigators and by the medical profession. A notable exception in this regard has been the unswerving contention of Findlay [25] that faulty hygiene—an inadequate supply of fresh air and exercise—is the dominant factor. Today, the influence of hygiene in the etiology of rickets is firmly established, and, although comprising possibly several elements, has been shown to be identified largely with an adequate supply of sunlight. It is true that this conception is not new. It has been mentioned from time to time by various writers, and some years ago was stressed particularly by Palm;[26] but heretofore the evidence was merely suggestive and the possibility was ever present that diet might have been involved. Recently, Huldschinsky [27] has shown that infantile rickets can be cured by the rays of the mercury vapor quartz lamp. As stated elsewhere, Unger and myself made use of these rays in 1918 for this purpose, but failed to obtain definite results, as the healing process could not be followed by means of roentgenograms.[9] For the past year we have employed direct sunlight as a therapeutic measure, and have found it most efficacious.[28] It would lead too far afield to discuss the use of heliotherapy in rickets; suffice it to state that the rays must impinge directly on the skin, and that the curative effect has been demonstrated by clinical examination, by roentgenograms of the epiphyses, and by an increase in the inorganic phosphate of the blood. It is a systemic measure and not a local one, affecting tissues which have not been exposed to the rays, just as chlorophyl develops in the parts of plants which lie

TABLE 1.—SPONTANEOUS HEALING OF RICKETS IN RATS

Wt., Gm.	Diet	Roentgen-Ray Diagnosis 18 Days	32 Days	48 Days	62 Days	72 Days	Path.	Inorg. P.
44-50	84*	......	R.	Marked R.	Marked R.	....	Marked R.	
48-60	84*	R.	Marked R.	Very Marked R.	....	Marked R.	Marked R.	2.35
40-50	84*	R.	Marked R.	Very Marked R.	....	+	R. R.	
36-50	84 + 25 mg. P. (K_2HPO_4)	Sl. R.	Mod. R.	Neg.	....	Healed	Neg.	3.46
40-50	84 + 25 mg. P. (K_2HPO_4)	R.	Mod. R.	Healing	....	Healed	Neg.	3.0
38-60	84 + 25 mg. P. (K_2HPO_4)	Sl. R.	Sl. R.	Healing	....	Healed	Neg.	3.75
40-54	84 + 25 mg. P. (K_2HPO_4)	Sl. R.	Mod. R.	Healing	....	Healed	Neg.	

* Rachitic diet.

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[24] Moll, L.: Die klinische Bedeutung der Phosphorauscheidung im Harn beim Brustkind, Jahrb. f. Kinderh. **69**: 129, 304, 450, 1909.

[25] Findlay, L.: Diet as a Factor in the Cause of Rickets, Arch. Pediat. **38**: 151 (March) 1921.

[26] Palm, T. A.: The Geographical Distribution and Aetiology of Rickets, Practitioner **45**: 271, 321, 1890.

[27] Huldschinsky, K.: Die Behandlung der Rachitis durch Ultraviolettbestrahlung, Ztschr. f. orthop. Chir. **39**: 426 (May) 1920.

[28] Hess, A. F., and Unger, L. J.: The Cure of Rickets by Sunlight, Proc. Soc. Exper. Biol. & Med. **18**: 298 (May) 1921; J. A. M. A. **77**: 39 (July 2) 1921.

outside the field of the sun's radiations. These clinical results, which indicate the importance of hygiene in relation to rickets, have been fully substantiated in the laboratory by the work of Hess, Unger and Pappenheimer,[29] and by that of Powers and Park and their associates.[30] These investigators found that when rats are fed a rickets-producing diet they can be regularly prevented from developing this disorder by short and frequent exposures to the sun's rays.

TABLE 2.—ULTRAVIOLET RADIATION—WHITE AND BLACK RATS

	Weight, Gm.	Ultraviolet Ray	Diet*	Roentgen Ray	Path.	Inorg. P.
White...........	70-70	1 min.	84	Neg.	Neg.	
White...........	58-60	1 min.	84	Neg.	Neg.	
White...........	60-70	1 min.	84	Neg.	Neg.	
White...........	62-70	1½ min.	84	Neg.	Neg.	
White...........	60-80	1½ min.	84	Neg.	Neg.	5.45
White...........	64-70	1½ min.	84	Neg.	Neg.	4.44
Black...........	50-60	1 min.	84	R.	R.	
Black...........	50-60	1 min.	84	R.	R.	
Black...........	60-58	1 min.	84	R.	R.	
Black...........	50-50	1½ min.	84	R.	R.	2.92
Black...........	48-54	1½ min.	84	R.	R.	3.00
Black...........	60-60	1½ min.	84	R.	R.	

* Rachitic diet, containing about 86 mg. per cent. of phosphorus.

Although it is now established clinically and experimentally that sunlight is concerned in the development of rickets, its significance is variously assessed. Some are of the opinion that its function is quite secondary and unimportant. It is a difficult aspect to discuss at present, but should be considered on account of its importance in preventive medicine and of its sociological aspects. In studying this question, one must constantly bear in mind that rickets is preeminently a seasonal disorder; that it is characterized by a striking seasonal variation. Clinicians as well as pathologists are in complete agreement as to its marked incidence in the winter and spring, and comparative rarity in the summer. It is our experience, acquired in the course of many years of institutional practice, that three quarters of the cases of rickets develop during the first half of the calendar year, and but one-quarter during the second half, and that almost all of the latter are observed in late November and in December. This seasonal factor is climatic, not dietetic, and due almost entirely to a lack of sunlight.[31] It may be suggested that a deficiency of sunlight is merely the fulminating or precipitating factor, bringing to evidence pre-existing rickets that has resulted from faulty diet. This raises a knotty question. There is no doubt that rickets is not only a hygienic but also a dietetic disorder, a point of view which is amply demonstrated by animal experiments. Rats fed an ideal diet do not develop rickets when kept in the dark; whether such would be the case with infants who received an ideal diet—adequate nursing—can be only surmised. However this may be, it should be remembered that a large proportion of the infants in our large cities are not nursed but bottle-fed, which means that they do not obtain a diet which, from a chemical standpoint, is correctly constituted. Considered as a group, they require an adjuvant to protect them from rickets. The question of the etiologic importance of light cannot be considered, therefore, by itself, but must be surveyed in relation to the reciprocal factor of diet. We shall see that there are a least two other determinants which play a rôle in relation to light—rate of growth and pigmentation of the skin.

Animal experiments well illustrate the close relationship between light and diet in the etiology of rickets. The diet remaining constant—standard rickets-producing diet—rickets will either develop or not according to the dosage of light. For example, it was found that raying for two minutes daily with the mercury vapor lamp, at a distance of 3 feet, afforded protection, whereas one minute was insufficient; four minutes sufficed when a carbon arc lamp was used at this distance, but two minutes did not suffice; direct sunlight for fifteen minutes daily was protective, but reflected sunlight for the same length of time afforded incomplete protection. A similar reciprocal relationship can be observed when the degree of light remains constant, but the rickets-producing intensity of the diet is altered. For example, if the standard diet is employed, short exposures to light have been found insufficient, whereas when 25 mg. per cent. of phosphorus is added to this dietary, the same degree of light afforded protection. There can be little doubt that the same cooperative or reciprocal relationship between light and diet prevails in regard to infantile rickets. The marked incidence of rickets in the early spring must be interpreted as indicating that during the winter the light factor ceased to perform its share of the protective work.

It is true of light, as of phosphorus and probably of other dietary factors, that requirement bears a direct relationship to rate of growth. Numerous animal experiments could be cited to illustrate this point; for example: On the Sherman and Pappenheimer diet a standard degree of light—raying of four minutes daily with the carbon arc lamp at a distance of 3 feet—will invariably protect rats from rickets; on this diet the rats grow poorly. When, however, this diet is so altered as to lead to progressive growth, the same degree of irradiation will fail to protect against rickets. Indeed, when there are among the group receiving the amplified diet some animals which have grown poorly, they either fail to develop rickets or manifest it mildly. If we translate this phenomenon into terms of clinical medicine, it signifies that the atrophic or marasmic infant—notably unsusceptible to rickets—has, in relation to this disorder, a far less requirement of the active light rays than the rapidly growing normal infant.

A third factor affecting the potency of light is the intensity of pigmentation of the skin. This aspect also can be demonstrated by a simple experiment. If two groups of rats, one composed of white rats and the other of black rats (the melanotic form of the Norway rat), are given the minimal protective dose of light, it will be found that although diet and rate of growth have been the same, the black rats will develop rickets, whereas the white rats will show no rachitic lesions. Table 2 reproduces the results of roentgenograms and gross and microscopic examinations of two groups of rats subjected to a test of this kind. It is manifest that the protective rays were rendered inert by the integumentary pigment. This experiment has a direct application to the well recognized susceptibility of negro infants to rickets. Some years ago, in the course of a study of the prophylactic value of cod liver oil in a negro district of this city,[6] it was found that the majority of breast-fed infants and almost all the bottle-fed infants showed clinical signs of rickets. In regard to the breast-fed infants, the rickets may be interpreted by some as due to the faulty dietary of the mother.[32] As regards the bottle-fed infants, the dominating factor cannot have been dietetic, for these children obtained bottled milk from the same dairies as thousands of other children in this city. The main distinction is—as demonstrated by the animal experiment—that colored infants require a greater degree of the effective light rays than do white infants. That they possess no racial predisposition to rickets is evidenced by their freedom from this disorder in their native homes in the West Indies. The darkness of the skin is, no doubt, a predisposing factor, also, in the susceptibility of the southern Italian, the Syrian and other southern races. These statements do not imply that susceptibility is merely a question of degree of pigmentation of the skin, but rather that light is an important etiologic factor in rickets and that, in turn, pigment is an important factor in determining the efficacy of light. How great the importance of light is cannot be definitely stated, for, as has been shown, this differs according to the diet, to the rate of growth and to the degree of pigmentation of the skin. It is evident, therefore, that its relative importance must vary among different races, in different countries according to the dietary, in cities according to environmental conditions, and in different families according to the domestic regimen.

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[29] Hess, A. F.: Unger, L. J., and Pappenheimer, A. W.: The Prevention of Rickets in Rats by Exposure to Sunlight, Proc. Soc. Exper. Biol. & Med. **19**: 8 (Oct.) 1921; J. Biol. Chem. **1**: 77 (Jan.) 1922.

[30] Powers, G. F.; Park, E. A.: Shipley, P. G.; McCollum, E. V., and Simmonds, Nina: The Prevention of the Development of Rickets in Rats by Sunlight, Proc. Soc. Exper. Biol. & Med. **19**: 43 (Oct.) 1921; J. A. M. A. **78**: 159 (Jan. 21) 1922.

[31] As has been stated, rickets cannot be prevented from developing in the winter by feeding the milk of cows that have been pasture-fed. Moreover, in a mild winter, such as that of 1920-1921, rickets is far less frequent and severe than during a severe winter, such as that of the preceding year.

16 West Eighty-Sixth Street.

TREATMENT OF PYLOROSPASM IN INFANTS

CLIFFORD G. GRULEE, M.D.
CHICAGO

So much has been written on the treatment of congenital pyloric stenosis that one who is not intimately acquainted with obstruction of the pylorus in infancy, or whose experience has not been rather large, may be led to believe that congenital pyloric stenosis is a more frequent and more important condition in infancy than is pylorospasm. I am here assuming that, as I believe, the conditions are distinct clinical entities with similarity in the clinical picture. Certainly it may be said that pylorospasm is several times as frequently encountered as congenital pyloric stenosis. It also is often a very serious and even fatal disease, and its greater frequency, therefore, demands that it should receive as much attention early as does congenital pyloric stenosis.

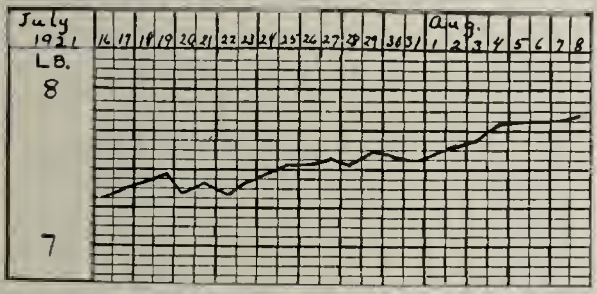

Chart 1.—Weight curve of Clifford G., aged 2 months; severe pylorospasm.

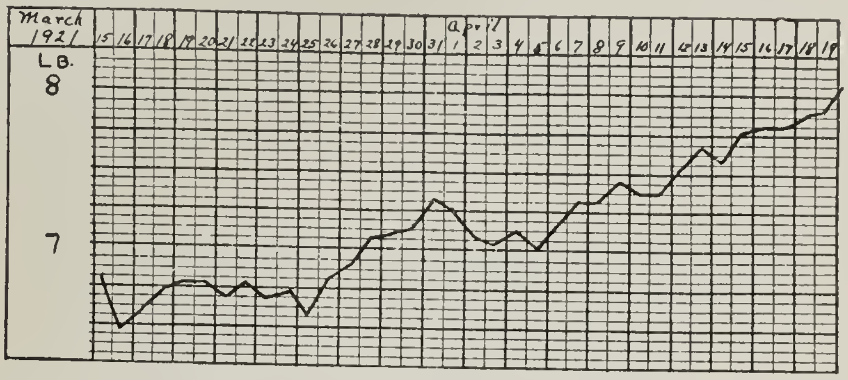

Chart 2.—Weight curve of Eleanor L., aged 10 weeks; severe pylorospasm.

Many authors, especially German, have championed the use of thick cereal feeding in the treatment of pylorospasm. For several reasons this is not an ideal treatment. In the first place, in infants of an age when pylorospasm occurs, it is very difficult to give the thickened food; not only is this true, but the large proportion and actual quantity of starch in the food mixture makes it a food which is not suitable for infants of this age. Together with Dr. Bonar, I have called attention to the fact that children so fed may show serious febrile reaction, sometimes followed by symptoms of shock.

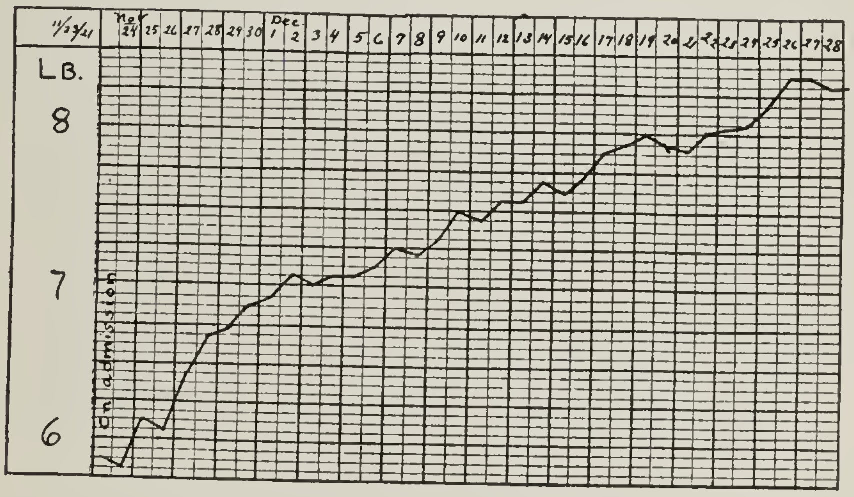

Chart 3.—Weight curve of Hazel D., aged 7 weeks; severe pylorospasm.

For these reasons it would seem that some more physiologic method for caring for these patients might be of value. Provided a treatment is effective, its simplicity is a great recommendation, but we are often led to use simple remedies which are ineffective, when a more careful study of the condition and more tedious and exacting methods of treatment would lead to far better results. After all, the object of treatment is the relief of the patient's condition, no matter how difficult that treatment may be. It is for this reason that it is frequently necessary to carry out the treatment in the hospital rather than in the home; and, if the treatment advised in this instance is such that it can best be carried out only in a hospital, it seems to me that there is no reason either for apology or for complaint.

The indications for treatment in pylorospasm are two: first, to relax the spasm at the pyloric sphincter, and, second, to remove the irritation in the stomach resulting from the accumulation of disintegrated food, which has remained in the stomach as a result of the pyloric closure for a period longer than normal. For the first of these indications, the employment of atropin is to be advised; for the second, the cleansing of the stomach by washing and the giving of food which is adequate but not irritating. One must remember that in this condition there is no gastro-enteritis or disturbance of metabolism, only starvation due to the failure of food to pass the pylorus. It is not necessary, therefore, to give a food such as one would give were the condition due to some disturbance of digestion or internal metabolism. With these facts in mind, I have carried out successfully the following method of treatment: Atropin is administered hypodermically to the quantity of from $\frac{1}{1000}$ to $\frac{1}{500}$ grain fifteen minutes before each feeding. Before the food is given, the stomach is carefully washed until the washings return clear. The food is then given through the tube before it is withdrawn. The food given in these instances is practically always a mixture of albumin milk and a dextrin-maltose combination, a quantity sufficient to meet the needs of a child of like age and weight without gastro-intestinal disturbance.

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[32] In New York City, and other large cities in the United States, rickets is most prevalent among the negroes and the Italians. It may therefore be of interest to note the peculiarities of diet of these races and the frequency of breast feeding. The diet of the negro mother is characterized by a large amount of carbohydrate and a small amount of fresh vegetables. The diet of the Italian is characterized also by a large quantity of carbohydrate, but an exceptionally large quantity of fresh vegetables. A smaller percentage of the negro babies and a larger percentage of Italian babies are nursed than those of almost any other nationality in the city. It seems impossible to correlate the incidence of rickets in these races solely with idiosyncrasies of diet.

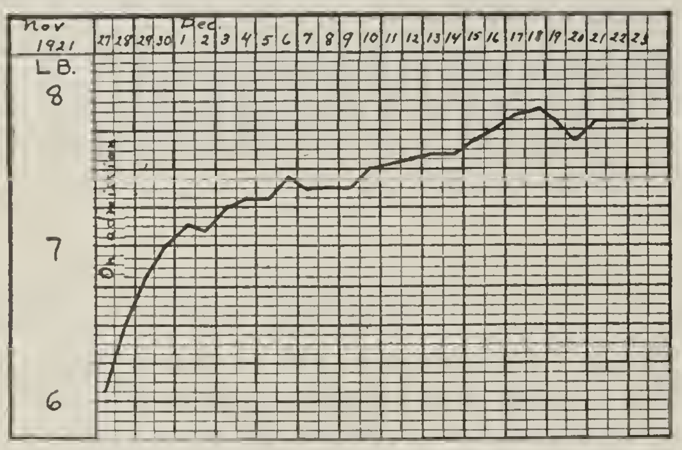

Chart 4.—Weight curve of Mary O., aged 7 weeks; severe pylorospasm.

When the pylorospasm develops in a breast-fed baby, the child is allowed to nurse after the stomach washing. In breast-fed infants the results have not been as striking as in those artificially fed. It has never been thought wise, however, to discontinue breast nursing for this reason.

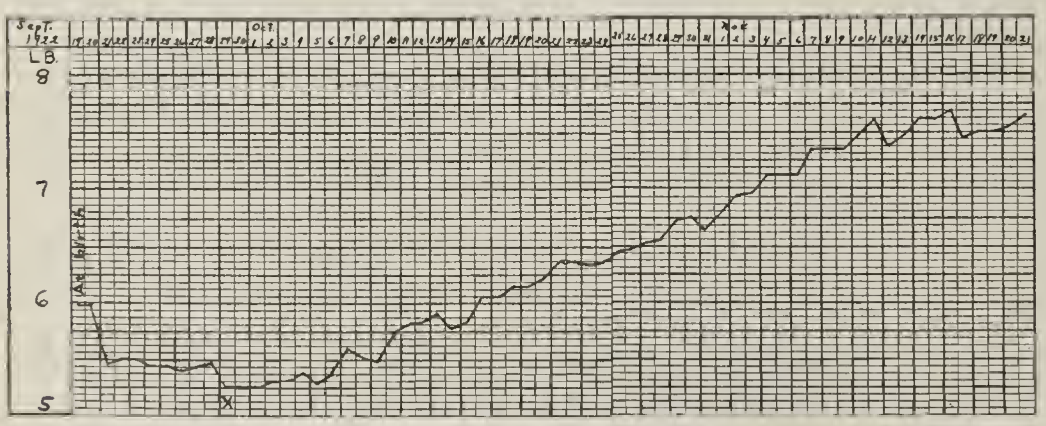

Chart 5.—Weight curve of Infant S. from birth on; severe pylorospasm; treatment began at *X*.

Within from two to three days after the institution of this treatment, in nearly all cases the vomiting ceases entirely, or there is only a slight regurgitation. The weight curve usually goes up immediately, and the general condition of the child improves. The treatment must be continued over a varying length of time in different cases. The average case will require from two to three weeks. One can determine in a given case whether or not he is approaching a cure by stopping the stomach washings for two or three feedings each day. If there is not return of vomiting, then all stomach washings may be stopped. There is also a gradual reduction in atropin until all atropin administration ceases. The results which may be obtained are to be seen from the accompanying weight curves of five consecutive patients treated.

104 South Michigan Avenue.

TYPHOID CARRIER EPIDEMIC

WITH SPECIAL REFERENCE TO THE PERIOD OF INCUBATION *

ROGER G. PERKINS, M.D.
CLEVELAND

In July, 1920, a sudden outbreak of typhoid in two of the most sanitary suburbs, at opposite ends of Cleveland, was brought to my attention. Both these districts had long been free from typhoid, and all the general central causes were absent. Many of the patients had not even been away, nor outside the area of the Cleveland water supply, and the rest of the city was almost free from typhoid.

All the cases were in women, and the only point of contact for the whole group was a luncheon at a private house in one of these suburbs, which had been attended by 200 women, June 25. Forty-one of these developed typhoid within the usual incubation period, and one of the attendants was also taken down with that disease. This gives an unusual incidence of nearly 20 per cent., showing that the infection must have been massive in character, but the mortality of three, or about 7.5 per cent., shows that the virulence was average.

At the time the outbreak came to light, it was too late to get any of the food supplies that had been used at the luncheon, but the sources were ascertained and it was found that all the materials came from well-known places, and that no cases of infection had occurred in any of the other customers of these shops.

Examinations of the dejecta of all who had been concerned in handling the food were made at the Cleveland Health Division Laboratories, and it was found that one of the caterer's attendants had large numbers of typhoid bacilli in the stools, but none in the urine. Two weeks later another test gave the same results. As the inmates of the house where the lunch was given were infected at the same time as their guests, it is clear that they could not have been concerned.

While it is rarely possible after an interval of several weeks has passed to feel certain as to the identity of the actual material in which the organisms were distributed, it seems probable that the salad dressing, which was prepared by the carrier, was the substance at fault. One woman stated that she never ate lettuce, but all the rest of the forty-one had eaten more or less salad.

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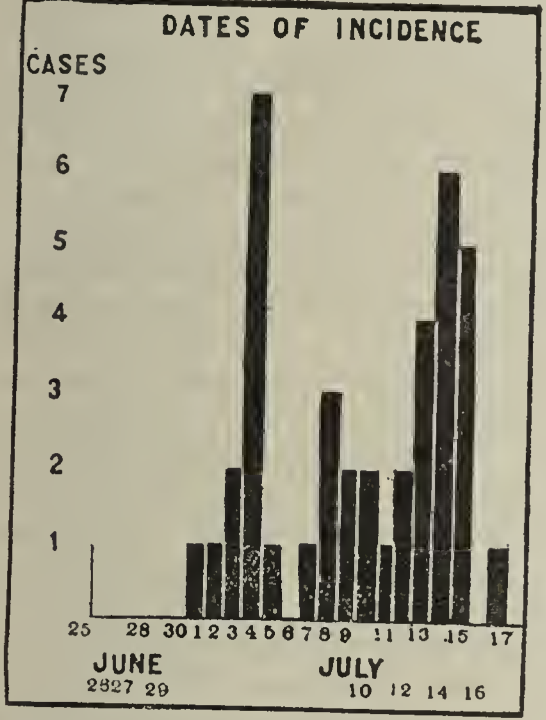
* From the Laboratory of Hygiene and Bacteriology, Western Reserve University School of Medicine.

The carrier gave no history of typhoid or of any illness that was suggestive of that disease, and had been in the catering business for many years, during which period no cases had been laid to her door. It must be remembered, however, that in former days there was a much higher incidence of typhoid in Cleveland and the vicinity, owing to unsatisfactory conditions which have since been removed in great part. It is possible, therefore, that a reasonable number of scattering cases in which the etiology was not carefully followed up might have been actually due to infection from her. Moreover, in the absence of any history of typhoid, it is impossible to say when her own infection took place. Her habits were extremely cleanly, and it seems probable that some unusual circumstance occurred to cause the massive infection of the food.



Relation of incidence to incubation period.

Aside from the actual fixing of the responsibility, and the unusually high incidence among those attending the luncheon, the point of greatest interest lies in the period of incubation. It was possible by letters and interviews with the patients and their physicians to establish a very definite date of onset in each case, and when these are tabulated the graph is rather peculiar.

The period of incubation of typhoid is given as from seven to twenty-three days, and usually from twelve to fourteen. Cases of much shorter incubation are also on record, usually in laboratory infections in which more or less of an actual culture is swallowed by some one working with it. Longer periods are also on record, but in general any epidemic is found to conform approximately to these figures. The present series runs from the sixth to the twenty-second day after infection, but both the time groups into which the largest numbers fall lie at the extremes rather than at the mean. Beginning with one case on the sixth day, one on the seventh, two on the eighth, and seven on the ninth day, there is a marked slowing down through the middle period, with five a day on the eighteenth, nineteenth and twentieth days, marking the end of the epidemic, as there was but one subsequent case, on the twenty-second day. The early group would seem to indicate a massive infection, as would the large total incidence, and it would have been interesting to know the actual amount of the infected food eaten by the individual patients. The reasons for the formation of these three groups can only be surmised, and the main interest is for typhoid epidemiologists who must decide which cases are due to local conditions and which may fairly be considered as imported. Customs vary in different places, but it is a general rule that cases developing within two weeks after arrival are set aside as imported. This rule, if used in the present series, would have excluded eighteen cases, or nearly half, a very notable error. On the other hand, the acceptance of cases in which the patients have lived in any community two weeks as being infected in that community is similarly at fault. In any large series of cases there would accordingly be a certain balancing of error, and with that the statistician may console himself. It is probable, also, from statistics in general, that the cases occurring within ten days after infection are sufficiently in the minority to reduce the percentage of error.

A point to be considered in connection with this large percentage of incidence is that all the persons exposed were women, and that there is at present an unusually large percentage of men still more or less protected as a sequence of the war. A similar degree of infection of the food in a group equally divided as to the sexes might have had a very different effect.

There should be a definite standard established on the basis of which the community responsibility for individual cases could be estimated. At present some communities take responsibility for all cases reported to the health department, others refuse responsibility for patients who have been away even for a day or so within the extreme incubation period, while still others pursue a middle course. This causes unfairness, and while the present article shows that no absolute accuracy can be hoped for, at least the basis would be the same for all, and there would be a greater tendency for the errors to neutralize one another.

ABSENCE OF CORPORA LUTEA IN A CASE OF ATYPICAL UTERINE HEMORRHAGE

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The normal periodic bleeding from the uterus has been accepted as dependent on an internal secretion. The ovaries, we now know, are absolutely essential for this normal process, menstruation. Just which anatomic structure in the ovary is the determinant has not as yet been settled. Some authors state that menstruation may occur without ovulation, and that ovulation can occur without menstruation. The latter is easy of proof, for it is well known that women who are lactating but not menstruating can conceive. Bound up closely with this question is that of the function of the corpus luteum, which structure depends for its existence on normal ovulation. Various opinions are held as to its function. The commonly accepted mechanism may be thus outlined: Immediately after the rupture of the normal graafian follicle, the development of a corpus luteum begins. The organ, as it ripens, inhibits bleeding, but produces some secretion which prepares the mucosa for the menstrual flow. At the height of its development, the mucosa responds by the typical premenstrual hypertrophy. As the corpus luteum regresses, the inhibitory influence is removed and bleeding begins. Frankel believes that the activity and not the regression of the corpus luteum causes the menstrual bleeding, and quotes his experimental work to substantiate his theory. He destroyed the corpora lutea by the actual cautery, and the succeeding menstruation did not appear.

Halban, on the other hand, removed the corpus luteum, and menstruation set in three or four days later and again one month later, showing that the first postoperative bleeding was a definite menstrual period. There were no control examinations of the stage of the mucosa.

Other authors and experiments can be quoted, some supporting Frankel and some Halban. The one definite fact that can be accepted is that the corpus luteum is associated with the menstrual function.

The case here reported is of interest as it tends to show that there is a relation between the corpus luteum and the pathologic bleeding from the uterus not associated with tumors.

REPORT OF CASE

N. B., aged 28, complained of periods of amenorrhea and menorrhagia alternating for the last one and one-half years. Menstruation began at 12 years of age. It was always irregular, coming on after intervals of from five to eight weeks and lasting from five to twelve days; it was rather profuse, but not associated with pain. She had been married eleven years, and had four children, aged 10, 8, 7 and 4 years, and one premature child at 8 months, two years before I saw her. During her married life she had had very few periods, as she was either pregnant or lactating.

About eighteen months before, she had a period of amenorrhea lasting six months. Bleeding then began, and persisted for two months, when she was curetted. This was followed by seven months of amenorrhea and three months of menorrhagia. There were no signs of pregnancy associated with either period of amenorrhea. On admission to the hospital, physical examination was negative, but she refused any operative interference and left. She returned nine months later with a history of five months of amenorrhea and a period of menorrhagia lasting four months.

Local physical examination revealed a moderate cystorectocele, the uterus of normal size, the cervix lacerated, and the os patulous and bleeding.

A supravaginal hysterectomy and bilateral salpingo-oophorectomy were performed. The uterus was about normal in size. The endometrium was hyperplastic and edematous. The ovaries were enlarged to twice the normal size, and were hard and white, with a markedly thickened albuginea. On section, the entire circumference under the tunica was studded with small cysts from 2 to 5 mm. in diameter. There were no larger cysts and no corpora lutea to be seen. Histologic examination of the uterine mucosa disclosed the hyperplasia that is usually found in cases of pathologic uterine hemorrhage of endocrine origin, i. e., edematous stroma, with some swelling of the cells, and tortuous, elongated and cystic glands. The ovaries showed a marked condensation of the stroma, it being of a very fibrotic character. There were a few epithelial lined cavities deep in the rete which represented embryonal structures. The vessels showed marked hyalinization of the walls.

The region just below the tunica presented numerous cystic atretic follicles, none of which contained ova, but in some of which the theca cells showed a swelling and proliferation, suggesting here and there a resemblance to the interstitial gland seen in rabbit's ovaries. There were numerous primordial follicles and a few maturing follicles. The ovaries were carefully sectioned serially to ascertain whether there were any corpora lutea or their scars present. All that could be found was a remnant of the regressive corpus luteum, hyaline and fibrous, undoubtedly a functionless structure.

COMMENT

Here, it would seem, is an indication pointing to the fact that in the absence of a functioning corpus luteum one may have persistent uterine hemorrhage. In most instances of so-called essential uterine hemorrhage, of which this seems to be an example, there has been found either a microcystic disease of the ovary, as in this case, but usually associated with small corpus luteum cysts or other types of hemorrhagic cysts, and a large, well developed corpus luteum.

The findings in this case would seem to add weight to the view of Halban that removal or absence of the corpus luteum results in uterine hemorrhage. Whether that is due to the fact that the corpus luteum acts to inhibit the bleeding, or because its activity prevents for the time being a rupture of mature follicles and so the new development of a corpus luteum, both of which points have been advocated, one cannot say. At any rate, in this particular case we have an atypical uterine bleeding associated with periods of amenorrhea. There are no lesions found in the uterus other than the hypertrophy that is so common in essential hemorrhage. In the ovary, one finds microcystic disease (atretic follicles with marked development of theca internal cells) which may or may not play a rôle in the bleeding. There is an absence of old or new corpora lutea, with the exception of one old hyaline structure apparently functionless, leading to the supposition that the bleeding is due to the absence of an active corpus luteum, or at least is dependent on it.

If menstruation can occur without ovulation, then the corpus luteum, which is dependent for its existence on ovulation, has no influence on normal bleeding. Up to the present this has not been proved, and so in view of the fact that in the absence of a functioning corpus luteum there is pathologic bleeding, I feel justified in concluding that the active corpus luteum inhibits the bleeding, at least in part. With the next ovulation, and a regression of the activity of the old corpus luteum, bleeding starts, to be again inhibited with the renewed development of the just formed corpus luteum, and thus the normal cycle is closed.

True, in this case another striking lesion in the ovary was the microcystic disease in the cortex, and its importance cannot be dismissed. These cysts, furthermore, either alone or in association with the corpus luteum, may play a rôle in determining the profuse atypical bleeding.

Schroeder [1] also reported some cases of menorrhagia and metrorrhagia with an hypertrophied mucosa and no corpora lutea. Schroeder believes, not that the normal period is instituted and the absence of the inhibiting influence of the corpus luteum results in the continued bleeding, but that the bleeding is due to the necrosis of the mucosa. This necrosis is the result of the persistent activity of the follicles that have not ruptured or of the granulosa hormones (?). The mucosa in the case reported by me, however, shows no evidence of thrombosis and a resultant necrosis. Furthermore, the bleeding was much too profuse and prolonged to be due to any small foci of necrosis. It seems that the bleeding in the case reported here is dependent on some perverted secretory influence rather than on small pathologic anatomic lesions.

300 Central Park West.

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[1] Schroeder: Arch. f. Gynäk. **110**: 63, 1919.

PURPURA FULMINANS

REPORT OF CASE

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KANSAS CITY, KAN.

Purpura fulminans is the name given to that variety of purpura characterized by rapid development and great prostration, often resulting in death within twenty-four hours, and with hemorrhages limited to the skin. Case reports conforming to the classical description of this disease are rare. Griffith [1] refers to it as "a very unusual condition seen oftenest in children." Sutton [2] states that it is "exceedingly rare" and that the "majority of reported cases have occurred in children." Pratt [3] is of the opinion that some of the cases reported as purpura fulminans were other forms of purpura in which death occurred suddenly, probably from cerebral hemorrhage. This author states that the disease usually ends fatally within from eighteen to forty-eight hours, that no patient has recovered, and that the typical cases have been in children.

REPORT OF CASE

J. M., a boy, aged 3 years, one of a family of three children all in good health, was put to bed as usual about 8 or 9 o'clock. About midnight he became ill with pain in the abdomen and vomiting. As an enema and the usual measures failed to give any relief, the family physician was called. The child was in great distress with the symptoms commonly present in intussusception, but no tumor could be felt. The temperature was 101 F. A diffuse, faint rash prompted him to consider scarlet fever, but the mucous membrane of the throat and tongue was anemic.

At 9 the next morning, about nine hours after the onset of the symptoms, I saw the patient in consultation. The mental condition was normal. After the first few minutes of fear and apprehension, the child cooperated in the examination satisfactorily. The body was covered with ecchymotic spots of varying size, the largest being approximately 3 cm. in diameter. The skin between the large ecchymoses was pale and studded with petechiae. On the back and legs, which were in contact with the table, there was a solid hemorrhagic area. The spots were uniformly dark blue. The patient was very toxic. The mucous membrane of the throat and mouth was pale and showed no hemorrhagic spots. The heart was very rapid and weak, and the radial pulse could not be felt. Examination of the lungs revealed only a few coarse mucous râles posteriorly. The abdomen was relaxed, the liver of normal size, and the spleen not palpable. There was no definite area of tenderness, but deep palpation over any part of the abdomen caused pain. Digital examination found the lower bowel empty and no tumor mass. Further examination revealed nothing of interest. The patient died ten minutes after the examination.

Briefly, necropsy revealed the hemorrhages limited to the skin. The liver, spleen and appendix were normal. There was no intussusception. The stomach and intestines were very pale, and simulated the postmortem findings of severe anemia.

COMMENT

This case presents the puzzling problem of etiology. In the textbooks the purpura group is divided etiologically into toxic and infectious. In recent years, attention has been directed to the association of purpura with meningococcic sepsis.

Netter and Mozer [4] found purpura in about 30 per cent. of their cases of meningococcic infection. Herrick [5] is of the opinion that the rapidly developing types of purpura are manifestations of meningococcic sepsis. At the time of this child's illness there were no cerebrospinal meningitis cases under quarantine in the city, and it is highly improbable that this was a sporadic case. Intestinal intoxication from some indiscretion in diet was considered, and we found that the only food out of the ordinary that he had a few days before was some freshly ground sausage. The other members of the family partook of this food without ill effect. Many of the cases reported have occurred during convalescence from scarlet fever.

The danger of mistaking the abdominal symptoms in purpuric disease for intussusception has been mentioned by Osler, Fantozzi,[6] and by Morse and Stone.[7] The latter also found a case of intussusception occurring as a complication of purpura hemorrhagica. The abdominal pain usually attributed to hemorrhage into the viscera is thought by Osler to be due to localized edema of the intestinal wall.

400 Portsmouth Building.

THE SCHOOLCHILD BEFORE AND AFTER TONSIL AND ADENOID REMOVAL

LITTLETON DAVIS, M.D.
ROANOKE, VA.

After two years' observation and the recording of nose and throat conditions in schoolchildren, I was impressed by the large number of children showing pronounced enlargement of the cervical lymph glands and poor nose breathing, although their adenoids and tonsils have been skilfully and completely removed.

At the third yearly examination of these children, I decided to tabulate findings in the pronounced tonsil and adenoid cases, and in those children whose tonsils and adenoids had been removed, with particular reference to the breathing, enlarged cervical glands and the heart.

To determine whether time and the natural development of the child have any effect on these growths, the children were divided into two main groups. Group 1 comprised about 6,000 children, from 6 to 12 or 14 years old, and Group 2 included about 1,500 children, from 12 to 18. From each of these groups were taken the children with enlarged tonsils and adenoids, and the children who had been operated on for removal. Only markedly enlarged (obstructing) tonsils and those usually termed diseased or bad tonsils, either with or without adenoids, that is, those referred for operation, were included. Local causes of poor breathing, deviating septum, enlarged turbinates, polyps, "colds," etc., were eliminated as far as possible, and all were given the same routine examination.

Approximately 5 per cent. of the total number of children had been operated on for removal, from each group. Operations were done at from a few months to six or eight years prior to examination.

In Group 1, children mostly under 12 and all over 6 years old, there were recorded 450 pronounced tonsil and adenoid cases, about 7.5 per cent. of the total number examined. One hundred, or 22 per cent., of this number, had enlarged cervical glands, and nine, or 2 per cent., had cardiac murmurs at the apex. All the children with enlarged adenoids were bad breathers.

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[1] Griffith, J. P. C.: The Diseases of Infants and Children, Philadelphia, W. B. Saunders Company, 1919.

[2] Sutton, R. L.: Diseases of the Skin, St. Louis, C. V. Mosby Company, 1921.

[3] Pratt, in Osler's Modern Medicine **4**: 711, 1908.

[4] Netter, A., and Mozer, M.: Bull. et. mém. Soc. méd. d. hôp. de Paris **42**: 773 (July 19) 1918; abstr. J. A. M. A. **71**: 1864 (July 19) 1918.

[5] Herrick, W. W.: "Case of Purpura Fulminans," J. A. M. A. **76**: 55 (Jan. 1) 1921.

[6] Fantozzi, G.: Policinico **26**: 281 (Sept.) 1919; abstr. J. A. M. A. **74**: 66 (Jan. 3) 1920.

[7] Morse and Stone: Arch. Pediat. **26**: 287, 1909.

In this group there were 296 children who had had tonsils and adenoids removed, with breathing good in 132, or 44 per cent.; fair in sixty-seven, or 22 per cent., and poor in ninety-seven, or 34 per cent. Of these 296 children 114, or 38 per cent., had enlarged cervical lymph glands, and ten, or 3.5 per cent., had apical heart murmurs.

In explanation of some of these findings, a large number of the children had varying degrees of gland tissue proliferation in the pharynx and about the tonsil spaces. Some gave undoubted signs of syphilis. Some were asthmatic and subject to recurrent bronchitis and irritation of the upper respiratory tracts, and others were eczematous.

Group 2, taken from 1,500 children, aged from 12 to 18 years, who were promoted from the lower grades of Group 1 to the upper high school grades, is especially interesting because it should show the final outcome or end-results of the tonsil and adenoid conditions found in Group 1.

From Group 2 there were twenty-one children referred for operations. This is about 1.5 per cent., as compared with 7.5 per cent. from Group 1. Twenty per cent. of these had enlarged cervical glands, and none showed heart murmurs. Of the ninety-three children in this group whose tonsils had been removed, breathing was good in fifty-seven, or 62 per cent.; fair in nineteen, or 20 per cent., and poor in seventeen, or 18 per cent.

While 34 per cent. of younger children who had removals breathed poorly, the older group shows only 18 per cent. This is probably due to the reaching of immunity to infections in older children, and also to the increasing size of air space with dehydration and cessation of growth of lymphatic tissue.

Twenty-five per cent. of the children in this group had enlarged cervical glands, and there were five heart cases, or 5.3 per cent., a slightly higher incidence than in the younger group, which gave 3.5 per cent. Seven of the children with more severe valvular heart lesions were picked up at random; and, as no abnormal nose or throat condition was found at examination, they could not be included in either of the two groups.

To determine whether the ordinary so-called healthy, small and medium sized tonsil at a later date becomes pathologic, or whether those recorded as pathologic may later become healthy, we used a system of checking all tonsils from one plus to three plus, depending on their size and appearance, only three plus tonsils being considered for operation. In this way we checked up the same throats yearly for a period of four years, finding a wide variation in the size and appearance of the tonsils at different examinations. Many quite large and bad looking tonsils seen one year would look small and much improved at the next yearly examination; others, apparently insignificant, the following year had become much enlarged and foul looking.

About an equal number progressed upward from one plus, or receded downward from three plus. By far the largest number of our pronounced cases occurred between the ages of from 7 to 10 years. It is significant that this is about the age at which the infectious and contagious diseases of childhood are most prolific. It is also the middle of the second dentition period, when the mouth harbors many broken and decaying teeth, with lacerated gums and their accompanying infections.

CONCLUSIONS

While the amount of material and figures presented are far too small to justify definite opinions they at least suggest that:

1. The incidence of heart disease in the great number of children referred for tonsil operations is very small.
2. The cervical glands enlarge as often after as before tonsil removal.
3. There is more complete relief from symptoms when removal is done at from 7 to 10 years of age, in the majority of cases.
4. Early removal gives mechanical relief for a time; but the original cause of the growths, whatever it may be, is present and active until a much later period.

THE FITNESS FOR PREGNANCY OF PATIENTS WITH HEART DISEASE

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Whether or not it is safe for a given woman with heart disease to undertake pregnancy is a medical problem for whose decision we have to rely on many conflicting statements and opinions. If the patient should have already become pregnant, we are no better off, for there is no general accord as to the principles on which our decision should be based. We are told that mitral stenosis is a most dangerous lesion, and that the presence of aortic regurgitation is of very serious moment, and yet we often see patients with either or with both of these lesions who have gone through one or more pregnancies without any untoward event. It is also true that some patients with these lesions who have more or less marked symptoms of cardiac insufficiency during their pregnancy develop edema of the lungs during labor, and many of these will die.

The problem is fundamentally difficult, for we are called on before pregnancy or during the early months to say what will be the reaction of the heart, some months later, to a strain whose severity we cannot truly predict. The latter feature is one of the most vital parts of the problem, for there will obviously be a very different degree of circulatory strain from a labor lasting twenty-four hours or from a precipitate delivery.

It seemed that the only way to find a solution of this problem was to see a considerable number of women with heart disease either before they became pregnant or in the early months, and to follow them through pregnancy and labor to see how their hearts withstood the strain. It has been possible to do this at the Lying-In Hospital through the kindness of Dr. A. B. Davis. The patients were seen in the antepartum clinic as soon as they applied to the hospital, which was usually in the very early months. They were followed throughout pregnancy in the clinic with monthly or weekly visits as was indicated, and were sent into the hospital for delivery, or for observation or treatment if their condition called for it earlier.

After a preliminary period of observation, it was thought feasible to group these patients in such a way that their grouping would afford an indication of the severity of their condition, and thus indicate the possibility of dangerous heart failure occurring during labor. It was hoped that this grouping might become a basis for prognosis as to the fitness for the strains of pregnancy and labor, and it is the purpose of this report to show how far it has proved to be reliable and in what respects it has failed.

It was early realized that no foundation for such a prognosis could be built on a basis of the pathology of the heart. There is an old and revered opinion in medicine that the presence of mitral stenosis is a most serious thing for the pregnant mother, and yet we soon saw several women with well developed mitral stenosis go through to full term and pass through even difficult deliveries without any sign that the heart was giving way. I elsewhere[1] express the belief that the sole reason for the bad repute of mitral stenosis lies in its frequency. In our experience at the Lying-In Hospital it is twice as frequent as aortic regurgitation, and so we should find twice as many mitral cases causing trouble as we do aortic cases if the two were of equal severity. We do not, as a fact, find this proportion among our seriously sick patients, there being about an equal number with each of these lesions. Cases with combined aortic and mitral lesions are not considered in either category.

The only guide from the heart's pathology which we have been able to deduce from our experience is a belief in the relative harmlessness of uncomplicated mitral regurgitation, whether with a slight or a greater degree of enlargement of the heart. All of our patients who had this condition were well compensated throughout pregnancy and labor, so that we feel that one who has uncomplicated mitral regurgitation should be considered as an excellent risk. If, however, one of these patients should fall into Group 3 or 4 of our classification—a coincidence which we have not yet encountered—I should not feel that they were safer than any other patients of the group.

The basis of our grouping, which follows the general principles of that adopted by the Association of Cardiac Clinics of New York City, is the patient's reaction to exercise. The subjective complaints of the patient as she goes about her ordinary life, and the subjective and objective reactions to a test exercise performed at the time of her visit to the physician are used for the grouping. We ascertain the patient's symptoms when walking, house cleaning and climbing stairs to find how much she is restricted in her activities by the appearance of shortness of breath or palpitation. We then get her to exercise, standing with feet separated and swinging a 10 pound dumb-bell held in both hands from over her head to as near to the floor as she can conveniently reach, repeating the movement about once every two seconds. This swing can usually be repeated twenty times without difficulty, but the patient should be carefully watched, and stopped if there is marked flushing or evident dyspnea or distress. I have used this exercise test a great many times with these patients and have never seen or heard of any harm coming from it. I was under some apprehension at first that its use with pregnant women might precipitate an early labor, but this event has not taken place. A normal pregnant woman can swing a 10 pound dumb-bell twenty times without distress and with only a slight sense of breathlessness. There will be only slight objective dyspnea, the pulse will accelerate to a rate of 120 a minute or less, counting for the first ten seconds only and multiplying by 6, and by the end of one minute the respiration will have become normal and the pulse nearly so, the pulse returning quite to its normal level at the end of two minutes. This is a normal reaction to this amount of exercise, for it would not be normal if it resulted from only four or five swings of the dumb-bell.

Herein lies the reason that we must use such a relatively strenuous test exercise, for if a less strenuous exercise is used, it will not reveal the limited ability of the heart. Just so in testing the strength of a stick we must bend it sharply or we shall not be certain of revealing a latent weakness.

If twenty swings of 10 pounds should cause some evident distress, as shown by flushing or an anxious facies, with marked dyspnea and a pulse rate of 25 for the first ten seconds, a rate of 150 a minute, and if the dyspnea and pulse acceleration last more than a minute and the rapid pulse for two minutes or more, then this reaction should be considered excessive. A moderately increased reaction would lie between these two; but a patient who was stopped after ten swings because of evidences of distress and yet showed a moderately increased reaction should be considered to have an excessive reaction to twenty swings.

DIAGNOSIS, GROUPING AND COURSE *

Group 1	Group 2	Group 3	Group 4
MS	MR	MR plus adiposity	MS H
MS	MR	MS o D	MS e D
MS & R	MR plus hyperthyroid	MS o	MS pr
MR & S	MS	MS p	MS h plus auricular fibrillation
MR & S plus irritable heart	MS	MS o	MS & R e i
MR	MS	MS	AR & MR w
MR	MS	MR & S	AR, MS & R o t D
MR	MR & S & AR	AR e D	AR, MR & S w I
AR		AR & MR o	AR & S pr

* The patients are indicated by their valvular lesion, e. g., MS, mitral stenosis; AR & MR, aortic regurgitation and mitral regurgitation; AR & S, aortic regurgitation and stenosis. When two lesions are named, the first is the one considered to be of most clinical importance in the patient considered. The clinical progress of the case is indicated by the reference letters as follows: D, died; o, developed edema of the lungs during labor; e, developed edema of the lungs before labor; p, palpitation and dyspnea during labor without edema of the lungs; pr, precipitate delivery; H, hysterotomy at the fifth month because of fear of trouble during labor; h, hysterotomy at the fifth month because of contracted pelvis; i, patient had two attacks of pulmonary edema during pregnancy, recovered, and went through a short instrumental delivery at term; t, twin delivery; w, positive Wassermann reaction; I, pulmonary infarct at third month; hysterotomy after recovery.

By combining the patient's symptoms after her ordinary exertions with her reaction to the foregoing exercise test we have been able to place all patients in one of the four following categories:

Group 1. Patients who were not troubled by what they considered unusual dyspnea or palpitation on exertion before pregnancy, and who did not develop this during pregnancy. These patients showed a normal reaction to the test exercise, or, if not, they were placed in Group 2.

Group 2. Patients who were not troubled by unusual dyspnea or palpitation on exertion before pregnancy, but who had either complained of this during a previous pregnancy or who had such a complaint during the present pregnancy. These patients showed a normal or moderately increased reaction to the test exercise. If they showed a markedly increased reaction, they were placed in Group 3.

Group 3. Patients who had been troubled by unusual dyspnea or palpitation on ordinary exertion before pregnancy, and who had noticed an increase of these symptoms during a previous pregnancy or during the present one. These patients showed a moderately increased reaction to the test exercise. If they showed a markedly increased reaction, they were placed in Group 4.

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[1] Pardee, H. E. B.: Treatment of Cardiac Failure During Pregnancy, Am. J. Obst., to be published.

Group 4. Patients who had been troubled by unusual dyspnea or palpitation on exertion before pregnancy, these symptoms having been markedly accentuated during a previous pregnancy or just previous to or during the present one, so that the patient had to remain in bed for a time. A history of bed sickness from heart disease when the patient was not pregnant was not considered to place her in Group 4 unless it was less than six months previous to the present pregnancy. These patients all showed markedly increased reactions to the test exercise.

There were thirty-five patients with heart disease who were grouped according to this system. Nine of these were in Group 1, eight in Group 2, nine in Group 3 and nine in Group 4. The accompanying table shows the diagnoses of these patients, their grouping and the untoward events of their further course. These cases will be reported in detail elsewhere. It can be seen that the deaths were confined to patients in Groups 3 and 4, and that no patients in either Group 1 or Group 2 showed serious effects of the strain of labor. Three patients of Group 3 and two patients of Group 4 went through pregnancy and labor without serious symptoms or signs of cardiac overstrain, though some of these patients were unable to climb one flight of stairs except at a very slow rate, on account of the resulting dyspnea.

It is interesting and of considerable clinical significance that no patients in either Group 1 or Group 2 developed serious signs of cardiac overstrain during labor, though some of them were more than slightly incapacitated during pregnancy for the ordinary exertions of their lives. The number of patients is, of course, small, but it represents about half of all the patients with heart disease that we saw during this period. It seems that a grouping which will enable us to say that half of our patients are in no serious danger is well worth a thorough practical trial.

Groups 3 and 4 evidently include the serious cases, those who, we may anticipate, will give signs of circulatory embarrassment either during labor or during pregnancy. The majority of these patients had symptoms of cardiac insufficiency, i. e., shortness of breath or palpitation on ordinary exertion, before the beginning of pregnancy. This was not true of all of them, though, for some were placed in Group 3 because of the severity of their reaction to the test exercise. It is interesting to note that the patients in Groups 3 and 4 afforded about the same percentage of serious happenings, though Group 4 was considered to include the more serious cases. Possibly the reason for this may lie in the smallness of the series.

It seemed to us, at the time of the delivery, that the only reason that three of the Group 4 patients did not develop serious symptoms of cardiac strain lay in the briefness of the labor. Two were practically precipitate deliveries, while the third patient was given prompt operative assistance as soon as labor set in. Two other Group 4 patients had hysterectomy performed at the fifth month of pregnancy, so that it cannot be said with certainty how severe or mild their future course would have been.

Here we discern the importance of an early knowledge of whether the labor will be a hard one or an easy one, and how vital it is for the mother, especially if she falls into Group 4, that the labor should be easy. It is apparently more important for Group 4 patients than for those of Group 3, for some of these have gone through quite usual labors successfully, and two had unusually long ones.

Neither of the two deaths of Group 3 patients occurred during labor. One was at the seventh month of pregnancy during an attack of edema of the lungs which was thought to have an origin in coronary artery occlusion, while the other patient died of a cerebral embolus which came after recovery from an acute cardiac failure starting during labor with edema of the lungs. Both of the deaths of Group 4 patients were during or immediately after labor. One delivery was by a vaginal section, and the other was a manual delivery of twins.

There is not a great difference in the course of the patients of Groups 3 and 4, and it may not prove to be a profitable division of the patients. Those in Group 3, though, had harder labors, and it may be that this is the reason that their theoretically greater cardiac reserve was so often strained beyond its limits. It is plain that we have in these two groups some women with poor cardiac reserve who were able to go unassisted through pregnancy and labor without serious symptoms, and some who were not able to do this. The exercise test should give us some degree of help in determining those who will go through safely, but our results in following the course of the patients shows that it is not an infallible guide. I believe that the reason for this lies in the variable strain which is associated with pregnancy and labor in different women. A phlegmatic woman will be a safer risk than a nervous one with the same degree of limitation of the cardiac ability, as will also a woman with a roomy pelvis or with a small baby be safer than with a small pelvis or a large baby.

The number of previous children did not seem to be an important factor in determining the relative safety of the mothers in Groups 3 and 4 of our series. One of the three primiparas and three of the twelve multiparas died. One of the primiparas went through labor without signs of serious cardiac failure, as did six of the multiparas.

We have found the grouping according to this method very useful in prognosis. It has also been of great help in the management of the pregnancy to know that a Group 3 or Group 4 woman must be very carefully watched, because only about half of them will go through labor without a dangerous degree of cardiac overstrain. I believe that women in these two groups should be allowed to undertake pregnancy only when there is some very special reason for having a child or when they are ready to keep themselves under the constant observation of a physician who is accustomed to handling such cases. The details of this observation have been fully dealt with elsewhere, and I consider the details so important that they cannot be condensed here. With proper management of these severe cases it should be possible to allow any woman with cardiac disease to try to have a baby and to feel that the risk she takes is not inordinately great. The maternal mortality should be much smaller than in this series. A certain number of these pregnancies in severe cases will have to be interrupted in the interest of the mother's life before the child is viable, but the great majority of them can be carried through successfully.

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THE DETERIORATION OF NEO-ARSPHENAMIN

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Although the utmost precaution is taken by the manufacturers to prevent commercial neo-arsphenamin from deteriorating, a not inconsiderable number of lots undergo changes of so decided a nature that they are rendered either useless or, in some cases, dangerous to life.

TABLE 1.—KEEPING QUALITIES OF NEO-ARSPHENAMIN, WHILE IN THE AMPULE, TOXICITY BEING INDICATED BY THE TOLERANCE SHOWN BY WHITE RATS, WHEN ADMINISTERED INTRAVENOUSLY AS A 4 PER CENT. AQUEOUS SOLUTION

Manufacturer	Sample	Date of Manufacture	How Kept	Appearance and Physical Properties at Examination	Date of Examination	Details and Results of Examination	Comment
A	a	March, 1919	Room temperature (20-29 C.)	Light golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	March, 1919	No deaths out of 5 injected at 200 mg. per kilogram	
A	a	March, 1919	Submitted for reaxamination; probably kept at room temperature	Light golden yellow powder; freely mobile in ampule; turbid solution after ½ hour in water at room temperature	July, 1920	No deaths out of 5 injected at 200 mg. per kilogram	Solution still turbid after filtration; 2 animals received filtered, 3 unfiltered solution
A	b	December, 1919	Room temperature	Light golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	December, 1919	No deaths out of 5 injected at 200 mg. per pilogram	Injection made in 5 to 6 seconds
A	b	December, 1919	Submitted for reaxamination; probably kept at room temperature	Light golden yellow powder; freely mobile in ampule; difficultly soluble in water at room temperature; complete solution after 20 minutes	July, 1920	One death out of 5 injected at 200 mg. per kilogram	Storeroom sample also difficultly soluble; powder trifle darker than sample submitted
B	c	December, 1918	Room temperature	Light golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	December, 1918	Three died within 6 days out of 10 injected at 180 mg. per kilogram	
B	c	December, 1918	Submitted for reexamination; probably kept at room temperature	Deep golden yellow powder; adheres slightly to sides of ampule; incompletely soluble in water at room temperature	May, 1921	No deaths out of 5 injected at 200 mg. per kilogram	
B	d	June, 1919	Room temperature	Light golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	June, 1919	No deaths out of 5 injected at 200 mg. per kilogram	
B	d	June, 1919	Submitted for reexamination; probably kept at room temperature	Light golden yellow; freely mobile in ampule; incompletely soluble in water at room temperature; sharp garlicky odor to solution	December, 1919	No deaths out of 5 injected at 200 mg. per kilogram	Solution unfiltered
B	d	June, 1919	Submitted for reexamination; probably kept at room temperature	Light golden yellow; freely mobile in ampule; incompletely soluble in water at room temperature; sharp garlicky odor to solution	June, 1920	One death on first day, out of 5 injected at 200 mg. per kilogram	Death occurred from unfiltered solution
C	e	February, 1919	Room temperature	Golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	February, 1919	One death on first day, out of 5 injected at 200 mg. per kilogram	Odor of ether on opening ampule
C	e	February, 1919	Storeroom temperature (18-20 C.)	Brick red cake; could not be moved on shaking ampule; practically insoluble in water at room temperature	March, 1921	No deaths out of 5 injected at 200 mg. per kilogram (filtrate contained 0.75 per cent. arsenic)	Odor of ether on opening ampule; material settles
D	f	June, 1920	Room temperature	Light golden yellow powder; freely mobile in ampule; readily soluble in water at room temperature	June, 1920	No death out of 10 injected at 200 mg. per kilogram	
D	f	June, 1920	Storeroom temture	Light golden yellow powder; freely mobile in ampule; incompletely soluble in water at room temperature; fine flocculent precipitate	March, 1921	Nine died within 5 days, out of 10 injected at 200 mg. per kilogram	
D	f	June, 1920	Storeroom temture	Light golden yellow powder; freely mobile in ampule; incompletely soluble in water at room temperature; fine flocculent precipitate	June, 1921	All died within 6 days, out of 10 injected at 200 mg. per kilogram	Solution not filtered; white scum on surface after 1 hour

During the last three years it was my privilege to examine biologically for the federal government, at the Hygienic Laboratory, all of the lots of commercial arsphenamin and neo-arsphenamin manufactured in the United States, as well as numerous samples of each compound which were submitted for examination to the Hygienic Laboratory of the U. S. Public Health Service, by the U. S. Public Health Service Hospitals, U. S. Army, U. S. Navy and many syphilologists. In no instance was a lot of arsphenamin encountered which could be definitely said to have deteriorated, whereas a rather large percentage of the lots of neo-arsphenamin were found to have deteriorated since their first examination.[1] In this way it was learned that neo-arsphenamin, while in a sealed ampule, may change in color, solubility, mobility in the ampule, odor and toxicity. In order to determine the percentage of the lots of neo-arsphenamin that had undergone a change in solubility since their first examination, all of the lots which complied with the official requirements that were submitted by two domestic manufacturers during the period extending from February, 1919, to February, 1920, were reexamined in July, 1921. Reexamination revealed that, out of the forty-nine lots received from one manufacturer, thirteen were found to have become difficultly soluble, whereas, out of the twenty-five lots received from another manufacturer, eight showed a similar change; that is, about 25 to 30 per cent. of the lots issued by two of the leading manufacturers had deteriorated within three years.

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[1] According to regulations formulated under an act of Congress, all arsphenamin and allied products must be examined by the Hygienic Laboratory of the U. S. Public Health Service before being released for interstate or foreign trade.

Table 1 gives the results of the toxicologic and physical examination of six lots of neo-arsphenamin, and describes in detail the changes referred to above.[2]

Table 1 shows that the most constant change that occurs in neo-arsphenamin is the development of a decrease in solubility. Lot f showed an increase in toxicity coincident with the decrease in solubility. It is of interest to note that, although the difficultly soluble lots may not be excessively toxic for white rats, such lots as a rule cause grave disturbances when used clinically.

For example, Lots a, b, c and d were submitted for examination because they had given rise to alarming symptoms of a "nitritoid" type. This reaction appears almost immediately after injecting the drug, and usually consists, first, in experiencing a feeling of tingling and burning over various skin areas of the body; later, in injection of the face, swelling of the eyelids, lips and tongue; a fear of impending death; abdominal pain, which is usually accompanied by nausea and vomiting; cyanosis, together with difficult and irregular respiration. In some cases, convulsions or even death may occur. As a rule, these symptoms rapidly subside, leaving no noticeable after-effects. In this connection it should be stated that such symptoms may be produced by perfectly clear solutions of neo-arsphenamin; however, their occurrence after clear solutions is rare as compared with their occurrence after turbid or incomplete solutions.

Experiments made to determine the cause for the deterioration of neo-arsphenamin indicate that deterioration depends in large measure on the nature of the lot at the time of the manufacture, the conditions under which the filled ampules are kept, and possibly the age of the lot.[3]

TABLE 2.—EFFECT OF HEAT ON NEO-ARSPHENAMIN, WHILE IN THE AMPULE

Manufacturer	Lot	Treatment	Solubility in Water As a 4 per Cent. Solution (After 10 Min.)	Comment
A	g	100 C. for 13 min.	Soluble	No change in color of powder or odor; powder freely mobile
A	g	100 C. for 20 min.	Incompletely soluble	Powder adhered to sides of ampule; color trifle darker than before heating
B	h	100 C. for 20 min.	Incompletely soluble	Powder changed from light yellow to orange red; caked in ampule
B	i	100 C. for 20 min.	Incompletely soluble	Powder changed from light yellow to orange red; caked in ampule
D	j	100 C. for 20 min.	Soluble	No change in color or mobility in ampule
E*	k	100 C. for 20 min.	Soluble	No change in color or mobility in ampule
E*	l	100 C. for 20 min.	Soluble	No change in color or mobility in ampule

* Foreign products; all others, domestic products.

Experiments conducted to ascertain the influence of temperature showed that temperature is an important factor in hastening the deterioration of some lots of neo-arsphenamin while in the ampule. Incubation of some lots at 37 C. for about nine months caused the development of an incompletely soluble product, whereas controls kept at about 20 C. remained soluble. Furthermore, profound changes could be readily affected in some lots by heating to 100 C. for twenty minutes, whereas other lots remained practically unchanged. Table 2 gives the details of the experiments on heating.

The age of the lot may possibly be a factor in producing an incompletely soluble product; but, since such change may be found in some lots within about two weeks after manufacture, age may be regarded as a factor of less importance in the production of deterioration.

CONCLUSIONS

1. Commercial neo-arsphenamin is a relatively unstable substance in the ampule.
2. Temperature is a potent factor in causing its deterioration.
3. It is advisable to keep it under storage conditions similar to those required for vaccines, that is, at icebox temperatures, until all the factors concerned in causing the deterioration of the compound are understood.

USE OF ANTISTREPTOCOCCUS WHOLE HUMAN BLOOD IN MALIGNANT ENDOCARDITIS *

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Antistreptococcus serums have not given satisfactory therapeutic results. Yet it is well known that animals may be readily immunized to streptococci so that they are able to withstand many times the lethal dose, and so that protective substances may be demonstrated in considerable concentration in their blood. Evidently it is desirable to transfer this immunity more completely than is possible by the use of polyvalent preserved serums.

In malignant endocarditis, a unique opportunity for serum therapy presents itself. The chronicity is usually sufficient to permit the isolation of the particular strain of streptococcus responsible for the disease, and immunization of an animal with it. The serum may then be used fresh.

About two years ago, a sheep was immunized with a strain of *Streptococcus viridans* obtained by blood culture from a young woman with malignant endocarditis. The serum of this animal showed a high opsonic activity,[1] and was used while fresh for intravenous injection. The use of this serum was followed by a well marked serum reaction with a rise of temperature and urticaria, but there was no benefit to the patient.

Certain disadvantages of this attempt at passive immunization are apparent. First, a foreign serum was used; thus limiting the quantity compatible with safety. Second, no use could be made of any of the increased phagocytic activity of the leukocytes of the immunized animal. It seemed that these disadvantages might be avoided by immunizing a human subject with the streptococci from malignant endocarditis by the same procedure followed in the preventive inoculation with typhoid bacilli, and later using such a person as a donor of whole blood. In this way, reasonably large amounts of whole immune blood could be transfused into the patient. This method was tried in the case of a woman, aged 28, who had an irregular fever, evidence of lesions of the aortic and mitral valves, and emboli in the spleen, posterior tibial artery, lungs, skin and femoral artery. A blood culture gave many colonies of *Streptococcus viridans.*

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[2] The toxicity tests herein described were made according to the official Hygienic Laboratory method. This method requires that, in the toxicologic tests, white rats weighing between 100 and 150 gm. shall live seven days when given neo-arsphenamin intravenously as a 4 per cent. aqueous solution in the dosage of 200 mg. per kilogram.

[3] Further experiments and discussions relating to the deterioration of neo-arsphenamin will be found in Public Health Reports **36**: 2523 (Oct. 14) 1921.

* From the John McCormick Institute for Infectious Diseases.

[1] I am indebted to Dr. Ruth Tunnicliff for the opsonic determinations.

The husband of the patient was immunized to the streptococcus isolated from the patient's blood by injecting subcutaneously on successive days ½ billion, 1 billion, and 2 billion organisms which had been killed at 57 C. The serum of the patient agglutinated the red cells of this donor so that whole blood could not be transfused. On the seventh day following the last injection, 50 c.c. of blood was withdrawn from the donor and immediately centrifuged with 1 per cent. sodium citrate. From this blood, 20 c.c. of serum was collected and given the patient intravenously while still warm. This procedure had no apparent influence either beneficial or harmful. Four days later, 25 c.c. of whole blood from the husband was given to the patient subcutaneously. The same treatment was repeated two days later and again four days later. No effect was noted from these injections.

In the meantime, the patient's sister, who was in the same blood group as the patient, was immunized by injections on successive days of 1, 2 and 3 billion heat killed organisms. One week later, 2, 3 and 5 billions were given on successive days. A slight febrile reaction and local inflammation followed the last injection. Eight days following the last injection, 25 c.c. of blood was withdrawn from the sister's arm and immediately injected into the arm vein of the patient. This procedure was repeated on the second, third and fifth days following. During the time the intravenous transfusions were given, the patient stated that she felt much better. She was again able to eat; the nausea and vomiting ceased; there were no chills; the temperature variation was less, and the patient's mental confusion and stupor disappeared. On the morning of the second day following the last of the five intravenous administrations of whole blood, the patient died suddenly, probably as the result of another embolism. A necropsy could not be obtained.

SUMMARY

The intravenous injection of fresh serum from a sheep immunized with the patient's strain of *Streptococcus viridans* produced no benefit.

Fresh human serum from a person immunized with the patient's streptococcus administered intravenously was of no benefit.

Fresh whole blood from a person similarly immunized was of no value on subcutaneous injection; but, administered intravenously, this antistreptococcus whole blood produced a definite temporary improvement.[2]

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[2] Temporary improvement has followed this procedure in a second case of malignant endocarditis now under observation.

Donations to Science.—The *Nederlandsch Tijdschrift* endorses what the *British Medical Journal* recently had to say on the ill advised generosity of persons who offer prizes for the discovery of a sovereign cure for some hitherto incurable disease. Both editorials deplore the limitation of the prize to the "cure," instead of the fund being available for those who are working to find the cure. There are a number of large prizes thus hung up in scientific circles, doing no one any good, while research workers are struggling against overwhelming odds in their investigations.

CLINICAL TETANY BY FORCED RESPIRATION *

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In a previous paper [1] it was shown that all the essential symptoms of tetany could be produced in the human subject by voluntary forced respiration. So far as is known,[2] there are no reported cases of tetany due to accidental or involuntary overventilation. The cases reported here are therefore presented as cases of tetany occurring under various conditions and during various diseases, but all due to forced respiration.

REPORT OF CASES

CASE 1.—C. I., a man, aged 28, a medical student, who had cholelithiasis and cholecystitis, during severe attacks of gallbladder pain developed tetany following a period of overbreathing.

The first attack occurred at Newport News, Va., Oct. 28, 1918, while he was in service. He had a severe attack of pain and tenderness in the gallbladder region, with fever and general prostration. During the height of his pain, he unconsciously started to breathe deeply, and after about ten minutes of forced respiration became dizzy, and developed tingling of the hands, face and then the entire body, and then spasms of the feet, hands and face. The case was diagnosed by a member of the Medical Corps as epilepsy. The patient was given morphin, which relieved the pain and caused the tetany to disappear.

In November, 1918, the patient had a similar attack of probable cholecystitis with overrespiration and resultant tetany. The case was again diagnosed as epilepsy by the same physician and also by another, a neurologic consultant. The patient was given a complete neurologic examination, including a stereoroentgenogram of the skull, the latter because he had a traumatic scalp wound in June, 1918. All examinations were negative. The neurologic opinion was that the generalized spasticity was a form of epilepsy brought on by intense pains and due to a lowered stimulus threshold.

In March, 1919, he had a third gallbladder attack and again developed tetany. This time, however, he employed forced respiration purposely, because, as he stated, when he overbreathed sufficiently his abdominal pain was distinctly lessened in degree.

Dec. 28, 1921, the patient entered Barnes Hospital because of a return of the abdominal symptoms. December 29, at 5 p. m., the symptoms became greatly aggravated. He had an acute pain in the upper right quadrant with rigidity, extreme tenderness and increased dulness below the right costal margin. The patient began to overbreathe, and when I saw him at 5:30 there were typical carpopedal spasm, and spasticity of the face and of the muscles of the thighs and legs. The Chvostek and Trousseau signs were positive. Urine collected following this attack was markedly alkaline, containing but 2 c.c. of tenth-normal acid per hundred cubic centimeters of urine. The patient himself then diagnosed the case as tetany due to overbreathing, as he had seen me produce it in the class room. He said that his pain was distinctly less severe during the period of hyperpnea. Tetany disappeared following the cessation of deep breathing. About 7 p. m. the same day the patient again developed tetany following forced respiration, similar to the previous attacks.

Next day, the patient was operated on. The gallbladder, which was huge and distended, contained stones. There were a few adhesions about the gallbladder, and a small amount of clear, free fluid in the abdomen. Cholecystectomy was performed, with recovery from the abdominal symptoms.

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* From the Department of Internal Medicine, Washington University Medical School.

[1] Grant, S. B., and Goldman, Alfred: Am. J. Physiol. **52**: 209 (June) 1920.

[2] Since this paper was written, my attention has been called to an article by Barker and Sprunt (Endocrinology **6**: 1 [Jan.] 1922), who cite a case of a spontaneous attack of tetany during a paroxysm of hyperpnea in a patient convalescent from epidemic encephalitis.

Case 2.—D. D., a nurse, aged 23, of good general health, on Jan. 29, 1921, about 7 p. m., while walking, felt faint, and became weak, short of breath and nauseated. She walked fast to reach her home, and fell on her bed panting and breathing deeply. She continued to breathe deeply, as she felt that she could not get her breath fast enough. Then her arms became numb, her fingers tingled, and her face, neck and legs then felt numb and stiff. Her mouth, especially, felt "peculiar." Ten minutes after the onset of these symptoms, Dr. Herrmann saw the patient and noted that the face was flushed, the mouth was drawn, and there was a typical carpopedal spasm; breathing was quite deep and rapid; the Chvostek and Trousseau signs were markedly positive. The patient was sent into Barnes Hospital, where I saw her. A typical attack of tetany, due to overventilation, was observed. At 8:15 p. m. during tetany, the alveolar carbon dioxid was of 20 mm. tension. The urine at this time was markedly alkaline. and contained 3 c.c. of tenth-normal acid per hundred cubic centimeters of urine. The blood calcium at this time was 10 mg. per hundred cubic centimeters. At 8:30 p. m., the alveolar carbon dioxid was 23 mm. The patient was then instructed to stop deep breathing as much as possible, and take very shallow respirations. She at once began to relax. At 8:45 she became nauseated, and vomited a considerable amount of yellow granular fluid. The vomitus contained free hydrochloric acid 28, total 46. At 8:46 the alveolar carbon dioxid was 25 and the patient was completely relaxed; at 8:55 it was 30; at 8:57, 35; at 9, 35. The plasma bicarbonate was not estimated. The patient had eaten a considerable amount of chop suey at noon of the same day, to which she attributed her nausea.

Case 3.—T. W., a woman, aged 22, entered Barnes Hospital, Oct. 17, 1921, because of attacks of nervousness and crying spells in which she became more or less rigid, with trembling of the entire body, of five weeks' duration. The patient's aunt had a similar condition. The patient was irritable and neurotic. I saw a typical spell in which the patient first cried for several minutes and then started to overrespire, taking from twenty to thirty deep respirations in a minute. After five minutes she complained of tingling of the hands and face. After eight minutes she developed a typical carpal spasm of tetany. Subsequently the face muscles became spastic. The Chvostek and Trousseau signs at the time were positive. The urine, before the attack, was acid; five minutes after the onset of the attack, alkaline.

The patient had about ten attacks in nine days while in the hospital. The attacks were more frequent and worse about the time of the menses. The patient said that she could feel the spells coming on. They were likely to occur in a close room when she felt a sense of oppression. She could give no reason for overventilating. She was discharged, October 8. The diagnosis was hysteria, tonsillitis and questionable hyperthyroidism.

The laboratory findings, obtained after one attack, were: urine, alkaline; 5 c.c. of tenth-normal acid in one-half hour; before attack, 11 c.c. in one-half hour. The plasma bicarbonate during two different attacks was 52 and 56 per cent. by volume. The plasma bicarbonate at a "normal" interval was 62 per cent. by volume.

Case 4.—L. S., a woman, aged 26, with acute pharyngitis, laryngitis, bronchitis and syphilis, entered Barnes Hospital, Feb. 27, 1920. During the course of her illness the patient frequently took rapid, fairly deep respirations, frequently up to 40 a minute.

March 10, she was seen in a period of forced breathing in which she had tingling of the arms, hands and chest for two hours. Then she developed some stiffness in the fingers. This caused the patient considerable worry. The Chvostek and Trousseau signs were suggestive. Freshly voided urine was strongly alkaline to litmus.

March 12, at 11 a. m., the alveolar carbon dioxid during a breathing spell was 18 mm.; at 11:30, 23 mm.; at 11:30 the plasma bicarbonate was 40 per cent. by volume. The urine was strongly alkaline. At 12 o'clock there was complete relaxation; respiration was normal; at 12:10, the alveolar carbon dioxid was 32 mm.; the plasma bicarbonate was 49 per cent. by volume.

March 16, during another deep breathing period, the alveolar carbon dioxid was 18 mm.; the urine was alkaline during the spells, and acid on all other occasions.

Case 5.—B. E. C., a woman, aged 26, who had influenza with abdominal symptoms of questionable origin, which began, Feb. 10, 1922, with nausea and vomiting, and later was accompanied by soreness in the abdomen, epistaxis, February 19, and an irritating cough, entered Barnes Hospital, February 22. She looked ill; there was blood in the nose from an ulcer in the septum; the pharynx was hyperemic. The temperature was 38.3 C. (101 F.), the respirations 30 a minute and distinctly deepened for rate. There was noted by Dr. House the carpal spasm of tetany. The patient's hands and feet tingled. Half an hour later the tingling and spasm of the hands disappeared, and at the same time respirations were quite normal. The patient's general condition improved in the hospital, and she had no further attacks.

For two days prior to admission she had been having at irregular intervals during the day similar periods in which her hands and feet felt numb, tingled as if they "were asleep," and were rigid. On one occasion her face muscles felt spastic, and she could hardly talk. The patient remembered distinctly that during the latter spell she was overbreathing violently, as she felt that she could not get her breath fast enough. She was considerably alarmed about her condition. No alkalis had been administered.

Case 6.—A young man at the university hospital, with tuberculosis of the spine, whose case was reported to me by Patient 1, was apprehensive and easily worried. Whenever he expected relatives or when some procedure was done to him, he became excited and began to overbreathe and soon developed carpopedal spasm with beginning general spasticity. This would disappear on cessation of deep breathing. The case was not recognized as tetany, but Patient 1 stated that the condition was exactly the same as in his own case during a gallbladder attack. The patient's neurologic condition was considered as a form of hysteria. There were no laboratory data.

Cases 7, 8, 9, 10 and 11.—All of these were college students who developed tetany during and following a class fight. All these men were out of training and in poor physical condition. Following rather strenuous exercise, each of them became very hyperpneic for from five to ten minutes, and developed visible carpal spasm, with tingling in the extremities, and some rigidity of the face muscles. This condition disappeared on cessation of deep breathing. The men were all taken to the university hospital and examined, and no abnormalities were found. The cases were reported to me by a medical student who was familiar with tetany production and forced respiration.

In none of the cases that I saw was there any evidence of increased muscular irritability, such as a positive Chvostek or Trousseau sign, at any time other than during the periods of forced respiration.

COMMENT

As explained in a previous paper,[1] the tetany of forced respiration is due primarily to an alkalosis in the body.

Forced respiration, by washing out carbon dioxid from the alveoli, reduces the carbon dioxid content of the blood and so tends to make the blood more alkaline than normal. This reduction of carbon dioxid in the blood disturbs the H_2CO_3: $NaHCO_3$ ratio upon which the hydrogen ion concentration depends, and on the reestablishment of this ratio, $NaHCO_3$ passes out of the blood plasma into the tissue, and a considerable portion is excreted by way of the kidneys. Apparently CO_2 may be washed out of the blood more rapidly by overventilation than $NaHCo_3$ is decreased by excretion or other means, for on this assumption alone is it possible to account for the decreased alkalinity actually found in blood during deep respiration.

Some of the cases merit special consideration. Case 1 is of particular interest because of the observation by the patient himself that the overventilation with resultant spasticity distinctly lessened his pain. It was noted in the original experiments that there was marked hypesthesia to needle prick (for withdrawal of blood) at the elbow. Collip and Backus[3] note numbness in the extremities, with almost complete cutaneous anesthesia in some subjects. Just why the patient overbreathed at first is difficult to say, but subsequently he did it purposely during his gallbladder attacks in order to lessen his severe pains. The discomforts of the tetany were negligible to the patient in comparison to the relief he obtained.

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[3] Collip, J. B., and Backus, P. L.: Am. J. Physiol. **51**: 551 (April) 1920.

Case 2 is of interest because of the association of distinct stomach symptoms with overrespiration and tetany. The patient was nauseated to begin with attributing this to a heavy meal of chop suey. During the attack it was noticed that she had stomach tympany down to the umbilicus. Soon after she was told to stop her deep breathing, and as she began to relax she vomited a large amount of fluid. Whether the nausea, due probably to an overdistended stomach, had anything to do with the beginning of overbreathing, and whether the relief by vomiting had anything to do with the relaxation of the spasm, it is difficult to say. It is of interest, however, to note the association because of the known relation of gastric dilatation to tetany.

Cases 3 and 5, both hysterical subjects, undoubtedly must represent a fairly large class. Abnormalities of respiration are a well known symptom of hysteria. One may be certain that at least some of the cases of "hysterical pseudotetany" are undoubtedly real cases of tetany due to overrespiration. It seems reasonable to suppose that many more of such cases may be attributed to overbreathing, if the type of respiration is studied.

An excessive hyperpnea following the acidosis of exercise explains the cases of tetany developed during the class fight. Collip and Backus suggest that an increased lung ventilation in swimmers and runners may result in temporary alkalosis with resultant "cramps." No cases are cited, however.

Henderson and Haggard[4] demonstrate that excessive hyperpnea may occur during anesthesia. A case was observed by the author during gas anesthesia to show typical carpal spasm with rigidity also of the forearm muscles and muscles of the abdomen. At the time, the subject was violently overbreathing. The case was questionable, because hyperpnea lasted only two and one-half minutes. Plasma bicarbonate during the spasm was 49 per cent. by volume. Taken during a "normal" period, it was 65 per cent. by volume. Collip and Backus suggest that ether spasm may be due to temporary alkalosis from hyperpnea, though no cases are cited.

Obviously, therefore, overrespiration may occur in a large number of conditions. In the classification of tetany by Barnes,[5] there is included, besides infantile tetany and tetany following removal of parathyroid glands, (1) tetany occurring during pregnancy and lactation (2) tetany associated with gastro-intestinal disorders, notably gastric dilatation, colitis and helminthiasis; (3) tetany occurring in acute fevers, and (4) tetany following poisoning by chloroform, morphin, ergot, lead and alcohol. Besides these, other authors add tetany occurring after exercise, excitement, intercourse, etc., and hysterical pseudotetany.

From the variety of clinical cases cited, it is reasonable to assume that many of the cases of tetany that would fall into one of these classes are due really to hyperpnea with resultant alkalosis and tetany.

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[4] Henderson, Yandell, and Haggard, H. W.: J. Biol. Chem. **33**: 333 (Feb.) 1918.

[5] Barnes, A. S.: Oxford Medicine **6**: 992, 1921.

CONCLUSIONS

1. These are the first clinical cases of tetany due to involuntary forced breathing to be reported.

2. Overbreathing sufficient to produce an alkalosis and tetany may occur during an acute disease, such as cholecystitis or influenza; in hysteria and gastric disorders; during and following physical exertion, and questionably during early anesthesia.

3. The tetany resulting from forced respiration produces hypesthesia to pain.

4. The type of breathing in all cases of tetany should be carefully observed.

AUTOHEMO-AGGLUTINATION OF HUMAN RED BLOOD CORPUSCLES

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Authentic records of autohemo-agglutination are so few that some authors doubt its occurrence. Such cases, however, do occur, and recently this phenomenon was observed in a patient by Clough and Richter.[1] In animals, auto-agglutination seems not to be as uncommon as in human beings. In horses, the phenomenon was first observed by Klein,[2] and later studied more carefully by Landsteiner.[3] Ottenberg and Thalhimer[4] observed it in a cat, while Rous and Robertson[5] succeeded in producing this condition experimentally in rabbits.

The observations here recorded were made in the case of a pregnant woman who was very anemic because of repeated bleeding from hemorrhoids. The phenomenon was first observed when blood was taken for a blood count, and knowledge of the work of Rous and Robertson led to a more detailed study of the mechanism of this agglutination in the human being. After the work was completed, I received a copy of the paper by Clough and Richter[1] recording identical observations; but because of the rare occurrence of this phenomenon in human beings, and in view of the different character of the disease with which it was associated, it has been thought worth while to publish the results.

The following is a brief case history of the patient:

A. Y., a Jewish woman, aged 34, married, was admitted to the Rothschild Hospital, Nov. 29, 1920, suffering from a severe anemia, and pregnant in the fifth month. There was nothing of note in either the family history or her previous history, except an attack of malaria four years before and some vague abdominal pains with occasional diarrhea for three months prior to admission. The stools were almost always bloody.

At the time of admission she was suffering from general weakness and insomnia, and examination revealed a compensating heart lesion (mitral insufficiency), a slight hypertrophy of the liver, and hemorrhoids. The stool examination for amebic and bacillary dysentery was negative. The urinalysis, the pulse and temperature were normal.

The blood examination on admission revealed: red cells, 2,556,000; hemoglobin, 60 per cent.; leukocytes, 13,000.

December 26, about one month after admission, blood examination revealed: red cells, 2,500,000; leukocytes, 9,700; hemoglobin, 70 per cent.

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[1] Clough, M. C., and Richter, I. M.: Bull. Johns Hopkins Hosp. **29**: 326, 1918.

[2] Klein, A.: Wien. klin. Wchnschr. **15**: 413, 1901.

[3] Landsteiner, K.: München. med. Wchnschr. **50**: 1812, 1903.

[4] Ottenberg, R., and Thalhimer, W.: J. M. Res. **33**: 213, 1915.

[5] Rous, Peyton, and Robertson, O. H.: J. Exper. Med. **27**: 509 (April) 1918, 563 (May) 1918.

The patient was kept in bed on a nourishing diet and received local treatment by suppositories and ointment for the hemorrhoids, and improvement was noted. Jan. 18, 1921, the patient suddenly became worse, the stools were frequent and bloody, and the abdominal pains increased in intensity. At this time the examination of stools for dysentery (bacillary and amebic) was again negative. An attempt to make a blood count now revealed the auto-agglutination of the red cells, and thereafter repeated observations were made, always with the same finding.

The patient had a normal delivery, April 2, but the phenomenon of auto-agglutination continued until the patient was discharged from the hospital and lost track of.

MECHANISM OF AGGLUTINATION

As stated in the history, the auto-agglutination was first observed when blood was taken for the blood count. At this time it was thought that the pipets or diluting fluids were at fault; but as new trials yielded the same result, it was evident that we were dealing with a case of autohemo-agglutination.

Tests were made to ascertain whether the human agglutinins reacted in a manner similar to the rabbit auto-agglutinins.[6] Landsteiner noted that auto-agglutination occurred only at low temperatures, not at body temperature. It was of first interest to determine whether the same relation would obtain in human auto-agglutination. Blood (about 10 c.c.) was therefore drawn into a warm flask containing glass beads, and rapidly defibrinated. The defibrinated blood was kept at body temperature and was used for various experiments.

Experiment 1.—*Effect of temperature.* One cubic centimeter of blood was pipetted into each of three tubes; one was left at body temperature, one at room (about 20 C.) and one at 4 C. Within half an hour, complete clumping was noted in the tubes kept at the low temperatures, while no agglutination occurred at 37 C. The blood was left in the incubator over night, but no agglutination was noted. Agglutination which occurred at room temperature was broken up by half an hour at body temperature.

The next experiment was made to determine whether the agglutinins were present in the cells or serum; in other words, whether the agglutination was due to a peculiarity in the cells or to actual agglutinins present in the serum.

Experiment 2.—*Seat of agglutinins.* A small amount of the defibrinated blood was rapidly centrifuged, the serum pipetted off, and the cells washed thoroughly with saline solution. The combinations given in Table 1 were then made in duplicate, one set being placed in the incubator, the other left at room temperature.

TABLE 1.—CROSS-AGGLUTINATION WITH PATIENT'S AND NORMAL SERUM

	Room Temperature		37 C.	
	Normal Blood Cells	Patient's Blood Cells	Normal Blood Cells	Patient's Blood Cells
Patient's serum	+	+	—	—
Normal serum	—	—	—	—
Saline control	—	—	—	—

It will be observed that both the normal and patient's red blood cells were agglutinated with the patient's serum, while no agglutination occurred with normal serum and patient's cells or in the saline control.

Experiment 3.—*Agglutination of blood cells of normal individuals.* Blood cells from five normal individuals were also tested with the patient's serum. In each instance, agglutination occurred at room temperature, and the clumps slowly disintegrated when placed at body temperature.

Experiment 4.—*Titration of agglutinins.* Different dilutions of serum were made to determine the titer. Agglutination was obtained in one hour at room temperature in a dilution of 1 : 80, while at 1 : 160 only partial agglutination occurred. Subsequently, new titrations were made with freshly drawn serum, but only slight fluctuations were noted.

TABLE 2.—AGGLUTININ TITER AT DIFFERENT INTERVALS

Date	1/23/20	11/8/20	11/13/20	4/3/21
Dilution	1:160 +	1:80 +	1:160 +	1:160 +

Experiment 5.—*Effect of mother's serum on child's blood, and vice versa.* April 2, the patient had a normal delivery, and tests were made to ascertain whether the agglutinins were present in the child's blood, as well as the reaction between the blood of mother and offspring. Blood was therefore drawn from the mother and child, and treated as in the previous experiments (Table 3).

TABLE 3.—REACTION BETWEEN BLOOD OF MOTHER AND OFFSPRING

	Room Temperature		37 C.	
	Mother's Blood Cells	Child's Blood Cells	Mother's Blood Cells	Child's Blood Cells
Mother's serum	+	+	—	—
Child's serum	—	—	—	—
Saline solution	—	—	—	—

It will be noted that the agglutinins persisted in the mother's blood even after delivery, and the mother's serum agglutinated the blood cells of the offspring, but that no agglutinins were detected in the child's serum.

SUMMARY

Autohemo-agglutination was observed in a pregnant woman suffering from a chronic heart lesion, and in a condition of severe anemia due to repeated bleeding from hemorrhoids. The auto-agglutination, like that observed by other investigators, occurred only at room temperature and not at 37 C. The agglutinins were present in the serum; the blood cells were normal.

The patient's serum agglutinated the cells of normal individuals as well as its own and those of the infant.

No agglutinins were detected in the infant's serum one week after birth. Passage of agglutinins did not, therefore, occur.

Autohemolysin was not noted at any time during the period that the patient was under observation.

The agglutinins persisted after delivery until the discharge of the patient. Subsequent to discharge, the patient was lost sight of.

The relation of the agglutinins to the disease cannot be determined. The experiments of Robertson and Rous[7] indicate that severe anemia may bear some relation to this condition. In the patient here studied, the anemia was severe and persistent, and due to repeated bleeding, as with the rabbits of the authors mentioned. It is also of interest that this patient, like that of Clough and Richter,[1] suffered from a chronic heart disease.

It is noteworthy that the autohemo-agglutinins, like the autohemolysins observed by Landsteiner in paroxysmal hemoglobinuria, act only at low temperatures. It is conceivable that just as in the latter case hemolysis can be produced by chilling the peripheral vessels, so in the former condition chilling will produce clumping of the red cells. Such clumping would, however, be only temporary, since the clumps are disintegrated by warming.

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[6] Rous, Peyton, and Robertson, O. H.: Footnote 5, first reference.

[7] Robertson, O. H., and Rous, Peyton: Footnote 5, second reference.

INTESTINAL PARASITES AS A FREQUENT CAUSE OF UNDIAGNOSED MALADIES IN CHILDREN

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The general practitioner, more especially if he is engaged in active rural practice, is frequently confronted with the problem of diagnosis without the assistance of various instruments of precision, laboratory reports or competent medical and surgical consultation. Too often a correct diagnosis is carelessly made incidental and secondary to therapeutic administration. While the physician is primarily to blame for this reversed condition, the patient invites neglect by refusing to be examined or to allow an ordinary scientific investigation.

It is not uncommon for a patient to assert that he thinks a physical examination valueless and laboratory or bedside technic superfluous. His untrained status is exhibited in the thought that a quick history and an indifferent inspection should suffice. The foregoing is often responsible for such absurd diagnoses as "bad liver," "enlarged spleen," "bad kidneys," "nervous indigestion" and "worms." It is often apparent that patients prefer a prompt, unintelligent and ill-defined diagnosis to a delayed diagnosis born of sincere investigation and collected data.

It is most interesting to note the similarity of symptoms of many diseases. This is particularly true with children.

I know of no other condition which is so often suggestive of various diseases and invariably overlooked by the physician because of the desire to exact from him a first visit diagnosis. In any given case in which a child presents a chain of vague and indefinite symptoms, it is very important to reserve a diagnosis for ruling out parasitic infection as a possible causative factor. I am of the opinion that medical colleges pay too little attention to the diagnosis and treatment of intestinal parasites. Pediatricians are wont to exclaim that intestinal parasites are most often diagnosed by the presence of the parasites or their ova in the stools. I do not agree with a leading pediatrician that "the frequency of the occurrence of intestinal parasites has unquestionably diminished greatly." This may be true of the urban child, but it is certainly not true of the rural child. The diminution is more apparent than real. If a careful analysis were made of all the stools when suggestive symptoms of parasitic infection are presented, I am sure that the percentage of diagnosis of intestinal parasites would be much higher than is generally credited.

Much is seen in the literature about the "acute abdomen." In differentiating and mentally racing up the most common causes of the "acute abdomen," the physician or surgeon usually considers acute infections of the appendix and gallbladder, perforation of a duodenal, gastric or typhoid ulcer, intestinal obstruction, and acute dilatation of the stomach following operation. But how many ever seriously consider intestinal parasites as a possible source of acute abdominal conditions? On two occasions I have witnessed a surgeon much chagrined because he found a large mass of roundworms causing the very symptoms he thought to be indicative of acute appendicitis, for which he had operated.

To illustrate more fully the importance of considering intestinal parasites in differential diagnosis I report five cases:

REPORT OF CASES

Case 1.—C. B., a boy, aged 10, complained for several days of feelings of lassitude and inaptitude for school work. His previous health had been good. He next complained of a severe occipital headache and abdominal pain. Four days from the onset of the initial symptoms, there were occipital headache, abdominal pain, vomiting, anorexia, tympanites, epistaxis, cheeks flushed, toxic, tongue heavily coated, foul breath, and a decided diarrhea. A tentative diagnosis of typhoid fever was made. There was a mottling of the skin on the abdomen, but no evidence of rose spots. The Widal reaction was negative, as was the blood culture for typhoid bacilli, paratyphoid A and B, and colon bacilli. The diazo-reaction for a typhoid urine was negative. There was a decided indicanuria. The temperature, which had been from 104 to 105, had a morning remission of 1 or 2 degrees. The headache, abdominal pain, tympanites and temperature were constant symptoms. Ten days after the initial onset, the patient passed an immense roundworm. Castor oil was given that night, followed the next morning with santonin and calomel. In a few hours the patient passed twenty-seven huge roundworms. The patient's condition became decidedly better, and the temperature dropping to normal. Cessation of all pain was immediate, and there was a prompt and uneventful recovery.

Case 2.—C. M., a girl, aged 6, when first seen was vomiting a fluid of greenish hue that had a distinct fecal odor. There were severe abdominal pain and marked distention. There had been no evacuation of the bowels for two days. The temperature was subnormal and the pulse rate rapid. Respiration was labored and accelerated. A diagnosis of intestinal obstruction, intussusception, was made, and a surgical operation advised. Operation revealed a large mass of roundworms coiled about a fecal impaction.

Case 3.—A. W., a girl, aged 3, had been, apparently, well up to the sudden onset of twitching of the body, which became severe and convulsive. The temperature was normal and there was a history of free evacuation of the bowels. Physical examination was otherwise negative. The convulsions became so severe that chloral and bromids were administered by the rectum. The convulsions continued, but became less severe. A history of intestinal parasites prompted me to administer castor oil, followed by santonin. There was an expulsion of twenty medium sized roundworms, with a speedy cessation of convulsions and recovery.

Case 4.—F. C., a boy, aged 7, for several days complained of pain in the stomach. There later developed a sensation of choking, with a desire to vomit. There was difficulty in swallowing. There was a profuse outpouring of saliva suggestive of salivation. During an attack of vomiting, two roundworms were thrown off, and recovery was prompt.

Case 5.—L. D., a girl, aged 4, was extremely toxic, with a temperature of 104 or 105 for six days. No other symptoms were present. Physical examination revealed nothing. Castor oil and santonin were administered. A large number of roundworms were expelled, with a most prompt recovery.

Syphilis in Persia.—C. Christidi of Constantinople writes to the *Presse médicale* to comment on the extreme prevalence of syphilis in Persia and its exceptionally mild form. When Europeans contract it from a native it takes a similarly mild form, but in natives and others contracting syphilis imported by a European, the course is the usual evolution seen elsewhere. Among the 3,000 Persian syphilitics he encountered, barely fifty had taken any regular treatment; the others failed to return for treatment after the first manifestations had subsided, but the Wassermann reaction is negative in a year or two as the rule. The archeologic collections contain many representations of syphilitic lesions, and Christidi is inclined to believe that the spirochetes of syphilis have become attenuated during the centuries, as the evidence has convinced him that syphilis was known in Asia for centuries before it appeared in Europe.

REMOVAL OF DIPHTHERITIC EXUDATE FROM THE LARYNX

EMPLOYMENT OF AN APPLICATOR FOR THE PURPOSE OF AVOIDING INTUBATION

CHARLES A. THOMSON, M.D.
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NEW YORK

The chief problem that confronts those dealing with the treatment of diphtheria is how to reduce the mortality in the laryngeal form, especially in cases in which intubation is performed. In the latter, several factors further complicate the situation. There are the difficulty of taking nourishment; the increased flow of saliva caused by the irritation of the tube and the consequent coughing, which add much to the child's discomfort; also the extreme restlessness that so frequently follows intubation, especially in younger children. All of these tend to lower the child's resistance and render him less able to resist the disease. Further, the susceptibility to bronchopneumonia is greatly increased. This complication accounts for most of the deaths in the laryngeal form. Finally, a patient requiring intubation may develop complications which necessitate the permanent wearing of the tube. The management of a "chronic tube" case taxes the physician's ingenuity to the utmost. Anything that will tend to protect the patient from all these dangers is welcome.

In taking cultures directly from the larynx, we were frequently struck by the fact that, in a large number of cases, the dyspnea was caused either by loose membrane which was drawn into the lumen of the larynx by inspiration, thus occluding it, or by a thick mucopurulent material which the patient seemed unable to cough up. In only a small number of cases was the dyspnea due to the attached membrane alone or to an inflammatory stenosis. It was further noticed that this loose membrane came away frequently on the swab; the coughing that followed the withdrawal of the swab frequently expelled the mucus, with the result that the child, who was sometimes ready for intubation, received immediate marked relief; this relief lasted in some cases for six to ten hours. It then occurred to us that, if some means could be devised whereby this obstructive material, which tends to re-collect after a number of hours, could be more thoroughly removed, many patients could be saved from intubation.[1]

A straight applicator with a screw clasp on the tip, to which a piece of gauze could be firmly attached so as to prevent its being lost in the larynx, proved suitable. The gauze plug was just large enough to pass into the lumen of the larynx without using force. A strip of ¼ inch packing folded two or three times upon itself answered the purpose well. Under direct laryngoscopy this was passed into the larynx just below the cords, and immediately withdrawn. The withdrawal of the swab, acting somewhat like the plunger in a syringe, brought with it a large amount of the mucus and frequently good sized pieces of loose membrane. In a few cases a complete cast was removed. The remaining mucus was effectually removed by the coughing that followed.

The result of this procedure was surprising in many cases; patients that were cyanotic and perspiring received as much relief as from intubation—relief that lasted from eight to ten hours, and in some cases was permanent. During this period the child could take nourishment easily, had several hours' uninterrupted sleep and, as a result, his general condition remained much better than if intubation had been done. Usually the applicator treatment had to be repeated two or three times and, in two cases, four times. Two cases complicated by pneumonia were thus treated. The treatments were successful in that they made intubation unnecessary. One patient that had a consolidation of one lung died about twenty-four hours after admission; the other recovered. The youngest patient treated was a child, aged 7 months. In this case one treatment was sufficient, and the child went on to recovery. The oldest child was 12 years old, and had been brought to the hospital in an almost moribund condition. She obtained such relief from this treatment that later she asked to have it repeated. She also recovered.

In no case did we see pneumonia develop as a result of the treatment, nor did any accident occur from pushing the membrane down the trachea. It was noted, further, that aphonia disappeared earlier in these patients than in those in whom intubation was performed. Only those patients were treated that in our opinion would otherwise have required intubation. On admission all laryngeal patients received 5,000 units of antitoxin intravenously.

The total number of patients treated was fifty-three. Of these, thirty-seven were enabled to go without tubes; in sixteen cases, no marked relief was obtained, owing to the presence of an inflammatory stenosis. Of the sixteen, three had undergone intubation by the family physician and had worn their tubes several hours before admission to the hospital. The tubes were then removed, and an attempt was made to clear the larynx; but we have found that, when a tube has been worn for some time, a considerable amount of local reaction has already developed in most cases. Favorable results with the applicator treatment have not, as a rule, been obtained in these patients.

The results of the applicator treatment are given in the accompanying table in comparison with the figures of the corresponding three months (October, November and December) of the previous year.

RESULTS OF APPLICATOR TREATMENT

	1919	1920
Number of cases of diphtheritic laryngitis	159	132
Patient neither intubated nor treated with applicator	84	79
Patients intubated	75	16
Patients receiving applicator treatment (not intubated)	0	37
Total number of deaths	42	20
Mortality	26%	15%

Of the seventy-nine patients in 1920 that were treated neither with intubation nor with the applicator, nine died—three of sepsis and bronchopneumonia, and six of bronchopneumonia.

Among the sixteen patients that received intubation there was a mortality of ten (due to bronchopneumonia).

Of the thirty-seven receiving the applicator treatment, one died (of bronchopneumonia).

It will be seen from this table that there has been a marked reduction in the number of patients receiving intubation and a considerably lower mortality. It is our belief that were this procedure carried out systematically, it would materially assist in lowering the mortality in this type of case. It is a method, however, that makes great demands on the time of the physician, and requires his constant care and supervision. We do not advise the removal of the material from the larynx by any other than the direct method, as otherwise more harm than good is likely to be achieved. Further, it is hardly necessary to add that the direct method should be attempted only by those experienced in laryngoscopy and intubation.

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[1] The average time of intubation in cases of laryngeal diphtheria is six hours after admission. With the use of antitoxin intravenously, only a small number of the patients that require intubation need it after the first twelve hours (twenty-two out of 286 patients who underwent intubation).

PHENOBARBITAL (LUMINAL) POISONING

REPORT OF CASE

JOHN PHILLIPS, M.B.
CLEVELAND

Within the last two or three years phenobarbital (luminal) has been used extensively as a hypnotic and sedative in various nervous conditions. In May, 1913, this drug was thus described in the "New and Nonofficial Remedies" department of The Journal:[1]

> It has a sedative action on respiration, lessening the frequency of breathing, although the volume of each respiration is increased. It kills by respiratory paralysis. It is eliminated by the kidneys, a certain portion being probably decomposed in the organism. No injury to the kidneys or gastric disturbance has been observed.
>
> Luminal is claimed to be a useful hypnotic in nervous insomnia and conditions of excitement of the nervous system.
>
> *Dosage.*—From 0.2 to 0.3 Gm. (3 to 5 grains) increased if necessary to 0.8 Gm. (12 grains). A maximum dose of 0.8 Gm. (12 grains) should not be exceeded. Smaller doses are sometimes efficient.

Sollmann[2] mentions the fact that the hypnotic and fatal doses are close together and that the circulatory depression is severe. Taddei, in 1913, protested against its use as too dangerous; and, although since that time various other writers have called attention to the occurrence of severe dermatitis with alarming symptoms following the administration of phenobarbital, but little attention has been paid to these warnings of danger.

Since Grinker[3] called attention to the beneficial results from its use in cases of epilepsy, phenobarbital has been employed by a great many physicians in the treatment of that disease and of other nervous disorders. The dosage in many of these cases has been so large, and the drug has been administered over such a long period of time, that it seems appropriate to call attention to the following case in which severe dermatitis with fever, sore throat, severe gastro-intestinal symptoms and nephritis resulted from the use of this drug and to review reports of similar cases reported in the literature.

REPORT OF CASE

A woman, aged 45, had suffered for a number of years from bronchial asthma. Various forms of treatment had been tried—change of climate, use of iodids, etc.—but the only medication that gave any relief from the attacks was the hypodermic administration of epinephrin. During the preceding three years, she had taken nightly from one to three doses of 7 minims (0.5 c.c.) each, except during short intervals when she was comparatively free from the disease. I saw this patient first, Jan. 24, 1922. In an attempt to secure more rest and to eliminate the use of epinephrin, phenobarbital, 1½ grains (0.1 gm.) was prescribed to be taken at bedtime. As a result, the patient slept better and was able to get along with less epinephrin. After she had taken eight doses or 12 grains of phenobarbital over a period of eight days, the patient developed over the entire body a morbilliform eruption, which appeared first on the face about the eyes, and on the neck, but within forty-eight hours had spread over the trunk and to the extremities, even affecting the fingers. The face was considerably swollen, the conjunctivae were reddened, and finally the eruption on the face became confluent. There was no circumoral pallor, such as is seen in scarlet fever. The lesions on the trunk and extremities were discrete and papular, and were larger than the lesions in measles. The papules were very firm to the touch, and the skin between them was reddened. There was marked burning and itching of the skin. The mucous membrane in the mouth and throat was bright red, the tonsils were somewhat swollen, and on the sides of the cheek between the latter and the gums, little flecks of white appeared on the mucous membrane. The tongue was dry, coated and slightly swollen. The patient complained a great deal of dryness and burning in the throat. The glands in the neck, particularly those at the angle of the jaw, showed some enlargement. At the same time the patient developed pain in the epigastrium with persistent nausea and vomiting, which lasted four days. There was slight distention of the abdomen, but no localized tenderness or rigidity. Diarrhea was not present but the stools contained some mucus. The urine was very highly colored, and an examination on the third day of the eruption revealed an acid reaction with specific gravity 1.010, a very heavy trace of albumin, no sugar, and a faint trace of bile. Microscopic examination of the urinary sediment revealed a few red blood corpuscles, a few leukocytes, a number of epithelial cells, and many finely granular casts. The leukocyte count was 8,000. The temperature on the first day of the illness was 102 F.; on the second day 103.6, and on the fourth day 105.2, after which it gradually declined to normal. There was nothing unusual about the pulse except that the increased rate corresponded to the increase in temperature.

The rash began to subside on the fourth day, its color gradually fading out with a fine, branny desquamation on the seventh day. With the subsidence of the eruption, the itching of the skin disappeared, and the inflammation of the mucous membrane of the mouth and throat gradually disappeared. The patient was very much prostrated after the drop in temperature. The urine quickly cleared up, and on the tenth day after the eruption appeared, albumin had disappeared except for a very faint trace, and no casts could be found.

CASES REPORTED IN THE LITERATURE

Farnell,[4] in one of the earliest papers calling attention to the toxic effects of phenobarbital, reports two cases of phenobarbital poisoning in which the toxic symptoms lasted from twelve to thirty-six hours:

> A woman, aged 24, was given 0.3 gm. (4½ grains) of phenobarbital as a sedative, with directions to repeat the dose in forty-eight hours. She waited only twenty-four hours before taking the second dose. She slept until 10 o'clock the following morning, when she was awakened, and showed evidences of toxemia, paraphasia, ataxia, inability to stand without support, dilated pupils, and diminution in knee jerks. There was no disturbance of sensation, and the symptoms disappeared in twelve hours.
>
> A woman, aged 35, who was given 0.6 gm. (9 grains) of phenobarbital at 10 p. m. as a sleeping medicine, received a second dose of 0.3 gm. (4½ grains) one hour later. At 2 a. m. the patient was still awake and asked for more, but instead was given 0.2 gm. (3 grains) of barbital (veronal). She went to sleep at 4 a. m. and was awakened at 10, still very sleepy and showing difficulty in articulation, with poor

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[1] Luminal, J. A. M. A. **60**: 1541 (May 17) 1913.

[2] Sollmann, Torald: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, Philadelphia, W. B. Saunders Company, 1917, p. 600.

[3] Grinker, Julius: Experiences with Luminal in Epilepsy, J. A. M. A. **75**: 588 (Aug. 28) 1920.

[4] Farnell, F. J.: Luminal: Its Toxic Effects, J. A. M. A. **61**: 192 (July 19) 1913.

pronunciation of her words, and marked ataxia. Her gait was unsteady and she had a tendency to fall. She had symptoms of gastro-intestinal disturbances, and the knee jerks were absent. The duration of the disturbance was about forty-eight hours.

Blichert,[5] in describing the by-effects of phenobarbital, states that, in five of the thirteen cases in which he had administered this new hypnotic, signs of intoxication were evidenced. In two, apparently no effect was produced. In six, in addition to the anticipated action, there were certain by-effects, and in five cases there were unmistakable signs of toxic action, appearing in one after two weeks, and earlier in the other four cases. In three of the latter, the phenobarbital had no therapeutic effect at all. Blichert cites two cases of phenobarbital eruptions among 150 patients reported on by Eder, and two cases among seventy-two patients reported on by Graeffner. In Blichert's series, the eruption occurred in three of the four cases in which the drug produced marked toxic action. In these cases the exanthem was very pronounced, and in one instance, after it had subsided, it reappeared in full intensity after a week's interval without any of the drug having been given in the interim. Blichert's dosage was from 0.2 to 0.3 gm. (3 to 4½ grains) two or three times a day, or 0.1 gm. (1½ grains) in the morning, and 0.2 (3 grains) in the evening. In some of the cases, barbital was taken coincidently or alternating with the phenobarbital, but in two of the patients in whom the toxic action was most pronounced only phenobarbital had been given.

Ungar [6] makes the occurrence of a nearly fatal outcome, after the ingestion by a patient of 2.4 gm. (37 grains) of phenobarbital, the text for a discussion of the use of the drug; the uncertain results of small doses, and the poisonous effect of larger doses. He calls attention to the fact that small doses often show a cumulative action.

In Ungar's case the outstanding feature was the amaurosis, which resembled that produced by methyl alcohol, excepting that in alcohol poisoning changes in the optic nerve are demonstrable, while in this case the eye grounds showed no alteration.

Ungar deplores the fact that the dispensing of this drug is not sufficiently guarded.

Hueber [7] reports the case of a man, aged 40, who had had epileptic attacks since his tenth year.

May 11, the author prescribed phenobarbital sodium in 0.5 gm. (7⁷⁄₁₀ grain) tablets. By June 10, the patient had taken a total of thirty tablets, or 15 gm. (231 grains). June 10, a papular eczema appeared on the nape of the neck and on the back of the hands between the thumbs and forefingers. Up to this time, the patient had had no epileptic attacks, and the author warned him not to stop the tablets, but does not state what dosage was continued. June 14 and 15, the patient had anuria for twenty-four hours, and at the same time an eruption like that of measles appeared on the whole body. The lips were swollen, the eyelids edematous, and the patient became quite drowsy in contrast to the earlier weeks, during which the phenobarbital had not caused any periods of sleepiness. In the first urine that was passed, there were no casts. Hueber states that "this was a great comfort to me, for I had assumed an onset of acute nephrosis." On the next day, the eruption was in large spots, dark in the center, surrounded by a bright red areola with a dark red rim. The spots were separated only on the trunk. On the forehead, back of the elbows, and from the navel downward, the spots flowed together into a single red, densely infiltrated surface. On the right foot and over the whole calf there was marked edema. The edema on the left leg was confined to the outer part of the foot, where the eruption was hemorrhagic. On pressure over the spots on the trunk, only a central light yellow spot remained, but pressure did not change the appearance of the eruption on the foot. Finally, the eruption took on the character of a chronic, infiltrated, desquamating eczema covering the whole body, including even the palms of the hands and soles of the feet. Desquamation, during which the skin was shed in great shreds, was completed by a full plunge bath.

For the supposed nephrosis, Hueber prescribed rest in bed and limited fluid, with a resultant increase in the urinary secretion of 0.5 or 0.75 liter to 1 liter (quart) on the fourth day. As a result of elevating the legs, the edema entirely disappeared by the end of the first six days. June 23, the eruption began to return with fever, cough and expectoration. Signs of an inactive tuberculosis developed in both lungs. A high fever developed; clots of blood appeared in the expectoration, and finally the patient became delirious. Death followed an injection of morphin after the alarming symptoms of tuberculosis had lasted ten days.

Hueber states that this whole picture indicated an alteration of the cutaneous vessels—a capillaritis which, as was indicated by the anuria and oliguria, as well as by the edema of the legs, attacked the internal organs also. The reaction in the lungs, i. e., the increased secretion and the numerous râles, is analogous to the reaction to tuberculin injection. Although Hueber made the diagnosis of tuberculosis, in the absence of the finding of tuberculous bacilli in the sputum, the question might very well be raised as to whether the pulmonary symptoms were not the result of the irritation from the phenobarbital poisoning.

Haug [8] describes two epileptic patients—women—one with status epilepticus, for each of whom he prescribed phenobarbital, 0.1 gm. three times a day (a daily dose of 4½ grains).

The first patient, four weeks after beginning treatment, having taken 8.4 gm. of phenobarbital (130 grains) suddenly developed high fever, diarrhea with bloody mucus, and an eruption like that of scarlet fever over the whole body with the exception of the hands and face; she appeared very ill and was in a light stupor. Two days after the phenobarbital treatment was stopped, the fever left, and the eruption disappeared.

The second patient, after taking phenobarbital for eleven days, a total of 3.3 gm. (51 grains), developed high fever, a scarlatiniform eruption, mucous diarrhea without blood, albuminuria, and severe sensory disturbances. The symptoms disappeared within a few days after the medication had stopped.

In discussing these cases, Haug remarks upon the small dosage which produced the condition. He thinks that the explanation of the occurrence in these cases was the undernourished and generally exhausted condition produced by the epileptic attacks, and that the dosage should be reduced to from 0.2 to 0.25 gm. (3 to 4 grains).

Stein [9] reports a case of phenobarbital poisoning in a strong, well nourished man, aged 48, who, after taking a single dose of 0.3 gm. (4½ grains) of phenobarbital, experienced severe dizziness with nausea, clouded vision and diplopia. Three hours later his appearance became so alarming that injections of caffein sodiobenzoate became necessary. His recovery was complete the following day. The author warns against the prescription, under any circumstances, of a dose of phenobarbital exceeding 0.1 gm. (1½ grains), and states that the prepared tablets which are dispensed by apothecaries and contain 0.3 gm. (4½ grains) should be done away with to avoid errors. He states further that the maximum dose of 0.3 gm. (4½ grains) should be prescribed only in exceptional cases, and quotes the warnings of Hauptman, Stockmeyer and Borner against the possible danger of large doses.

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[5] Blichert: Ugesk. f. Læger **75**:-1149, 1913.
[6] Ungar, J.: Wien. klin. Wchnschr. **27**: 847, 1914.
[7] Hueber: München. med. Wchnschr. **66**: 1090, 1919.
[8] Haug: München. med. Wchnschr. **66**: 1494, 1919.
[9] Stein: Therap. Halbmonatsh. **34**: 387, 1920.

Zimmerman[10] calls attention to the necessity of greater care in dispensing phenobarbital, and urges that this drug should not be dispensed by apothecaries without a prescription from a physician.

He reports that in his absence his wife one evening took four phenobarbital tablets of 0.3 gm. (4½ grains) each at one hour intervals, having secured these tablets from an apothecary who would not dispense the barbital she asked for without a prescription. The apothecary did not give her any information regarding the proper dosage, nor was any dosage noted on the label of the package. When the patient went to sleep, she had exciting dreams, and at 7 o'clock in the morning was awakened by violent nausea. She was much weakened, could not stand up, and could utter only indistinct single syllables. She slept again until 3:30 p. m., when she wakened with a severe headache and vomited at intervals until late in the evening. On the following day she still had severe headache and dizziness, with fainting spells. On the second day she could neither move nor answer questions, although hearing and sight were unimpaired. These unpleasant symptoms lasted for a whole week. Five days later on awakening she again experienced a spasm, in which, in spite of strong attempts, she was unable to move her legs. After eight days, a very irritating eruption of the skin appeared which lasted for several days.

Weber[11] follows a report of three cases of epilepsy in which phenobarbital was successfully used by a report of two cases of phenobarbital exanthem with angina and fever. The temperature chart of one of these cases strikingly resembles that of the case that I reported.

CONCLUSIONS

1. In view of the severe skin rashes, gastro-intestinal symptoms and nephritis that may develop as the result of the use of phenobarbital, this drug should be administered with great care.

2. Since there is little difference between the therapeutic and fatal dose, phenobarbital should not be prescribed in single doses of more than 1½ grains (0.1 gm.), and not more than 3 grains (0.2 gm.) should be taken in twenty-four hours.

3. A patient under phenobarbital treatment should be instructed that, on the first appearance of a skin rash or of any untoward symptoms, he should stop the drug and report to his physician at once.

4. The urine of a patient under phenobarbital treatment should be examined once or twice a week.

5. Phenobarbital should not be dispensed by druggists except on the prescription of a physician.

Pellagra in Italy.—Our Italian exchange *Lavoro* publishes an account of the report recently issued on the results of investigation of pellagra in Italy by an official committee of nine members appointed in 1910 for the purpose. It has been found that the incidence of pellagra declined during the war, and this is ascribed to the changes in the quality of the food for various reasons connected with the war, especially the scarcity of corn.

Clinical Notes, Suggestions, and New Instruments

A CASE OF LARVAE IN THE MALE URETHRA [*]

William J. Ezickson, M.D., Philadelphia
Instructor in Urology, Graduate School of Medicine of the University of Pennsylvania

About 2 o'clock in the afternoon of Sept. 10, 1920, D. W. A., aged 31, married, a tailor, came into my office complaining of intense itching in the urethra, and stated also that he could squeeze out some "white stuff." Believing I was dealing with a urethritis, I proceeded to prepare a slide in order to make a smear. When I squeezed the urethra for a drop, several small, wormlike objects crawled out of the meatus. I managed to catch one on the slide and preserved it in balsam.

The man stated that he first felt this itching on arising that morning. He denied venereal infection at any time, and had not noticed the present symptoms before. On examining his wife I found no symptoms referable to the vagina or urethra, and no specimen like that in the patient.

The slide was examined by Dr. Case at the Polyclinic Laboratories, and by Dr. McFarland at the University Laboratories, who detected larvae but could not tell of what species. The entomologist at the Academy of Natural Science was unable to identify the species of larva.

After one irrigation of the urethra with a 1:4,000 potassium permanganate solution, the man had no further symptoms. The mode of implantation and the species of larva remain a mystery.

Most of the cases of larvae in man referred to in the literature are of larvae found in the excreta and the vomitus, having been ingested with food or drink. The larvae mentioned are those of *Eristalis, Piophila casei* and two species of *Fannia*. The best authenticated cases of myiasis of the urinary passage have been due to larvae of *Fannia*. Chevril (1909) compiled and described twenty cases, of which seven seemed beyond doubt. The larvae of the common house-fly are occasionally recorded as having been passed with the feces or vomit of man.

The larvae of *Chrysomyia macellaria* have been found in the nasal passages and sinuses. Larvae have also been found in the ears and eyes. The larvae of *Sarcophaga* have been reported in the vomitus, in external malignant tumors and in the vagina of girls and women who have lain naked in the summer days on dirty clothes, or when they have had a discharge from the vagina, the fly being attracted by the odor and depositing its eggs.

1624 Spruce Street.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.
W. A. Puckner, Secretary.

BENZOCAINE (See New and Nonofficial Remedies, 1922, p. 39).

Benzocaine-Seydel.—A brand of benzocaine-N. N. R.

Manufactured by The Seydel Manufacturing Company, Jersey City, N. J. No. U. S. patent or trademark.

PROCAINE (See New and Nonofficial Remedies, 1922, p. 35).

Ven Sterile Solution Procaine 1 Cc.: Each ampule contains 1 Cc. of a 1 per cent. solution of procaine-N. N. R.

Prepared by the Intra Products Co., Denver.

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[10] Zimmermann: Therap. Halbmonatsh. **34**: 79, 1920.

[11] Weber: Therap. Halbmonatsh. **15**: 467, 1921.

[*] Read before the Pathological Society of Philadelphia, March 23, 1922.

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SATURDAY, APRIL 22, 1922

THE ST. LOUIS SESSION

The splendid cooperation given by the Local Committee of Arrangements for the St. Louis Annual Session to the officers of the American Medical Association is full of promise for a successful and enjoyable meeting. The announcements which appear in this, the St. Louis, number of THE JOURNAL are further evidence of the excellent work done by this committee in arranging for the Session. The social events include numerous functions during each day of the session and a full program for the entertainment of the ladies during the hours that will be devoted to section work by the Fellows. One feature is a unique open air opera performance which has been secured especially for the visitors to this session of the Association. St. Louis is advantageously situated to make the meeting a truly national one. It is a railroad center, easy of access from the North, South, East and West, and the passenger associations have announced special round-trip rates which may be secured on presentation of the usual identification certificate. There need be no fear of hot weather; the temperature in St. Louis in May generally is delightful. The Committee on Hotels announces that the reservations indicate an unusually large attendance. While some of the more popular hotels have made reservations to their capacity, this committee, with the assistance of the Convention Publicity and Tourist Bureau, is arranging so that comfortable quarters will be available for all who attend the session.

The halls and meeting places are grouped about a center located at Grand Avenue and Olive Street. The most distant hall from that point is approximately six blocks, most of the meeting places being within two or three blocks of the center named.

Plans are being perfected to broadcast by radio the music and addresses delivered at the opening general meeting of the Association.

THE NATURE OF RHYTHMIC CONTRACTIONS

The fact that the isolated heart, detached from its connections with the central nervous system, can continue to beat with regularity gave rise long ago to the assumption that the function of the cardiac musculature is independent of nervous regulation so far as its automatic rhythmicity is concerned. But the cardiac tissue includes nerve cells or ganglions as well as muscle cells, so that the question was soon raised whether the latter may not, after all, "act as the servants of the local ganglion cells, just as the voluntary muscles wait on the commands of the cells in the spinal cord and brain." The uncertainty with respect to the answer as to the primary cause of such automatic contraction is responsible for the long debate regarding the neurogenic and myogenic theories of the origin and conduction of the heart beat. It is still undecided; at any rate, one of the most recent reviews[1] states that the myogenic-neurogenic controversy becomes a question to be decided by the histologist and the neurologist. and is a matter of the fundamental nature of the "neuromuscular" tissues composing these structures. Recognition of this fact is perhaps no better expressed than by the great reduction of contributions to the literature, during the last ten years, concerning this prolonged and formerly active physiologic controversy. According to this view, we are further told, the tissues comprising the two nodes and the bundle, with its ventricular connections, are to be regarded as that part of the heart which serves the function of initiating the excitation (property of automaticity or response to the "inner stimulus") and distributing it in a coordinated manner to the musculature of the auricles and ventricles, the main function of which is contraction.

The elucidation of the nature of cardiac function is not merely of academic interest. It is closely related to many questions of the pathologic physiology of the heart, such as are presented by auricular fibrillation and by other abnormalities which the use of the electrocardiograph and other technical aids to diagnosis have brought into prominence. The pharmacology of cardiac drugs and the rational therapy of the neuromuscular affections of the heart take cognizance of the theories of muscular function. This is similarly true in the case of another prominent system—the gastro-intestinal musculature—which likewise is subject to "independent" rhythms that raise anew the question of myogenic and neurogenic origin, respectively.

Bayliss and Starling of London, who have been pioneers in the study of intestinal movement, have long championed the view that the rhythmic contractions of the bowel are myogenic in nature: that they are propagated from muscle fiber to muscle fiber. Most writers, on the other hand, have argued for the neurogenic origin of the rhythmic contractions of the intestine. In an elaborate review of the subject, supplemented by experimental evidence of their own, Alvarez and Mahoney[2] of the University of California now conclude that "there is no need of looking beyond the muscle for the source of the rhythm." They admit that in most cases the muscle works better for the presence of its nervous plexus. The immediate effect of the removal of the nerves is shock and spastic paralysis; and, when that is recovered from, one cannot expect the tissue to work quite so well as it did normally. The conduction from muscle bundle to muscle bundle must remain impaired.

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[1] Eyster, J. A. E., and Meek, W. J.: The Origin and Conduction of the Heart Beat, Physiol. Rev. 1: 1 (Jan.) 1921.

It is assuredly most appropriate to call attention to the importance of muscle as well as nerve tissue in the study of rhythmic functions. However, the history of physiologic controversies, such as have been waged intermittently in connection with the theory of the heart beat, should warn us not to be too dogmatic. It may be, as the California investigators feel, that the tendency to push the explanation for vital phenomena out of the organs in which they might be studied and into elusive little ganglion cells is often unfortunate, and conducive more to stagnation of thought than to advancement of knowledge. In any event, however, the application of a new method of study, electrogastrography, which Alvarez[3] has described in THE JOURNAL, may help to elucidate the problems of alimentary functions somewhat as electrocardiography has done for the heart. Already the use of such expressions as "gastric pacemaker" and "pyloric block" affords a reminder of the analogous problems often discussed by the modern electrocardiographer; and it gives some hope that the pathology of peristalsis and related phenomena may presently be subjected to that accurate sort of interpretation which is made possible by methods of scientific precision.

RECENT OBSERVATIONS ON YAWS (FRAMBESIA TROPICA)

When Ehrlich undertook his original studies leading to the discovery of arsphenamin, he undoubtedly was stimulated by a hope that had long inspired students of therapy—the hope of finding a *therapia sterilisans magna,* a treatment that would require only a single large dose to destroy the parasitic invaders of the body. In this he was partially defeated, and consequently the promises based on the original experiments on animals were not realized, because the therapeutic dose appears to fail to reach some of the spirochetes, which may hide in the tissues and become responsible for unanticipated relapses.

There is one disease, however, in which it has been believed that the *therapia sterilisans* in Ehrlich's meaning may be capable of realization. In frambesia tropica, the tropical specific infectious and contagious disease caused by *Spirochaeta pertenuis* and often called yaws, the administration of arsphenamin was first tested by Nichols in the experimental disease induced in monkeys, and by Strong in the treatment of the disease in man, and the results have been most striking.[1] The commission sent by the School of Tropical Medicine at Harvard University during the summer of 1920 to study yaws in the Dominican Republic[2] has just reported its experience in the treatment of the disease with neo-arsphenamin. Despite the fact that the commission was working under field conditions of the most unsatisfactory sort, with no facilities whatever for hospitalizing patients, the benefits of the treatment were unquestionably good.

It has been asserted that 90 per cent. of the cases of yaws can be cured by a single injection of arsphenamin. Moss and Bigelow[2] could not secure an equally successful outcome with neo-arsphenamin under the conditions in which they were compelled to undertake treatment. In many cases—and hundreds were observed—it was found necessary to repeat the injections. This might not have been the outcome if a longer interval between the treatments had been allowed, and if a larger adult dose (0.9 gm. instead of 0.6 gm. of neo-arsphenamin) had been employed. Nevertheless, the Harvard commission expresses its belief, as the outcome of an unusual experience in the West Indies, that Ehrlich's ideal of "sterilisatio magna" is more nearly obtained with arsphenamin or neo-arsphenamin in yaws than in the treatment of any other disease. Thus, in one series of 570 cases, only one patient (a "gomma" case) showed no improvement after three injections, and only ten patients (three "gomma" and seven clavus cases) showed no improvement after two injections. This, Moss and Bigelow add, is certainly in conspicuous contrast to the 113 cases which showed marked improvement after a single injection. One may well surmise, after studying this report in its details, that, when treatment can be instituted under even reasonably satisfactory conditions of observation and discriminating diagnosis, a highly effective outcome of the use of neo-arsphenamin would result.

As yaws is essentially a tropical disease, most readers of THE JOURNAL can scarcely be expected to realize the extent to which it may be distributed in certain regions. Hence it will come as a surprise to learn that the Harvard Commission observed more than a thousand cases within a short period in a few rather restricted localities among an estimated population of less than 800,000 persons in the Dominican Republic. Since yaws has been demonstrated not to be identical with syphilis, the problem of its origin and distribution has become more interesting. It does not take us far in these days to incriminate "dirt" and "insanitary conditions." Such indefinite possibilities of transmitting infection neither satisfy the critical student nor effectively assist the sanitarian. Moss and Bigelow, who have studied the distribution of the primary lesions in more than 800 patients, have concluded that sexual transmission as a common method may be excluded because of the fact that in only 1 per cent. of them were the genitalia involved. There was no evidence of hereditary transmission. The preponderance of the primary lesion on the lower extremities, as compared with the trunk, would seem to exclude transmission by the bites of either flying or nonflying insects which could equally well reach other parts of the body. The commission regards it as most probable that trauma, frequently minor in character, usually determines the site of the primary lesion in yaws. This is entirely compatible with the view that the disease may be transmitted by direct contact, or that insects, flies, etc., may be vectors of the virus.

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[2] Alvarez, W. C., and Mahoney, Lucille J.: The Myogenic Nature of the Rhythmic Contractions of the Intestine, Am. J. Physiol. **59**: 421 (Feb.) 1922.

[3] Alvarez, W. C.: The Electrogastrogram and What It Shows, J. A. M. A. **78**: 116 (April 15) 1922.

[1] Castellani, A., and Chalmers, A. J.: Manual of Tropical Medicine, Ed. 3, London, 1919, p. 1560. Garrison, F. H.: History of Medicine, Ed. 3, Philadelphia, W. B. Saunders Company, 1922, p. 748.

[2] Moss, W. L., and Bigelow, G. H.: Yaws: An Analysis of 1,046 Cases in the Dominican Republic (Illustrated), Bull. Johns Hopkins Hosp. **33**: 43 (Feb.) 1922.

THERAPEUTIC USE OF THE OXYGEN CHAMBER

The problem of oxygen therapy is not a new one. Ever since the days of Lavoisier, who declared that the life processes were those of oxidation, with the resulting elimination of heat, the importance of oxygen for physiologic function has been recognized. For a time it was assumed by many that the supply of this gas regulates metabolism, just as air fans the flame in ordinary combustion outside the body. Today it should scarcely be necessary to point out the untruth of such a conception, for we know that it is not the intake of oxygen that causes metabolism; rather, the extent and nature of the chemical changes in the body determine the amount of oxygen to be absorbed. Furthermore, oxidation is not confined, as was formerly conjectured, to the blood which carries the important gas to all parts of the organism. The tissues are the essential seats of those metabolic reactions in which oxygen assumes a rôle. Under ordinary circumstances there is an abundance of oxygen in the respiratory intake. It is present in quantities far larger than any capacity of the blood to carry it away, so that much of the popular talk, sometimes shared by physicians, about getting more oxygen into our lungs or our blood is based on an utter misconception of the chemistry and mechanics of respiration. Only when with falling barometer, as at high altitudes, the partial pressure of the oxygen in the air begins to decrease markedly, does the distress due to a lack of the gas begin to manifest itself. Gas tension plays a dominant part in the absorption and distribution of oxygen.

There are pathologic conditions, however, in which the opportunities for rapid exchange of gases through the lungs are not ideal. Sometimes they arise from an altered pulmonary circulation, sometimes from an impaired condition of the alveoli of the lungs. In such circumstances the supply of oxygen at higher tension in order to secure adequate absorption into the blood has seemed fully warranted. The occasional existence of hypo-oxemia, falsely designated as anoxemia, is now well established through studies on the actual composition of the blood made possible through the improved technic of blood gas analysis. The blood pigment, hemoglobin, may be less saturated with oxygen than normal. Treatment with oxygen thus attains a rational justification. The conventional devices by which a current of the gas has been admixed with the inspired air are usually ineffective in adding any considerable increment of oxygen; and the procedures are wasteful in the extreme. Efficacious and economical masks have been devised, but they are invariably a source of discomfort. Meltzer's insufflation method[1] is not easy of application. The bed tent devised by Leonard Hill of London represents a still different attempt to supply a patient with an atmosphere enriched with oxygen.

Obviously, an air chamber in which the character of the respired atmosphere may be perfectly controlled offers the ideal solution for the problem of oxygen therapy. The latest device of this sort, installed by Stadie[2] at the hospital of the Rockefeller Institute, New York, has already been tested in a few suitable cases of pneumonia.[3] It is a chamber easy of ingress and egress, economical in its cost of operation, and permitting comfort for the patient and attendants under conditions in which an atmosphere containing as much as 65 per cent. of oxygen can be maintained for long periods under exactly known conditions. In this oxygen chamber, the cyanosis of "anoxemic" patients for whom the use of oxygen by inhalation was clearly indicated disappeared in several cases of severe pneumonia, and relief was afforded.

It is too early to state whether the relief of obvious hypo-oxemia will regularly influence the outcome of lobar pneumonia, even though one must almost inevitably expect some benefit from such improvement of a physiologic function. Improved tissue respiration will not necessarily avert the dangers and damages of bacterial or other toxins. Although inhalation of pure oxygen for a long time is regarded as harmful,[4] Stadie's studies on man seem to demonstrate that prolonged inhalation of oxygen varying from 40 to 60 per cent. is without harm. The prospect of its benefit for the treatment of the anoxemia of pneumonia is increased by the fact, insisted on by Stadie, that an important pathologic condition to be counteracted is the great impairment of the respiratory surface of the lung. This is especially true when the pneumonic process extends throughout the lung so that there are many patches of bronchopneumonia, with accompanying bronchitis and edema, as evidenced by the presence of râles throughout the lung. Here every molecule of oxygen must be made to count, and the chamber is likely to assure a larger supply in the emergency. In any event, it is helpful to know that a workable and tested device has actually been installed for study.

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[1] Meltzer, S. J.: The Therapeutic Value of Oral Rhythmic Insufflation of Oxygen, J. A. M. A. **69**: 1150 (Oct. 6) 1917.

[2] Stadie, W. C.: Construction of an Oxygen Chamber for the Treatment of Pneumonia, J. Exper. Med. **35**: 323 (March) 1922.

[3] Stadie, W. C.: The Treatment of Anoxemia in Pneumonia in an Oxygen Chamber, J. Exper. Med. **35**: 337 (March) 1922.

[4] Smith, J. L.: J. Physiol. **24**: 19, 1899.

Current Comment

SPECIAL RATES TO THE ST. LOUIS SESSION

Special rate round-trip tickets to the St. Louis session of the Association have been authorized by the various passenger associations. These rates are available to all members and Fellows of the American Medical Association who present the usual identification certificate, which may be secured by writing to the Association Headquarters and accompanying the request with a self-addressed, stamped envelop. This concession to those attending the convention should stimulate a full attendance. It is advisable for those who contemplate the trip to write promptly for the necessary certificate.

BULLETINS OF NEW YORK'S MEDICAL CLINICS

For a number of years in New York, Chicago and Philadelphia, daily or weekly bulletins have been issued listing the clinics at the various hospitals in those cities; thus the clinics are made available to visitors as well as to local physicians who may care to attend them. In New York these bulletins were issued from the New York Academy of Medicine by the "Society for the Advancement of Clinical Study in New York." This organization was originally made up largely of surgeons, and the bulletins listed only the operative clinics. Recently, however, a committee of internists connected with this society began issuing also weekly bulletins giving in detail for the coming week the subjects to be presented in the various medical clinics. The result, we are informed, has been a remarkable stimulation of the men on the hospital staffs. Each afternoon from one to three clinics are given at each of the institutions, and they are well attended. It has been interesting to note that it is not alone the well-known men who attract, but also the subject being presented. The practitioner wants help on particular problems, and the programs show him where to go. These bulletins are bringing excellent results in furthering graduate education for the physicians of that community. The benefits will be further extended if a similar cooperation or centralized control can be secured of the graduate medical schools and individual graduate courses available in a great city. The methods followed are worthy of being considered in other cities that also have facilities for postgraduate instruction which are abundant but which are not available to the rank and file of the medical profession.

THE PYLORIC SPHINCTER AND DUODENAL MOTILITY

In 1899 the English physiologists Bayliss and Starling described a phenomenon common to the alimentary tract from the lower part of the esophagus to the rectum in a more or less well marked manner and to which they gave the name of "the law of the intestine." It concerns the movements brought about by the presence of food or similar contents at any particular part of the bowel. When the bolus acts as a stimulus to the latter, a cessation of the rhythmic contractions just below the locality of excitation ensues, together with a diminution of the state of moderate tonic contraction in which the intestinal muscle normally exists and on which the rhythmic contractions are superimposed. Coincidently with this relaxation in front of the point excited there is an increased tonic contraction, with greater vigor of rhythmic movement behind the place stimulated. The outcome of such a performance is the progressive forward movement of the intestinal contents. There has been some debate as to whether the pyloric sphincter functions in harmony with the plan just outlined or whether it has a regulatory mechanism of entirely independent character. Cannon, for example, has argued that the degree of gastric acidity determines the reflex opening of the pylorus. Evidence seems to be accumulating, however, to show that such chemical control cannot be the foremost, if, indeed, it is a significant factor in human pyloric function. The most recent observations of Wheelon and Thomas[1] at the St. Louis University School of Medicine are in harmony with the view that the acts of opening and closing of the pyloric sphincter are to a great extent dependent on the motility of the structures lying on either side. This means, in the further words of these investigators, that the sphincter acts as a functional link in the chain of forward conduction of material from the stomach. The demonstration that the pyloric sphincter exhibits cycles of rhythmic motility of the same duration as those of the antrum, but so timed as to supplement them functionally, is of importance to a proper understanding of the motor phenomena of the pylorus. Quoting the explicit description of the St. Louis physiologists, the antrum, pyloric sphincter and first part of the duodenum in the dog each possesses definite rhythmic cycles which bear a constant relationship and show a dependence on one another; that is, parts excited craniad travel caudad to excite lower segments. The three portions, therefore, show progressive motility which occurs in a definite sequence and in a manner which we may believe normally causes material to leave the stomach and to be delivered into portions of the intestine below the first portion of the duodenum. If this interpretation becomes substantiated for the human pylorus, as recent studies of McClure and others at Boston seem to promise, considerable progress in gastric and duodenal physiology will have been made.

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[1] Wheelon, H., and Thomas, J. E.: Observations on the Motility of the Duodenum and the Relation of Duodenal Activity to That of the Pars Pylorica, Am. J. Physiol. **59**: 72 (Feb.) 1922.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal—Dr. William C. Ellis, Phoenix, has been appointed to the city commission, effective, May 1.——Dr. George A. Bridge, Bisbee, chief surgeon of the Copper Queen Hospital, recently fell from his bicycle and sustained a fractured femur.

Hospital News.—The old Arizona Hospital, which has been recently reorganized as the Tucson-Arizona Sanatorium, has been renovated and equipped for complete modern medical and surgical service. The former Arizona Hospital has been made into a physicians' building, occupied exclusively by physicians and dentists.——Dr. Winston C. Hackett, Phoenix, has purchased the old Kibbey property and has had it remodeled into a hospital for colored people. The building has been refurnished and equipped with modern improvements.

ARKANSAS

Hospital News.—Contracts have been let for a $200,000 sanatorium and bath house building to be erected at Hot Springs for the Pythian Lodge.

New County Society.—The Cross County Medical Society was organized, April 1, at Wynne, with Dr. Wiley B. Barner, president; Dr. James D. McKie, vice president, and Dr. Thomas Wilson, secretary-treasurer.

TO SECURE IDENTIFICATION CERTIFICATE FOR SPECIAL FARE RAILROAD TICKETS TO ST. LOUIS WRITE TO THE SECRETARY, 535 N. DEARBORN ST., CHICAGO, INCLOSING SELF-ADDRESSED STAMPED ENVELOPE.

CALIFORNIA

Unlicensed Practitioners Convicted.—It is reported that Mrs. M. A. McClelland, chiropractor of Turlock, was recently fined $250 for practicing medicine without a license.——R. E. Ross, a chiropractor of Dinuba, was given an alternative sentence of paying a fine of $300 or serving 150 days in jail, following his conviction on a charge of practicing medicine without a license. He chose the jail sentence.

Personal.—Dr. James C. Crawford, Orange, has been elected president of the Orange County Medical Association, and Dr. Rowland P. Yeagle, Santa Ana, secretary.——Capt. Francis W. Wieber, M. C., U. S. Navy, has been appointed to take charge of the new naval hospital at San Diego, which was recently erected at a cost of $2,000,000.——Dr. William E. Musgrave, editor of the *California State Journal of Medicine*, has resigned as director of the Hospital for Children and Training School for Nurses, San Francisco, which position he has held for five years.

Hospital News.—The removal of the old Isolation Hospital, Potrero, was ordered, and it was destroyed by fire recently. The leper colony formerly housed there has been transferred to the United State government culion at Carrville, La.——The new orthopedic hospital school has been opened at Los Angeles. The school is only for children and lessons will be continued while the little patients are undergoing their treatments. All the wards are differently arranged from a psychologic standpoint. The walls are gray and the ceilings sky blue. The board of education has assigned teachers to instruct the children while in the hospital, which was made possible by the Los Angeles Orthopedic Foundation, an organization composed of business men who have devoted their time and money to the care of crippled children.

CONNECTICUT

Clinic to Be Maintained.—At a special meeting of the board of apportionment, provision was made for the continuation and maintenance of the genito-urinary clinic at the Bridgeport City Dispensary, which it had formerly been considered advisable to discontinue. The state will continue to grant the medical supplies for the clinic and local physicians will donate their services.

Society News.—Owing to circulars received by the physicians of New Haven from a local druggist, asking for custom by announcing that preferred stock is for sale and guaranteeing an 8 per cent. dividend, and other financial inducements, a meeting of the New Haven Medical Association was held April 5, and it was voted to be "the sense of the New Haven Medical Association that a financial interest of a practicing physician in any drug store tends to commercialize medical science by directly and indirectly playing on human cupidity and inclining the morally weak to send patients to an establishment in which they have a monetary interest, thus making profit out of their own prescriptions in addition to receiving their regular fees for professional services." "The association desires to make public protest against all such attempts to exploit the profession at the expense of their honor and feel that any physician participating, by dividends or otherwise, in the profits of such a business venture is unworthy of membership in the association."——At the one hundred and thirtieth annual meeting of the Hartford County Medical Association, held at Hartford, April 4, under the presidency of Dr. Thomas G. Alcorn, the following officers were elected for the ensuing year: president, Dr. Edward R. Lampson, Hartford; vice president, Dr. Arthur S. Brackett, Bristol, and secretary-treasurer, Dr. Anthony W. Branon, Hartford. Dr. Philip D. Bunce read the obituary of the late Dr. Charles E. Taft.

FLORIDA

Health Clinic.—An itinerant chest clinic was held in Fort Pierce, March 25, under the auspices of the Florida Public Health Association and the city board of health. Dr. Louise M. Limbaugh, Jacksonville, and Dr. Theodore A. Blinn, were the examiners.

GEORGIA

Personal.—Dr. Young A. Little has been appointed associate professor in mental and nervous diseases at the Atlanta School of Medicine.

Hospital News.—Work has been started on the additions to the government psychopathic hospital, Lenwood, to be erected at a cost of $250,000.

Medical Meeting.—At the semiannual meeting of the Seventh District Medical Society, at Lafayette, April 5, Dr. John Turner McCall, Rome, was elected president and Dr. Mather M. McCord, Rome, was reelected secretary.

ILLINOIS

Hospital News.—A new $250,000 addition will be built at St. John's Hospital, Springfield.

Typhoid Fever Carriers.—Dr. Ralph W. Nauss, assistant epidemiologist of the state department of public health, recently completed the task of checking up on all typhoid fever carriers whose identity is known to the department, in northern Illinois. Particular attention was paid to such carriers as were likely to be engaged in or associated with the production and sale of milk and other dairy food products.

Typhoid Vaccination Warning Issued.—In order to forestall the probability of typhoid fever epidemics in the many river communities that have suffered severely from serious flood conditions, Dr. Isaac D. Rawlings, state director of public health, has written to local health officers advising them to make every effort at obtaining general antityphoid vaccination among all persons in their districts who will be exposed to danger through the use of polluted water when the floods subside.

Personal.—Major Henry Ladd Stickney, in charge of the surgical service of the government hospital at Fox Hills, N. Y., has been transferred to Dwight.——Dr. Isaac D. Rawlings, state director of health, discussed state clinics in their relation to the practicing physician and the public before a meeting of the Decatur and Macon County Medical Society, April 14.——Dr. Gibson P. Livingston, Upper Alton, was robbed of $1,000 in cash and $3,000 worth of jewelry when a burglar entered his home on the night of March 22.

Branch Diagnostic Laboratory.—The state department of public health has completed arrangements for establishing a new branch diagnostic laboratory at East St. Louis. The diagnostic work, which will include only the examination of diphtheria cultures, will be carried out in the city public health laboratory under the direction of the local health commission. This branch will also be utilized as a distributing station by the state department of public health; such things as specimen mailing containers, swabs, antitoxin and triple typhoid vaccine being available to physicians in southern Illinois from that point. This brings the total number of branch laboratories in the state up to seven.

Chicago

Personal.—Dr. Herman N. Bundesen, health commissioner of Chicago, was presented with a diamond studded gold star at a surprise party, given April 13.

Northwestern University.—A banquet will be given, May 17, for the alumni of Northwestern University Medical School, Chicago, at the Hamilton Club. Alumni attending the meeting of the Illinois State Medical Society, May 16-18, in Chicago, are requested to send in their reservations to Dr. James G. Carr, 2421 South Dearborn Street, Chicago.

Contribution for Research Work.—The National Canners' Association has recently donated $10,000 a year for two years to the University of Chicago for investigation into the causes of disease connected with canning. The work will be under the direction of Prof. Edwin O. Jordan, chairman of the department of hygiene and bacteriology, with the assistance of Dr. Jacob C. Geiger, who has been appointed assistant professor of epidemiology for two years in that department. This work will be in cooperation with the U. S. Public Health Service.

KANSAS

Contagious Bacillary Conjunctivitis.—According to the report of the public health supervisor an epidemic of pink eye is prevalent in the Topeka schools, more than 120 pupils being reported as suffering from the disease during March.

Hospital News.—Work has been started on the nurses' home of the Methodist Hospital, Goodland. The building will contain thirty-five rooms.——The Newman Memorial County Hospital, Emporia, erected and equipped at a cost of about $300,000, was recently opened for the reception of patients.

KENTUCKY

Personal.—Dr. William N. Lipscomb has resigned as health director of Scott County.

Hospital News.—The Kentucky Children's Home Society has moved from its old home in Louisville to Lyndon. Barracks are being used at present for a detention and hospital ward pending the building of a hospital, which, it is expected, will be built in the autumn.——A new Sanatorium is being erected at Dawson and will be officered entirely by the medical staff.——Dr. Lee Botts will reopen his hospital at Glasgow this week.

LOUISIANA

Personal. — Dr. William R. Lastrapes has been elected president of the medical examining board for the Bureau of Pensions at Opelousas.——Dr. Henry J. Dauterive has been elected chairman of the New Iberia Parish Board of Health and Dr. Walter F. Carstens, parish health officer.

State Medical Meeting.—The annual meeting of the Louisiana State Medical Society was held at Alexandria, April 11-13, under the presidency of Dr. Joseph E. Knighton, Shreveport. The following officers were elected for the ensuing year: president, Dr. Paul J. Gelpi, New Orleans; vice presidents, Drs. G. M. G. Stafford, Alexandria, Charles V. Unsworth, New Orleans, and Courtland P. Gray, Monroe, and secretary-treasurer, Dr. Paul T. Talbot, New Orleans.

MASSACHUSETTS

Course in Rehabilitation.—The Harvard Graduate School of Education, Harvard University, Boston, will give a summer course in the rehabilitation and reeducation of handicapped persons, July 10 to August 19.

New Food Regulations.—The state department of public health has made public new food and drug regulations, adopted by the state public health council at its March meeting. The regulations are made under provisions of law which require the department to adopt rules, regulations and standards of the U. S. Department of Agriculture, for the purpose of securing uniformity between the state and the federal authorities. The regulations provide that "each guaranty to afford protection shall be signed by and shall contain the name and address of the person making the sale of the articles covered by it, and shall be to the effect that such articles are not adulterated or misbranded."

MICHIGAN

Hospital News.—The new Municipal Tuberculosis Sanitarium constructed by the health department, near Northville, at a cost of approximately $3,000,000 has been completed. There are accommodations for 300 adults and 100 children in the hospital proper, and for 100 additional children in the Summer Preventorium.——Plans have been completed for a $100,000 community hospital at Hastings.——It is planned to build an isolation hospital at Walkerville, also a general hospital to serve all the Canadian border municipalities, under the direction of the Essex Border Utilities Commission.

MISSISSIPPI

Personal.—Dr. Henry Boswell, secretary of the state medical association, was the principal speaker at a meeting of the Leflore County Medical Association, held at Greenwood, April 7.

Hospital News.—A new hospital will be erected at Clarksdale at a cost of $50,000, under the auspices of the Clarksdale Civic Hospital committee.——The new community hospital at Brookhaven was formally opened April 9.

To purchase special rate round trip railroad tickets to St. Louis members must present "Identification Certificates."

MONTANA

Campaign Against Anthrax. — The state board of health issued an order, April 6, prohibiting the importation into the state of all shaving brushes made from horse hair, in an effort to combat the increase of anthrax.

Personal.—Dr. Charles E. Blankenhorn, Malta, has been appointed veterans' surgeon for Phillips County, to succeed Dr. Lester W. Day.——Dr. John C. Dunn, Lewiston, has been elected president of the Fergus County Medical Society to succeed the late Dr. H. W. Wardle of Moore.——Dr. David A. Baker, St. Ignatius, has contracted tuberculosis and has been transferred to U. S. Public Health Service Hospital No. 72, at Fort Harrison, Helena.——Dr. Byron L. Pampel, Livingston, was elected president of the board of health, April 6; Dr. Daniel J. Donohue, Butte, was elected vice president, and Dr. William F. Cogswell, Helena, secretary of the board.

NEW JERSEY

Hospital News. — Plans are being executed for the new three-story addition which will be erected for the Summit Home for Children, Summit.

Personal.—Dr. Henry B. Costill, Trenton, president of the Medical Society of New Jersey, has appointed Dr. Julia C. Mutchler, Dover, as a member of the Welfare Committee of the state association.——Dr. John N. Bassin, Newark, has been appointed rehabilitation surgeon to the Newark Beth Israel Hospital.——Dr. Frederick J. LaRiew, Washington, has been reelected president of the local health board.——Dr. Charles V. Craster, Newark, will act as superintendent of the City Hospital, and continue as health officer of Newark at the same salary that he is now receiving as health officer.——Dr. Frederick P. Wilbur, Franklin, has resigned as chief surgeon of the Franklin Hospital.

NEW MEXICO

Annual State Meeting.—The fortieth annual meeting of the New Mexico Medical Society, will be held at Gallup, April 28-29, under the presidency of Dr. Chester Russell, Artesia.

NEW YORK

Disabled Veterans Get State Aid. — A bill appropriating $1,000,000 for disabled veterans has been signed by Governor Miller. Application blanks can be obtained from deputies in each assembly district. There will be an examining physician in each district, who will receive $3 for each examination.

Maternity Protection.—Under the Davenport bill recently signed by Governor Miller, $130,000 is appropriated by the state to safeguard maternity and young children. Under this law, a new division of maternity, child hygiene and infancy is created in the state department of health. It also carries out a recommendation by the governor that the state take up this work without the aid or interference of the federal government, the governor being opposed to the state's accepting help under the Sheppard-Towner maternity bill.

New York City

Physician Convicted.—It is reported that Dr. Simeon B. Minden was found guilty, April 12, in the Bronx County Court of having performed an illegal operation.

Memorial to Dr. Sims.—A bronze memorial tablet has been erected in the operating theater of the Woman's Hospital, dedicated to Dr. J. Marion Sims. The inscription reads: "Sims Operating Theater, dedicated to the memory of James Marion Sims, M.D., LL.D., 1813-1883, the Founder of the Woman's Hospital and of Modern Gynecology." The tablet and the remodeling of the operating theater were made possible by a donation from Mrs. Frederick Ferris Thompson.

Dedication of Veteran's Hospital.—The formal opening of the U. S. Veteran's Hospital No. 81, in the Bronx, took place, April 15, under the presidency of Assistant Surg.-Gen. Claude H. Lavinder, with a reception committee headed by Surgeon-General Cumming. Col. E. Clifford, assistant secretary of the Treasury, Col. Charles R. Forbes, director of the U. S. Veterans' Bureau, and Col. Cornelius Wickersham of the American Legion Hospitalization Committee, gave addresses and the U. S. Navy Band from the Brooklyn Navy Yard provided the musical program.

Experimental Health Center.—Under the direction of the health department, a community health improvement is being tried by the residents of the district bounded by West One Hundred and Twenty-Eighth Street and One Hundred and Thirty-Fourth Street. The residents of that district have established a self-supporting and self-directing health protective and nursing service in an endeavor to prevent sickness by the giving of instruction in hygiene and nursing to housewives by trained nurses. An endeavor will be made to have every citizen in that territory contribute 50 cents a month.

For "Identification Certificates" send self-addressed stamped envelope with request to the Secretary, 535 N. Dearborn St., Chicago.

NORTH CAROLINA

Tuberculosis Clinics.—Dr. Joseph L. Sprull, state clinician, held a series of clinics in the various localities around Lexington, April 4-15.

Hospital News.—Plans have been completed for the $35,000 nurses' home for Mercy Hospital, Monroe.——A new 100-bed hospital will be erected at Asheville at a cost of $250,000, to be known as the Biltmore Hospital.

OHIO

New Health League.—At a meeting of representatives of the county, March 28, at Tiffin, the Seneca County Public Health League was organized. Robert G. Patterson, Columbus, executive secretary of the Ohio Public Health Association, addressed the meeting and outlined the aims and purposes of the new county league.

University of Cincinnati News.—Dr. Kenneth D. Blackfan, professor of pediatrics, University of Cincinnati School of Medicine, has been appointed dean of the Children's Hospital, Mount Auburn.——Dr. Reuben J. Erickson has been made associate professor of medicine in the School of Nursing and Health of the college.——Dr. Alfred Friedlander has been appointed attending physician and chief of the consulting staff of the tuberculosis service at the tuberculosis sanatorium.——Dr. Samuel Zielonka has resigned as instructor of surgery.

Personal.—Dr. Marjorie Burnham, Kinsman, who has been in Serbia for the last four years, has returned to her practice in that city.——Dr. William T. Fitzgerald, Greenville, spoke on the "Medical Profession" at the first of a series of lectures to assist local high school students in selecting a profession.——Dr. William Claude Davis, West Mansfield, has been appointed past assistant surgeon, U. S. Public Health Service, and has been stationed in North Carolina.——Dr. Frederick M. Houghtaling, Huron, has been appointed full-time health director of Erie County and Sandusky.——Dr. James G. Blower, Akron, has been appointed a member of the state medical board to succeed Dr. Ben H. McClellan of Xenia.——Dr. Edmund A. Weeks has been appointed health commissioner of Akron to succeed Dr. W. S. Chase, who recently resigned.

Hospital News.—The new sixty-nine-bed wing for nurses, including a large gymnasium, has been completed at the City Hospital, Cleveland, and the new contagious building with a 105-bed capacity, also the new main hospital and the psychopatic building were completed during the year 1921. The old main building has been entirely renovated and further repairs will be made in the near future. The construction work on the $4,000,000 city hospital has been temporarily discontinued, owing to a strike.——Repairs to the City Hospital, Marion, will be effected at an estimated cost of $3,130.——Stark County has established a temporary fifteen-bed hospital for the treatment of tuberculosis, pending the erection of a larger and permanent hospital, for which a number of sites have been inspected.——The McClellan Hospital, Xenia, has recently been moved to new brick buildings. The second floor of the old institution was destroyed by fire, February 16.

OKLAHOMA

Hospital News.—The contract has been let for the construction of the Tulsa City Hospital at a cost of $44,180.——The Eastern Oklahoma Hospital for the Insane, Vinita, has recently opened its $100,000 addition for the reception of patients. Dr. Felix Adams is the physician in charge of the institution.

Physicians Lose Suits.—It is reported that Drs. Alonzo P. Gearheart and William Leslie, Blackwell, recently were convicted for alleged malpractice and the plaintiff was awarded $10,000.——It has been announced that Dr. Alvin Ray Wiley, Tulsa, lost a suit alleging malpractice when the jury returned a verdict for $2,000 in favor of the plaintiff.

PENNSYLVANIA

Hospital News.—A new four-story addition will be erected for the Samaritan Hospital, Philadelphia.——A new addition to the Chambersburg Hospital has just been completed at a cost of $90,000.

Memorial to Mastbaum.—A new infirmary was dedicated as a memorial to the late Stanley V. Mastbaum, founder of the Stanley Company of America, at exercises in the Eaglesville Sanatorium, Eaglesville, March 29. The building was erected at a cost of $83,000.

Society Elections.—At a meeting of the Fayette County Medical Society, Dr. George H. Robinson, Uniontown, was elected president for 1922, and Dr. Robert Heath, Fairchance, secretary-treasurer.——The Elk County Medical Society elected Dr. John C. McAllister, Ridgeway, president, and Dr. Samuel G. Logan, Ridgeway, secretary-reporter.

Personals.—Dr. William S. Rush, Carlisle, has been appointed physician to the Cumberland County Home and Hospital for the Insane, to succeed the late Dr. J. G. David.——Dr. Erwin F. Huff has been elected a member of the board of health of Sellersville for a three-year term.——Dr. J. T. Strimple has been appointed physician to Erie County Prison.

Medical Sciences Building.—Plans have been completed for the erection of the Medical Sciences Building in East Liberty, Pittsburgh, for the exclusive use of physicians and dentists. This building will be owned by the physicians themselves under the Joint Ownership Construction Company, Inc., and will be seven stories in height. There will be a lunch room for the physicians, an ethical pharmacy, an optical shop and a surgical instrument store. A twenty-four hour telephone service will be maintained by four operators.

Clinics for Industrial Workers.—At a meeting of the Industrial Relations Committee of the Philadelphia Chamber of Commerce, with representatives from industrial, medical and surgical organizations, held recently, it was planned to establish modern medical clinics to handle 10,000 workers in Philadelphia, whereby all employees of the industries in the city may have the same attention in cases of injury or illness which is possible in the establishments in which they maintain first class clinics. It is estimated that with these clinics the expenditure of large sums, now spent on compensation, will be eliminated, and many lives will be saved and much invalidism avoided.

Philadelphia

Heart Disease as a Public Health Problem.—The annual meeting of the Philadelphia Association for the Prevention and Relief of Heart Disease was held April 19. Dr. Haven Emerson, New York, gave the principal address.

Frederick Packard Lecture.—Dr. Fritz B. Talbot, Boston, delivered the annual Frederick Packard lecture before the Philadelphia Pediatric Society, April 11, on the subject of "Normal and Abnormal Metabolism of Infancy and Childhood."

SOUTH CAROLINA

Rat Campaign.—Through the cooperation of the Women's Bureau of the Chamber of Commerce and the health department of Greenville, a drive to rid the city of rodents was launched, March 20 to April 3. It was estimated that rats in the United States in 1921 caused a property loss of $1,000,000.

New Medical Society.—At a meeting of the physicians and dentists of the city, March 17, the Batesburg Medical Society, an auxiliary to the Lexington County Medical Society, was organized, with Dr. Washington P. Timmerman, former president of the South Carolina Medical Association, as president, and Dr. Albert Lee Ballenger, secretary. A committee was appointed to prepare and draft the rules and regulations of the society.

TENNESSEE

Hospital News. — The Baptist Memorial Hospital, Memphis, was recently granted $60,000 by the executive committee of Tennessee Baptists.

Personal.—Dr. William W. Dickey has resigned as director of the Venereal Clinics at Chattanooga. Dr. R. M. Colmore will succeed Dr. Dickey.

TEXAS

Personal.—Dr. Willis J. Pollard has been appointed city health officer of Kaufman, to succeed the late Dr. Burrel J. Hubbard.——Dr. Robert B. Alexander has been appointed assistant instructor in the department of medicine at the University of Texas Medical College, Galveston.

Dallas Monthly Clinics.—These clinics will hold a "state-wide" session, May 20, to which all Texas physicians, en route to the annual session of the American Medical Association at St. Louis, are invited. A special train will leave Dallas for St. Louis, the evening of May 20. Particulars may be obtained from Dr. Curtice Rosser, chairman of the clinics, 514 Wilson Building, Dallas.

VIRGINIA

Personal. — Dr. Edwin M. Mann, Kenbridge, has been elected president of the Luneburg County Medical Society. ——Dr. Garnett Nelson was recently reelected president of the Richmond Tuberculosis Association.

Hospital News.—The contract has been awarded for a new hospital at Lynchburg, to be erected by the Board of the Virginia Baptist Hospital.——The contract has been let for a $25,000 addition to the Protestant Hospital, Norfolk.

WISCONSIN

Corrective Speech. — Courses in the correction of speech disorders for physicians specializing in this work, as well as for teachers and speech aids, will be given at the University of Wisconsin, Milwaukee, summer session, June 26 to August 4.

Medical Building.—The Milwaukee Academy of Medicine has appointed a committee, of which Dr. Horace M. Brown is chairman, to investigate ways and means for the erection of a building devoted exclusively to members of the medical and dental profession.

WYOMING

Health News.—The state board of health has been designated by the governor to create a separate bureau of maternal and infant hygiene to cooperate with the National Child Labor Bureau, taking advantage of the Sheppard-Towner bill.——Dr. James S. Hunter, Gillette, has been appointed health officer of Campbell County, to succeed the late Dr. Edward J. Sexton.

GENERAL

National Academy of Sciences.—The annual meeting of the academy will be held at Washington, D. C., April 23-26. At the invitation of the academy and the Carnegie Institution of Washington, Dr. Hendrick Anton Lorentz of the Rijks Universiteit, Leiden, will deliver an address, April 24.

Medical Officers' Reunion.—The Association of Medical Officers of Camp Green Base Hospital will hold its first reunion in Washington, May, 1922, under the presidency of Dr. Francis Winslow Palfrey, Boston. For information apply to Dr. Claude P. Brown, secretary, 120 South Twenty-Second Street, Philadelphia.

American Congress on Internal Medicine.—At the sixth annual meeting of the congress, held at Rochester, Minn., the following officers were elected for the ensuing year: president, Dr. Sydney R. Miller, Johns Hopkins University Medical School, Baltimore; vice presidents, Drs. Henry S. Plummer, Rochester, Minn., and Stuart R. Roberts, Atlanta, Ga.; treasurer, Dr. Clement R. Jones, University of Pittsburgh, and secretary general, Dr. Frank Smithies, Chicago.

National Eyesight Tests.—Under the auspices of the Federated American Engineering societies, a campaign to determine the extent of defective eyesight among children and industrial workers will be conducted throughout the United States, with the assistance of local health and educational officers, with the object of sight conservation. The Council on Eyesight Conservation reported that only one third of the 24,000,000,000 American school children receive adequate tests of vision.

Society for Speech Disorders.—The National Society for the Study and Correction of Speech Disorder will hold its annual meeting as an allied association with the National Education Association in Boston, July 3-7. Each afternoon will be taken up with formal papers by officers and Massachusetts teachers of speech, and there will be ten five-minute papers open to general discussion. There will be a demonstration with maps and charts showing the progress of the American Movement for Speech Correction from coast to coast.

To secure identification certificate for special fare railroad tickets to St. Louis write to the Secretary, 535 N. Dearborn St., Chicago, inclosing self-addressed stamped envelope.

National Tuberculosis Association.—The eighteenth annual meeting of the association will be held at Washington, D. C., May 4-6, under the presidency of Dr. James Alexander Miller, New York. Secretary of State Hughes will address the opening meeting. Speeches also will be made by the French ambassador, the Chinese Minister and the Czechoslovakian envoy. Dr. Charles R. Austrian, Baltimore, is chairman of the clinical section; Dr. Charles Krumwiede, New York, of the pathologic section, and Dr. William F. Snow of the advisory council.

Warning Against Typhus. — Col. Edward Gibbs, who recently volunteered to go to Poland to study typhus conditions, returned on the *America*, April 8. He states that strict precautions are necessary to prevent the scourge from spreading in this country and reports that Dr. W. Chozko, minister of health for Poland, informed him that there were only 3,000 physicians to cover the entire 30,000,000 population of Poland and that typhus is epidemic, especially in Rovno, the port of entry to Poland from Russia. The typhus death rate in that city is 25 per cent.

Influenza During 1922.—State health officers in twenty-eight states, the estimated population of which was 67,200,000, reported 139,850 cases of influenza between January 22 and March 25, 1922, an average of one case to 490 persons. The greatest number of cases in one week was reported March 4, when the total was 22,352. The greatest number of cases reported from any state in one week was 10,033, from California the week of February 25. Deaths from influenza and pneumonia reported during the same period, but from sixty-three large cities, whose estimated population was 27,500,000, numbered 15,880, or one to 1,731 persons. New York City reported the greatest number of deaths from these diseases, the week of February 11, when the total was 596.

Fellowships in Medicine.—The establishment of national fellowships by the National Research Council, announced in a previous issue of The Journal, has been followed by the appointment of a special board to administer the fellowships, consisting of Dr. Victor C. Vaughan, chairman, Washington,

D. C.; Dr. David L. Edsall, professor of medicine and dean of the Medical School of Harvard University, Boston; Dr. Joseph Erlanger, professor of physiology, School of Medicine, Washington University, St. Louis; Dr. Gotthelf Carl Huber, professor of anatomy, University of Michigan; Prof. E. O. Jordan, University of Chicago; Dr. Dean Lewis, professor of surgery, Rush Medical College, Chicago; Dr. William G. MacCallum, professor of pathology and bacteriology, Johns Hopkins University, Baltimore; Dr. Walter Warner Palmer, professor of medicine, Columbia University, New York, and Lafayette Mendel, Ph.D., Yale University, New Haven, Conn.

Culture Collection of the Society of American Bacteriologists.—The Society of American Bacteriologists has taken over the collection of cultures which for the past ten years has been maintained at the American Museum of Natural History by Prof. C.-E. A. Winslow, and has deposited it at the Army Medical Museum, where facilities have been arranged for its housing and maintenance. The following committee will be in charge: Major G. R. Callender, curator of the Army Medical Museum; Dr. George W. McCoy, director of hygienic laboratory, U. S. Public Health Service; Major H. J. Nichols, Army Medical School; the president of the society; the secretary of the society, and Dr. J. M. Sherman, dairy division, Bureau of Animal Industry, chairman. These and other members of the society in and near Washington will do volunteer work and the research fellow will do part time work in maintaining the collection. No charge will be made for cultures. Address Department of Bacteriology, Army Medical Museum, Seventh and B streets, S. W., Washington, D. C.

TO PURCHASE SPECIAL RATE ROUND TRIP RAILROAD TICKETS TO ST. LOUIS MEMBERS MUST PRESENT "IDENTIFICATION CERTIFICATES."

A Research Fellowship in Bacteriology.—At its recent meeting in Philadelphia, the Society of American Bacteriologists appropriated a fund for the support of a research fellowship in pure bacteriology. The line of work to be carried on under this fund must concern a purely scientific and fundamental phase of bacteriology, although a certain latitude of choice will be permitted, conditioned by the previous training and the desires of the one holding the fellowship. Applicants for the fellowship must have the degree of B.S., or its equivalent. The successful candidate, through arrangements now being made, will receive academic credit for the work done from a university of recognized standing. One hundred dollars a month will be available for the living expenses of the fellow. Approximately half his time will be devoted to details connected with the society's collection of bacteria, deposited at the Army Medical Museum. The selection of the research fellow will be in charge of a committee appointed by this society. This committee will have general supervision of the work, approve the problem selected and pass on the thesis which the fellow will submit as the report of his research. Applications for and communications concerning the research fellowship should be addressed to the chairman of the committee, Dr. Victor C. Vaughan, National Research Council, Washington, D. C.

The Passing of the Medical Record.—It has been announced that, with the current issue, William Wood & Co. will cease the publication of the New York *Medical Record*, and that it will be taken over by the A. R. Elliott Advertising Agency, which also publishes the *New York Medical Journal* and the *American Druggist*. The *Medical Record* was first issued in March, 1866. Previous to that time attempts had been made in New York to publish a weekly medical journal but without success. The idea of the *Medical Record* originated with Mr. William H. S. Wood, then a young man just out of college, who believed that a medical journal properly edited and well managed from the business end would succeed, in spite of the fact that the *Medical Times*, which had been established and published under splendid auspices, and edited by Dr. Stephen Smith, had succumbed to adverse circumstances. As first published, the *Medical Record* consisted of twenty-six pages and was a semimonthly. Its semimonthly issue was continued with a gradual increase in the number of pages until 1875, when it was changed to a weekly. Dr. George F. Schrady was editor of the *Medical Record* from its inception until his death in November, 1907, and since then it has been under the editorial management of Dr. Thomas L. Stedman.

Bequests and Donations.—The following bequests and donations have recently been announced:

Danville General Hospital, Danville, Va., $250,000; about $2,000,000 from a $3,000,000 estate, for the founding of an orphanage near Danville, by the will of John E. Hughes.

For the establishment of an orthopedic hospital at Newark, N. J., $100,000 by George A. Ohl, Jr.

Good Samaritan Hospital and St. Joseph's Hospital, Lexington, Ky., $100,000 each, by the will of Mr. E. J. Curley.

For hospital work in Muncie, Ind., $100,000; Riley Memorial Hospital, Indianapolis, $25,000, donated by Ball Brothers, manufacturers, of Muncie.

Rutherford Hospital, Rutherfordton, N. C., $100,000, for the purpose of equipping it for radium treatment, as a memorial to his late wife, by J. C. Plonk of Hickory, N. C.

Woman's Hospital, New York City, $15,000, by the will of Mrs. Rosina E. Hoyt.

Duke's Memorial Hospital, Peru, Ind., $12,000 for a nurses' home, by Mrs. Cordelia Putterbaugh.

University of Chicago, $10,000 a year, for two years, for investigation into causes of diseases connected with canning, by the National Canners' Association.

Children's Homeopathic Hospital, Philadelphia, will receive $5,000 by the will of Anna M. Williams.

Presbyterian Hospital, Denver, $3,000, by the will of Philip Argall.

Aiken Hospital, Aiken, S. C., $2,043, from a bridge tournament and subscriptions.

Worcester (Mass.) Society for District Nurses, $1,000; Worcester Hahnemann Hospital, $1,000; Memorial Hospital and temporary home and day nursery of Worcester, $500 each, by the will of Miss Emma Pratt.

Lebanon and Beth Israel Hospitals, New York City, each $1,000, and St. John's Riverside Hospital, Yonkers, $600, by the will of Morris Freudenheimer.

Margaret Pillsbury Hospital, Concord, N. H., $1,000, by George A. Pillsbury.

Perkins Institution for the Blind, Boston, $300; New England Home for Little Wanderers, $100, by the will of Oliver M. Wentworth.

LATIN AMERICA

Belgian Physicians Studying Tropical Medicine in Brazil.—The *Archivos Paranaenses de Medicina* relates that Dr. Lejune and Dr. Duren of Belgium, who have been in Brazil on an official research mission, recently spent some time at Paraná. They have been making a careful study of the system of prophylaxia rural in Brazil, before resuming their duties in the Congo.

Pan-American Congress of University Students.—The organ of the Asociación de Estudiantes Universitarios, *Studium*, published at Guatemala, Central America, recently issued a large souvenir number of 129 pages to commemorate the representative gathering there last fall of students from various countries of North and Central America. This gala number is profusely illustrated, being at the same time a tribute in honor of the centennial of the independence of Central America. Among the addresses reproduced are some on measures to repress alcoholism, and one by J. E. Quintana urging that necropsy should be made compulsory in all cases of death in hospitals, the expenses of which are paid by the state.

Personal.—Dr. J. F. Arteaga and Dr. F. M. Fernández were recently elected members of the Academia de Ciencias of Havana. The inaugural address presented by the latter was on "Hygiene of the Eye." Dr. Arteaga is editor of the *Revista de Medicina y Cirugía* of Havana, and Dr. Fernández of the specialist Cuban ophthalmologic journal as well as of the *Crónica Médica-Quirúrgica.*——The resignation of Dr. Rodrigues Lima of the chair of general pathology in the Rio de Janeiro medical faculty has finally been accepted. He has been unable to attend to its duties partly on account of having long been the representative of Bahia in the national congress. Dr. Pinheiro Guimarães has been lecturing in his place, and has now been appointed regularly to the chair.——The Academia das Sciencias of Lisbon recently elected to membership Dr. A. Peixoto and Dr. A. de Castro, professors in the medical faculty of Rio de Janeiro. Four other Brazilian physicians have been elected at various times, including Dr. C. Ferreira and Dr. Ribeiro da Fonseca.——The *Revista Médica Cubana* states that Dr. S. García Marruz has been appointed associate professor of obstetrics and gynecology in the Havana medical faculty.

FOREIGN

Disappearance of the "Gaceta Catalana."—After forty-four years of existence, the *Gaceta Médica Catalana* of Barcelona has suspended publication, we are informed. This monthly was founded and edited by the late Dr. Rodríguez Méndez and was always essentially his creation.

Alexander Foundation.—Dr. S. Alexander of Berlin has long been a leader in medical organization, and his seventieth birthday recently was celebrated by the foundation of an Alexander Fund by the Greater Berlin Medical Chamber. He was also elected honorary member of the Berlin Medical Society.

Physiology of Helio-Alpine Treatment.—At the last of a series of lectures, given at the Royal Institute of Public

Health, London, on tuberculosis and public health, Mr. A. J. Morland spoke on the helio-alpine treatment of surgical tuberculosis, drawing on his experience as assistant to Dr. A. Rollier at Leysin.

New Surgical Club.—A surgical club has been founded in Dublin of which surgeons of all the hospitals are members, and each in rotation will be "at home" to the other members on his operating morning to demonstrate his methods. Sir W. I. de C. Wheeler, Mercer's Hospital, was in charge at the first meeting. Meetings will be held once a month.

Indian Science Congress.—The eighth annual congress of the medical section of the Indian Science Congress was held, February 1-4, at Madras. Major J. Cunningham, director of the King Institute, Madras, spoke on "India's Debt to Medical Research," and Lieut.-Col. J. W. Cornwall, Pasteur Institute, Coonoor, read a paper on "The Ultimate Aim of Medical Research."

Belgian Professor Visits U. S.—Dr. Emile Gallemaerts, University of Brussels, arrived in New York on the liner *Lapland*, April 2, to attend the International Congress of Ophthalmologists to be held in Washington, April 25 to May 3. Dr. Gallemaerts, who has published a book on the structure of the eye and its diseases, will also give a series of clinics in New York.

To Investigate Spiritualism.—The *Medizinische Klinik* gives the list of members of a committee appointed by the Hamburg Forensic Psychologic Society to study objectively occult phenomena, and enlighten the public, and combat the manifold abuses, as occultism is spreading so rapidly. Besides lawyers and judges, the committee includes the psychiatrist Brennecke, Professor Weygandt, Professor Schäfer and several practitioners.

English Professors at Paris.—The topics of the six lectures delivered recently in English at the Paris medical school, in interchange, were "Circulatory Effects of Mitral Stenosis and Aortic Regurgitation," by Russell-Wells; "Trench Fever," Herringham; "Lymphatic Pathology, with Special Reference to Malignant Disease," by Handley; "Mechanism of Compensation in the Heart," by Starling; "Acute Pancreatitis," by Waring, and "Stereoscopic Vision," by Elliott Smith.

Personal.—Dr. Wolfgang Kohler has been appointed director of the Berlin Psychological Laboratory to fill the vacancy caused by the retirement of Professor Stumpf.——Dr. C. A. Lovatt Evans has been appointed to the university chair of physiology, St. Bartholomew's Hospital Medical College, London.——Mr. C. A. Pannett, F.R.C.S., has been appointed to the university chair of surgery, St. Mary's Hospital Medical School, London.——The Italian silver medal "Al Merito della Sanitá Pubblica" has been conferred on Major Myer Coplans, for services during the World War.

Censoring of Motion Pictures.—Dr. J. Billstrom has an article in the *Bulletin* of the French Ligue d'Hygiène Mentale describing the regulations in Sweden in regard to the censoring of moving pictures. The government began in 1911 to exercise control over the films, and a psychiatrist expert has been appointed to be consulted in certain cases. The peculiar public of the cinemas has to be taken into account. On behalf of the mental hygiene of the nation, Billstrom says, it is better to cut out in case of doubt. Every film of a pronounced sexual character should be examined by an expert, skilled in the psychology of sexual problems, to cut out everything in particular that might divert toward sexual perversion. He specifies several films dangerous in this line.

Medical Work in Asia Minor.—The secretary of the Near East Relief, New York City, reports that thirty-eight hospitals, besides clinics and dispensaries, are maintained by them, to care for the refugees in Armenia and the famine stricken area of Asia Minor. In Alexandropol orphanges there are more than 3,000 children suffering from trachoma. These have been segregated in one of the army barracks for special treatment. Food, it is stated, is the most needed remedy, as in the last analysis most of the deaths were from malnutrition. The conflict between the Turkish nationalists and the Russian Red Army made the work of the American physicians very difficult. At one time 6,000 children had to be transported in the depth of winter from Kars to Alexandropol, a three day journey, in unheated trains and without facilities for heating food.

Hospital Conditions in Soviet Russia.—In a report from the America Relief Administration, it is stated that there were no anesthetics in the hospitals of Saratov last winter, until the relief administration arrived and distributed medicine and hospital supplies. Patients were requested to bring their own anesthetic when undergoing an operation. Minor operations were performed without administering an anesthetic and in some cases leg amputations were made in this manner. Practically no supplies have been given to the hospitals there for eight years, and the surgeons brought their own instruments for use in the operating rooms. Saratov is the seat of a large university, founded in 1909, and the students from the medical department assist in the laboratories and clinics of the hospitals. The Russian unit of the relief administration is attempting to feed 2,000,000 children, and will superintend the transportation and distribution of American corn for 5,000,000 people in the famine districts. This corn was purchased by the $20,000,000 appropriation of Congress.

Deaths in Other Countries

Dr. H. Kingsmill Abbott, medical superintendent of Hants County Asylum, England; formerly Stewart lecturer in mental diseases at Trinity College, Dublin, died recently, aged 58.——**Dr. N. Holm,** physician in chief of the Almindelig Hospital at Copenhagen, Denmark, aged 79, father of Dr. H. C. Holm of Washington, D. C.——**Dr. O. Lenoir** of Paris, railway surgeon and surgeon to the Austro-Hungary embassy, an authority on the surgery of industrial accidents, aged 55.——**Dr. L. Burkhardt,** chief of the surgical service of the Nürnberg public hospital, aged 50.——**Dr. G. W. Feine** of Dresden, aged 95.——**Dr. A. Riffel,** formerly professor of hygiene at Karlsruhe, aged 90.——**Dr. William Philipps Dunbar,** professor of hygiene at the University of Hamburg, director of the Hygiene Institute, noted mainly for his pioneer research on hay-fever and his works on cholera. He was born at St. Paul, in 1863, but studied at Giessen, under Gaffky——**Dr. A. Quintella,** a prominent gynecologist and surgeon of Rio de Janeiro, shot in his office by a woman on whom he had operated a few months before. He was surgeon to the Gamboa Hospital, aged 40.——**Dr. N. F. Laprida,** of Buenos Aires, formerly deputy from San Juan province.

CORRECTION

Steinach's Rejuvenation Operation.—In The Journal, February 18, our London correspondent called attention to a statement in an article of Dr. Harry Benjamin appearing in the *New York Medical Journal.* Dr. Benjamin writes that the correction as to the cause of death of an individual dying after a Steinach operation was justified, but that our correspondent should also have cited his second sentence, namely, "Patients should, therefore, be warned not to change their mode of living too quickly and radically."

For "Identification Certificates" send self-addressed stamped envelope with request to the Secretary, 535 N. Dearborn St., Chicago.

Government Services

Langley Bill Passes Senate

The bill, recently adopted in the House of Representatives, has unanimously passed the Senate, appropriating $17,000,000 for additional hospital facilities for disabled former service men. This legislation is the most recent action taken by the government in what is generally recognized as the greatest hospitalization program ever undertaken by any country. The bill was in charge of Senator Fernald, of Maine, who presented statistics to the Senate showing that the government had already expended for former service men and their families since 1918 a total of $1,410,000,000, including $438,000,000 appropriated this year. The measure now goes to the President for signature. Hospital construction under the terms of the measure will be under authority of the U. S. Veterans' Bureau, instead of the Chief Architect of the Treasury Department. Selection of sites and construction of hospital additions and new institutions will be started by the bureau immediately on the signing of the bill by the President.

Medical Care for Lighthouse Service

Representative Winslow of Massachusetts has introduced a bill into the House of Representatives providing for medical and hospital services for the officers and seamen of the Lighthouse Service. The bill was referred to the Committee on Interstate and Foreign Commerce.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 27, 1922.

The National Institute of Industrial Psychology

Psychotherapy is at present receiving much attention in this country, as it is all over the world. The application of psychology to industrial problems is a new departure which is manifest in the foundation of the National Institute of Industrial Psychology. Its object is to assist employers in finding the best way to do each piece of work, to find the best worker for each class of job and the best job for each worker. At a public meeting of the institute held at the Mansion House (the official residence of the lord mayor), Dr. C. S. Myers, F.R.S., who has resigned his appointment as lecturer on experimental psychology at the University of Cambridge to devote himself wholly to the institute, of which he is director, made the following resolution:

> In view of the present serious economic situation and the necessity to reduce costs of production and to increase national output, this meeting is of the opinion that (*a*) more complete and scientific development of the nation's human resources and a reduction of misapplied energy are of urgent national importance; (*b*) the methods adopted by the National Institute of Industrial Psychology have been shown to reduce costs of production, to promote the development of individual ability, to eliminate unnecessary effort and fatigue, and to improve the health and well-being of the worker; (*c*) it is imperative that a national fund should be established to enable the institute to extend its sphere and to continue necessary researches.

Dr. Myers asserted that the institute had already increased the output of various departments of certain factories by from 20 to 40 per cent. and at the same time had decreased the fatigue; he stated that the institute also aimed at guiding the young worker in the choice of occupation by applying to him a series of physical and mental tests, and that satisfactory tests had been formulated for shorthand writers and typists, and there were tests for selecting compositors.

The Cinematograph and Vivisection

Lecturing at the Royal Institute, Dr. Chalmers Mitchell, director of the zoological gardens, suggested that a broader use of the cinema in recording experiments on animals would reduce the number of experiments in which it might be necessary to inflict pain. In the *Times,* Prof. E. H. Starling protests against the impression conveyed that painful experiments are used for instruction or are an ordinary means of research. He never performs any painful experiments for the purpose of teaching or demonstration. The occasions on which the infliction of pain in any physiologic experiment for the advancement of knowledge is necessary must be few. In the last thirty-three years, he has probably performed more so-called vivisections than any other physiologist in this country, but never has he inflicted pain. Cinematography he regards as useful for the study of and analysis of certain movements, but not as suited for the study or teaching of other functions in which movement does not form the essential feature; so that it can never be used to the exclusion of experiments. Nor is this desirable. The great object of experimental demonstration is to put the student's knowledge into three dimensions, and to correct purely verbal and two-dimensional ideas he obtains from the study of books and pictures and even films.

The Value of the Gamma Rays from a Large Quantity of Radium

The Medical Research Council has made a report on the effects of the gamma rays from a large quantity of radium. Nearly 5 gm. of hydrated radium bromid (about 2.5 gm. of the radium element) was used. It was collected by the ministry of munitions from an enormous number of gun sights, watch dials and other instruments of war. It was put in charge of the late Mr. Cecil Lyster, Prof. Lazarus Barlow and Prof. S. Russ. Inquiry was first directed to the value in malignant disease of the penetrating radiation of the short wave gamma rays. Special apparatus was devised by Dr. Russ for the use of such an unusually large amount of radium and for the protection of the workers. The radium was distributed among several research centers in London, the provinces, Scotland and Ireland. At each center, attention is being concentrated on particular forms of malignant disease. The following conclusions have been drawn:

> The majority of growths exhibit a high degree of resistance. Some few, for example, lymphosarcomas, seem more susceptible; but others, for example, squamous epitheliomas, have proved refractory. The amount of pain due to damage of the skin has been variable and the degree of injury of the skin seems to be influenced by the local vascular supply. Sometimes the effect has been to hasten ulceration. A factor influencing this result seems to be the effect of the radiation on sepsis. If the growth is infected, the radiation seems to favor the growth of the bacteria. With the use of such a large quantity of radium, general reactions occurred, for the whole body received an appreciable amount of gamma radiation. During exposures lasting four or five hours, several patients complained of headache and sickness, followed by general malaise, for days. Sometimes marked edema supervened within twenty-four hours of the exposure. Prof. Lazarus Barlow investigated the histologic changes produced. He found disappearance of cytoplasm from the neoplastic cells, more marked after a single than after two exposures. The intranuclear relations were altered. There was increased tendency to localized degeneration of neoplastic masses. The connective tissue fibers permeating the growth became collagenous.

National Collection of Type Cultures

The Medical Research Council has issued a catalogue of the national collection of type cultures which has been described in previous letters to THE JOURNAL. It is maintained at the Lister Institute under the direction of Dr. J. C. G. Ledingham, F.R.S., who is assisted by a curator and an assistant curator. Before the formation of this collection, the institute for many years assisted bacteriologists by means of its own private collection. When two years ago the Medical Research Council made arrangements for a national collection, the institute undertook to provide all necessary facilities. The first object has been to obtain fully authenticated strains of pathogenic organisms, but bacterial and protozoal strains of economic importance are being added when opportunity offers. Experiments are being made with economical and labor-saving methods of subculture. Help is given in the identification of strains received from workers at home and abroad, and it is hoped that such workers will reciprocate by presenting new material to the collection. The scope has been extended to fungi of importance in plant pathology, medicine, veterinary science, technology and soil biology. The council invites the cooperation of bacteriologists and asks that cultures sent either for identification or for maintenance be accompanied by full particulars as to source and date of isolation and, if possible, by clinical and epidemiologic notes. Communications should be addressed to the Curator, Collection of Type Cultures, Lister Institute, Chelsea Gardens, London, S. W. 1.

Leprosy in Great Britain

In the House of Commons, a question was asked as to the incidence of leprosy in Great Britain, coupled with the suggestion that segregation be provided in some fuller way. Sir Alfred Mond, minister of health, said in reply that the number of cases is very small, and that infectivity, in this country at any rate, is too restricted to warrant any measures of compulsory segregation. The present situation is as follows: The principal centers of leprosy in Europe are in Russia, especially the Baltic provinces in the north and such southern provinces as Kherson and Astrakan; in Greece and

Turkey; Spain and Portugal and western Norway—the first and last countries furnishing the greater proportion of the endemics. But cases of leprosy occur in all great cities occasionally, the patients having acquired the disease as natives of or sojourners in some country where leprosy is endemic. In 1897, the late Dr. Phineas Abraham, a dermatologist who devoted special attention to leprosy, estimated that, in the twelve preceding years, there had not been as many as 100 cases of leprosy in Great Britain and Ireland. He could find definite records of only fifty-six. There is no reason to suppose that the cases are more numerous today. No spread of the disease appears to take place from any of the cases.

Chinese Physicians in East London

An outcry has been raised in the press because some Chinese physicians have established themselves as panel physicians in East London. This is a little curious, as Indian, even negro, physicians have been engaged in the same kind of practice for some years without any protest. Their patients do not appear to object. Indeed, the English working classes, especially in the great cities, seem singularly devoid of any color prejudice. Moreover, colored men have an advantage in practicing among the working class, as they are credited with a special skill of their own. They are, of course, fully qualified and on the British register. There are no legal grounds on which they can be prevented from practicing as panel or private physicians. In the provincial towns, there does not seem to be as much tolerance as in London. At a meeting of the Burnley Insurance Committee, an objection was raised because a panel physician had taken a Chinese assistant. However, the clerk pointed out that there was nothing in the rules to stop this. A member of the committee stated that he was on the management committee of the Burnley Hospital, where they had decided not to have any Chinese physicians.

Professor Lazarus Barlow's Visit to the United States

Prof. Lazarus Barlow, who holds the chair of experimental pathology at the Middlesex Hospital Medical School, has left for the United States to investigate the latest methods of cancer research and radium treatment.

PARIS

(From Our Regular Correspondent)

March 31, 1922.

Death of Ranvier

The histologist Louis Antoine Ranvier died at Vendranges recently at the age of 87. Ranvier was born in Lyons, Oct. 2, 1835. He received his degree of doctor of medicine in 1865 and restricted his studies to normal and pathologic microscopic anatomy. He was appointed assistant director of the histologic laboratory in conjunction with the chair of medicine of the Collège de France, and became professor of general anatomy in the same institution, in which this chair had been created for him, in 1875. He had been a member of the Academy of Medicine since 1886, and was elected a member of the Academy of Sciences in 1887, succeeding Charles Robin in the department of anatomy and zoology. He published the "Leçons d'anatomie générale" given at the Collège de France in 1878-1879, a "Traité technique d'histologie" and a "Manuel d'histologie pathologique" written in collaboration with V. Cornil.

Protection of Professional Titles and University Degrees

It has been disclosed by a court action concerning the usurpation of the title of doctor of laws by an election candidate that any one can use this title. The appellate court decided that an election candidate who places after his name on posters and election bulletins the degree of doctor of laws, which he does not possess or which was conferred on him by a foreign university, does not commit an act of usurpation of a university title. As regards the title of doctor of medicine, it is not entirely protected by the French law. The usurpation of that title is subject to a penalty if it is concurrent with the illegal practice of medicine or if the degree has been granted by a foreign university and the person did not mention the name of the foreign university after the title of doctor. Laurent, Amiard and Dalimier, in 1914, introduced in the chamber of deputies the following bill: "Any one usurping a title or a university degree, or having assumed in France a title or a university degree conferred by a foreign country, without mentioning its origin, will be liable to imprisonment of from one month to three years or to a fine of from 100 to 10,000 francs." A few months ago, a similar bill was introduced in the chamber of deputies by Deputies Liouville and Paul Boncour. On the other hand, the department of liberal professions of the Confédération des Travailleurs Intellectuels has adopted this resolution:

> The department of liberal professions, considering that professional titles and scientific or university degrees are not protected by the penal law, which should insure such protection, that the terms of Article 259 of the penal code should be made to include the protection of university degrees and professional titles, and that foreign laws, and especially the Italian penal code, have for many years given such protection, which would be looked on with favor by the public and the interested parties, requests the executive committee of the Confédération des Travailleurs Intellectuels to take the necessary steps to obtain the enactment of a law to complete Article 259 of the penal code (pertaining to the wearing of a costume, uniform or decoration, and the unjustified conferring of an honorary title) by adding the following paragraph: Any one who has adopted illegally and for any motive whatsoever a professional title protected by laws and rules or a university degree conferred by a national institution, shall be liable to the same penalty, namely, imprisonment of from six months to two years or a fine of from 500 to 10,000 francs.

Radium in Madagascar

Recent researches have demonstrated that the region of Sodvizandriana, in the island of Madagascar, contains quite a quantity of radium minerals. If the deposits already known were mined, 4 gm. of radium could be extracted, which would be equivalent to half of what the world has already produced.

Bicentennial of Théophile de Bordeu

A celebration was held in Pau under the presidency of Dr. Doléris of the Academy of Medicine, to commemorate the bicentennial of Théophile de Bordeu (1722-1776), who exercised a great influence on the evolution of French medicine toward the end of the eighteenth and at the beginning of the nineteeth century. Broussais considered de Bordeu the principal founder of pathologic physiology, and it is in his "Recherches anatomiques sur la position des glandes et sur leur action," published in 1751, that we find clearly expressed the fundamental principles of pathologic physiology, based on the comparison of the healthy or morbid condition of tissues and the relation between the structure of organs and the phenomena of disease.

Undoubtedly Broussais and Bichat drew their inspiration from de Bordeu's work, which is filled with original ideas. On the other hand, de Bordeu can be considered as the precursor of Brown-Séquard and Claude Bernard as regards the theory of internal secretions, not only on account of interesting and original considerations which suggested to this eminent physician of the eighteenth century the rôle of genital gland secretions and their stimulating influence on the whole organism (de Bordeu considered them as a "particular stimulus to the machine—*novum quodam impetum faciens*—to which physicians did not pay enough attention"), but also and above all on account of the fundamental principle of his doctrine "that an organ fulfils the functions of focus and laboratory to a particular humor, which it sends back into the blood after it has prepared it and given it its peculiar character." The idea that venous blood coming from various organs presents differences more or less important is found expressed clearly in de Bordeu's work: "Examine the blood returning from each principal region . . . it is obvious that it has special qualities acquired in the tissue of the parts whence it comes."

MADRID

(From Our Regular Correspondent)

March 9, 1922.

Kidney Function and Glycosuria

Dr. Rodríguez Carracido, professor of biologic chemistry, who is also rector of the Madrid University, delivered a lecture at the Royal Academy of Medicine on a new theory of renal function and glycosuria. Dr. Carracido emphasized the enormous amount of work the kidney must perform. The blood enters the renal arterioles and branches out in the glomerules, entering the capillaries again in the convoluted tubules and finally collecting in the renal veins. Its molecular concentration increases from 0.56 cryoscopically to 1.50 in the urine. How can such enormous concentration be carried out? Through the combustion of glucose, the only substance intended by the body for combustion and production of energy. It is because of this combustion that in normal cases no glucose reaches the urine from the 1.50 gm. per liter in the blood. Chemists and pathologists have brought out in recent studies the biologic value of molecular concentration of solutions and the fact that their increase is the cause of pathologic phenomena formerly attributed to special poisons. On the other hand, there are cases in which glucose makes its way into the urine: 1. Through a sugar excess in the blood. In this case the increase over the normal forces into the kidney cells more sugar than can be burned and a part reaches the urine. 2. When there is a glycosuria without a sugar excess in the blood. In this case, the problem is very difficult. In order to study it, Dr. Carracido used glycosuria caused by phlorizin. It is a fact that the injection of phlorizin causes a transitory diabetes with no increase in the blood sugar.

Rodríguez Carracido has studied experimentally the action of phlorizin in several chemical mediums, noting that it acts only on albuminoid solutions, which it precipitates. This is the explanation of the action of phlorizin on cells which are attacked in their albuminoid content. Once injured in this way, the renal cells permit the passage of sugar from the blood. Incidentally, he stated that a phlorizin solution causes glycosuria in all animals save rabbits. These rodents feed on plant roots. Phlorizin is a glucosid found in the bark of some roots and it is probable that rabbits have fed during the ages on phlorizin-containing roots, becoming immunized to this glucosid.

Physiology of the Corpus Callosum and Surgical Operations on This Organ

Dr. Rodríguez Lafora presented at the Royal Academy of Medicine a report illustrated with moving pictures on experiments made on six monkeys, in order to study the function of the corpus callosum. Surgical operations were carried out by Dr. Goyanes, the surgeon of the General Hospital of Madrid, who made sections in the front, central and posterior parts, both to the right and left of the falx cerebri. These experiments demonstrated that the section of the corpus callosum is followed in monkeys by a paralysis of the upper or lower feet, this depending on the location of the section, i. e., the anterior or the posterior part. Besides, both the right and the left section are followed by a series of phenomena identical to those of crossed hemiplegia. These phenomena may be explained according to Monakow's theory that in cerebral injuries, besides the local lesion, inhibitory phenomena are produced in structures connected directly with the injured site. As the monkeys do not have, as man has, a hemisphere controlling its mate, hemiplegic symptoms appear in them, after sections at the right of the falx cerebri. The location of these symptoms varies according to the site injured. In man, the control exercised by the left brain hemisphere causes the lesions in the corpus callosum to be accompanied invariably by right hemiplegia.

Dr. Goyanes summarized his experience in the surgery of the corpus callosum, advising puncture and evacuation of the lateral ventricles in cases of hydrocephalus. He has performed this operation more than twelve times. In cases of acute hydrocephalus, this method may be followed by a cure, as happened with a patient who had choked disk and incipient optic neuritis. In a few days she was able again to detect the light, then color and shape of objects, and finally she was able to read without glasses. On the other hand, in congenital hydrocephalus, while the decrease of the cerebral pressure acts symptomatically, it is never curative, as illustrated by his twelve cases. He insists, however, that the operation, although not curative, is very beneficial, since it improves the patient's condition and relieves painful symptoms. Intracerebral pressure may be enormous in hydrocephalus. He has seen a case in which the fluid was so pent-up in the skull that it forced its way into the sheath of the olfactory nerves and came out through the nose in an almost continuous dropping. This relieved the patient so much that when a cold obstructed the nasal passages she always got worse; in fact, she died as the result of a cold. Dr. Goyanes has also resorted to the puncture of the corpus callosum in three cases of brain tumor accompanied by a marked increase of intracerebral pressure, which were not suited for radical surgery. Three also improved with this method. Dr. Goyanes recommends this form of operation, the technic of which is simple, in cases in which it is indicated.

Retirement of Dr. Isla

Dr. Isla, the dean of the provincial board of charities of Madrid, has retired. Dr. Isla became famous as an anatomist and surgeon in the General Hospital of Madrid, in the golden age of surgery following the studies of Lister, whose friend Isla was. Dr. Isla is now offering his optional course of surgery on the cadaver. He deserves credit for organizing the Madrid Maternity. The provincial government of Madrid, on the occasion of his retirement, conferred on him the title of honorary dean.

Tribute to Ferrán

Dr. Pulido, the president of the National Public Health Board of Spain, who is also a life senator, recently gave a banquet at the Ritz Hotel, which was attended by several ministers, heads of political parties, prominent physicians, journalists and writers. At the banquet, in front of each guest's seat, there were two large volumes written by him and published at the expense of the government. The purpose of these books was to bring out the work accomplished by Dr. Ferrán, a scientist to whom bacteriologic science is much indebted. He has, however, been grossly neglected in Spain because of his modesty, which makes him prefer life in the laboratory to the brght light of the academies. Dr. Pulido recalled how Ferrán performed inoculation for the first time with live cholera bacilli in the cholera epidemic of 1885, afterward vaccinating entire towns, which were thus proctected against the scourge that caused so many losses in Spain. Ferrán's primacy has been acknowledged throughout the world. He, before anyone else had used the methods, vaccinated the disinfecting brigade of Barcelona against typhoid fever. His method was followed afterward by other bacteriologists, such as Vincent. Finally, Ferrán has built a complete theory of tuberculosis and originated a vaccine to combat this disease, which is receiving a great deal of attention. The two books written by Dr. Pulido are entitled "Vae Inventoribus Magnis" and "Precursor, Representativo y Mártir."

A Warning Against Chinese Eggs

Dr. Martínez Vargas, the dean of the Barcelona Medical School, has spent a few days in Madrid, and during his stay he delivered a lecture before the public health society. Dr. Martínez Vargas talked on infant health and incidentally called attention to the increasing imports of eggs, now being brought in from China in large quantities. Perhaps owing to poor transportation they arrive in a very unsatisfactory condition and in some cases they have caused bowel disturbances, with symptoms very similar to typhoid or paratyphoid infection.

BUENOS AIRES

(From Our Regular Correspondent)

May 1, 1922.

Antituberculosis Campaign

The public assistance department has advised the further extension of antituberculosis friendly societies. There are already several in existence, such as the one organized by mail and telegraph employees. Besides, the mutual assistance societies have a membership of 600,000. It is considered that at least for some time private organizations will offer the most efficient means for combating tuberculosis.

There has been opened this month, at La Plata, an antituberculosis dispensary established by the antituberculosis league. Its creation is due to the initiative of a newspaper man, E. Mongiardino. The dispensary includes departments of clinical medicine, pediatrics, laryngology, surgery and roentgen rays, and a laboratory and pharmacy. There is a social prophylaxis section, with visiting nurses and a disinfecting service, etc. This section will also be in charge of education and propaganda, collection of statistics, etc. Expert medical service and nursing assistance are rendered free of charge.

Food Adulteration

The public health department of the province of Buenos Aires, which has shown much energy in protecting the people against patent medicines, etc., has just forbidden the sale of many harmful or equivocal food products. This caused some conflict with the municipal authorities of La Plata, who claimed for themselves these supervising functions.

Buenos Aires Hospitals

There is an average of 6,000 patients in the local hospitals, with about 1,000 admissions weekly. In the national, semiprivate and private hospitals, the number of patients is about 5,000.

Local sanitary conditions are good, but ships from Europe continue to bring patients with influenza, bronchopneumonia, and pneumonia.

Typhus Fever

The public assistance authorities of Tucuman have verified the occurrence of a case of typhus fever. This disease is, however, decreasing in the small original foci.

National and Foreign Biologic Products

Since the war, there has been an increase in the use of foreign biologic products at the expense of national products. This is shown in the amount of sales of the preparations of the national department of public health. This fact is explained on three grounds: 1. Better external presentation of foreign products. 2. Well organized propaganda on their behalf. 3. A campaign against national products. However, for patriotic reasons, physicians should employ the home products, since: 1. They are just as good as the best foreign products. 2. They are cheap. 3. The funds remain in the country. 4. They help to support useful public health and research institutions. It should be added that harmless foreign products such as antituberculosis serums and vaccines have had a large sale since the national department of health took the rather strange attitude that it is compelled to authorize the sale of any product, no matter how useless, provided it does no harm.

New Rector of the University

Dr. Arce, professor of clinical surgery in the Buenos Aires Medical School, is now rector of the university, a position to which he was lately appointed.

BERLIN

(From Our Regular Correspondent)

March 25, 1922.

Reorganization of the Berlin First-Aid Service

The *Deutsche medizinische Wochenschrift* published recently a report of the medical director of the first-aid service of Berlin, from which it appears that there are forty-three first-aid stations located in various parts of the city, some of which are organized as independent first-aid stations, while others are connected with hospitals. These stations are provided with a limited number of instruments and a small supply of bandaging material and other things needed for first aid, including a pulmotor. They are also equipped with a case of instruments and supplies that the physician may take with him when called to outside emergency cases; for the first-aid stations not only give first aid on the premises but also respond to telephone calls and demands from other sources. An endeavor is constantly being made to develop and improve the service. Of late, the fire department has been called on in emergencies to transport the first-aid physician to the scene of an accident. In the case of multiple accidents or catastrophes, the first-aid stations are so organized that two or more, or in extreme cases, all the stations can cooperate. Provision is made in every first-aid station to accommodate temporarily persons taken suddenly and severely ill; also those suffering from alcoholic poisoning. The medical service of the first-aid stations is in the hands of practicing physicians who put in part time. At present, the fees paid are 10 marks an hour in the daytime and 50 marks an hour for night service. At every station there are three attendants to aid the physician and take charge of the nursing. This description applies to such stations as are located in shops or barracks. In the hospitals, the first-aid station is merely an appendix of the whole hospital organization. It remains to be seen whether, in case the work should be heavy, it is going to prove feasible to combine first-aid service with hospital service, in this manner.

Another feature of the Berlin first-aid service is the transportation of the sick. At present, about twenty motor ambulances, scattered over the city, are available and are transporting more than 200 patients daily. After the transporation of an infectious case, the ambulance is disinfected by spraying and washing with a solution of cresol in soap, while the blankets and other material are cleansed with compressed steam. The ambulances are ordered by the central office of the first-aid service, by any of the first-aid stations, or by the police. The motor ambulances used for the transportation of patients are of the very best construction, especial attention being paid to the quality and functioning of the springs, since, after a long period of testing of a certain type of spring, the use of litters inside the ambulance has been discontinued. The central office of the first-aid service constitutes the backbone of the whole system, as it has telephonic connection by direct wires with all the hospitals, all first-aid stations, all the ambulance stations and numerous official authorities. One great convenience, which was proposed by Professor Schwalbe twenty years ago, is the fact that the central office keeps on file a list of the available vacant beds in the various hospitals. Before this plan was introduced it frequently happened that a patient had to inquire at several hospitals before he found accommodations, whereas now, by telephoning to the central office of the first-aid service, which receives several times a day information from hospitals in regard to vacant beds, any one can learn where a bed is available. After a bed is engaged, it is held for several hours at the disposal of the patient, awaiting his arrival. The importance of such a bureau of information for a metropolis the size of Berlin was realized more particularly during the last influenza epidemic. Through the aid of the central office, it was possible, by the prompt information furnished in regard to beds becoming available and stations being opened up, and by the transportation of the mildly sick from one hospital to another, to provide hospital accommodations near by for all influenza patients requiring hospital treatment.

The first-aid service as a social institution is not fully self-supporting. Proper consideration of the rights of general practitioners demands, however, that the first-aid stations shall not be made use of by the public in such a manner as to bring detriment to the medical fraternity in general. On the other hand, every person in need of aid must receive in the first-aid stations the care and attention he requires, without previous inquiry as to his economic or financial status. If he is in possession of funds, he is charged the same fees that practicing physicians charge the general public. The annual excess of expenditures over receipts for the first-aid service, proper, amounts, at the present time, to 3,500,000 marks; also the transport service for the sick requires an annual appropriation of about 3,000,000 marks. These deficits are supplied out of the city treasury. No charge is made for information furnished the public by the central information bureau.

Institute of Research for Roentgenographic Technic

March 11, an institute of research for roentgenographic technic was opened in Stuttgart. The task that the laboratory sets for itself is the investigation of the physical bases for the medical application of roentgen rays; more particularly, the perfection of dosimetry in its bearing on roentgen-ray injuries. The laboratory will also undertake to solve problems connected with the application of roentgen rays to the testing of various materials and substances, including studies on the structure of metals; for example, changes in the structure of steel, due to heating, rolling, pressing, etc. The effects of roentgen rays on chemical processes will also be studied.

While the laboratory is primarily an institute of research, the equipment will be made available for instruction purposes by the organization of lecture courses for electrical engineers and for physicians. Stuttgart is distinguished, therefore, in having the only polytechnic in Germany at which roentgenographic technic is taught.

With the aid of the Deutsche Röntgengesellschaft and the German manufacturers of roentgen-ray apparatus, the laboratory was established in 1919 as a foundation institute. The German manufacturers placed gratuitously all the roentgen-ray apparatus needed (valued at almost 1,000,000 marks) at the disposal of the institute. As a result of the far-seeing vision of the government of Wurttemberg, a special laboratory building, equipped with all the necessary protective devices, has been erected at public cost. It was due in great measure to the efforts of Dr. Glocker, the director of the new institute, that the institute was established.

Recent Researches on Skulls

At the last meeting of the Berlin Anthropologic Society, the Berlin anatomist Dr. Mair gave an illustrated lecture on the bregma (the point of junction of the sagittal and coronal sutures), discussing more particularly the pithecanthropus. Mair has made researches on 2,000 skulls, among which were the skulls of many different races—negroes of central Africa, bushmen, etc. He gave a morphologic analysis of the bregmatic eminence on the human skull, based on scientific data, including studies in comparative anatomy, and believes he has discovered the explanation of the form and position of the bregma and the coronal suture on the skull. Mair extended his researches to the remains of the Neanderthal skull and the Spy, Cro-Magnon and Aurignac skulls. The Cro-Magnon skulls present flattened foreheads, while the skulls of the Aurignac man and the man of Oberkassel show slightly protruding foreheads. Professor Klaatsch found this eminence also on the skulls of Australians; it is also found on the skulls of Tasmanians, in the man of Neu Pommern and in the Neanderthal man. According to Mair, the protrusion of the forehead does not result from an abnormal growth of the cranial sutures, but is due to pressure from within the brain.

It it is of interest to note that the skull of Goethe and likewise that of Wilhelm Waldeyer present such eminences. Against the assumption that the bregmatic eminence is the result of chance, we may cite its frequent occurrence in modern skulls. Following the statements made by Gustav Schwalbe, the lecturer gave a description of the skull-cap of *Pithecanthropus erectus,* which was found by Dubois in Java, some thirty years ago, along with a femur bone and a tooth. Whereas Rudolf Virchow considered these remains to be those of an anthropoid ape, Schwalbe recognized in them a combination of human and animal characteristics. Mair, however, expressed his opinion to the effect that the pithecanthropus skull did not differ essentially from other types of human skulls, and that it coincided very closely with that of the Aurignac man. An extensive discussion following the lecture led to no common agreement with reference to the position of the pithecanthropus in the chain of highly organized mammals.

Marriages

William Pepper, dean of the Medical School of the University of Pennsylvania, Philadelphia, to Mrs. Phoebe Voorhees Crayton, in Philadelphia, April 3.

Martin F. Kocevar, Steelton, Pa., to Miss Harriet C. Oenslager of Harrisburg, Pa., March 14, in Atlantic City, N. J.

Frank S. Schoonover, Rochester, Minn., to Miss Ann Maurice Simmons of Fort Worth, Texas, in February.

Earl Harlan to Miss Wanda Hudson, both of San Luis Obispo, Calif., in Santa Barbara, March 9.

Donald Austyn Curtis to Miss Margaret Elizabeth Freer, both of Hackensack, N. J., April 18.

William Parks Belk to Miss Elizabeth A. Cassidy, both of Philadelphia, February 10.

James M. Mitchell to Miss Ruth Huntington Forbes, both of Pontiac, Ill., February 22.

William A. Borin to Miss Phoebe Grinnell, both of Bartonville, Ill., February 13.

Vandeveer Taber Carr to Miss Viola Myers, both of Tiffin, Ohio, February 22.

Deaths

H. Bert Ellis ⊕ Los Angeles; University of Southern California Medical School, 1888; died at his home, April 15. Dr. Ellis was born in Maine, May 17, 1863. He received his bachelor degree from Acadia College, Wolfville, N. S., in 1884, and his medical degree from the University of Southern California in 1888. Following his graduation he took postgraduate work in Germany and in Austria, after which he returned to the United States and took up the practice of medicine in Los Angeles. Since 1893 he devoted himself exclusively to diseases of the eye, ear, nose and throat, holding the professorship in ophthalmology in his alma mater from 1896 to 1915. Dr. Ellis was a member of the American Rhinological, Laryngological and Otological Society. He was a member of the first House of Delegates of the American Medical Association and served in ten annual sessions. He was also a member of its Board of Trustees from 1917 to 1920.

Joseph Walter Bannon, Cranston, R. I.; Medico-Chirurgical College of Philadelphia, 1915; member of the Rhode Island Medical Society; served during the World War, M. C., U. S. Army, with the rank of lieutenant, at Camp Gordon, Ga.; appointed acting assistant surgeon, U. S. Public Health Service in 1919 and transferred to the U. S. Veterans' Bureau in December, 1921, as examining physician; police surgeon of the city of Cranston and school medical inspector for the third district, died, March 16, aged 32, at the St. Joseph's Hospital, Providence, following an operation for ulcers of the stomach.

Laban T. Bremerman ⊕ Downington, Pa.; Medical Department of Columbian University, Washington, D. C., 1874; surgeon for the Pennsylvania Railroad; served on the school board for twenty-five years; burgess of Downington for two terms; died, March 31, aged 72, at the Chester County Hospital, West Chester, from cerebral hemorrhage.

Reginald Huber Meade ⊕ Kansas City, Mo.; Beaumont Hospital Medical College, St. Louis, 1896; served in the M. C., U. S. Army, with the rank of major during the World War, overseas; consultant to the United States Veterans' Bureau and Hospital; former president of the Kansas City Academy of Medicine; died, March 10, aged 50.

George Gordon Needham ⊕ New York; Bellevue Hospital Medical College, New York, 1865; formerly house physician at the Nursery and Child's Hospital and resident physician at the Infant's Home, New York; died, April 5, aged 80, from pneumonia.

Herman G. Klippert, New York; Medical Department of Columbia College, New York, 1889; member of the Medical Society of the State of New York; member of the American Medico-Pharmaceutical League; died, April 1, aged 65, from heart disease.

Frank Richard Burdeno, Sturgis, Mich.; Detroit College of Medicine, Detroit, 1907; member of the Michigan State Medical Society; organizer of the first radio supply station in the town; died, March 23, aged 47, from septicemia and erysipelas.

George Arthur Bingham, Toronto, Ont.; Trinity Medical College, Toronto, 1884; associate professor of clinical surgery and clinical anatomy, University of Toronto Faculty of Medicine; died, March 3, aged 61, from pleurisy and pneumonia.

J. Alexander Davisson ⊕ Dayton, Ohio; Miami Medical College, Cincinnati, 1882; formerly on the consulting staff of the Miami Valley Hospital; member of the board of education; died, March 30, aged 64, from arthritis.

Norvin Earl Greene, Victoria, Miss.; Medical Department of the Tulane University, New Orleans, 1910; was found dead in his cell in the city prison, presumably from an overdose of morphin, March 21, aged 39.

George Alexander Ramsauer, China Grove, N. C.; Jefferson Medical College, Philadelphia, 1880; member of the Medical Society of the State of North Carolina; died, March 11, aged 64, from chronic nephritis.

Wesley Asbury Rape ⊕ Victoria, Texas; Missouri Medical College, St. Louis, 1887; specialized in ophthalmology, otology, laryngology and rhinology; died, March 27, aged 57, in a hospital at Cuero.

Edwin George Bennett, Petaluma, Calif.; Rush Medical College, Chicago, 1878; member of the Medical Society of the State of California; died, February 21, aged 68, following a long illness.

Ernest Arey Dyer, Salem, Mass.; Medical School of Harvard University, Boston, 1904; formerly physician to the State Infirmary, Tewkesbury; died, March 21, aged 46, in New York.

John S. Phillips ⊕ Pittsburgh; Miami Medical College, Cincinnati, 1876; formerly principal of Mount Oliver School; died, March 31, aged 69, at the Western Pennsylvania Hospital.

Oan J. Thompson, Reading, Pa.; Jefferson Medical College, Philadelphia, 1895; formerly on the staffs of the St. Joseph and Reading hospitals; died, March 31, aged 51, from chronic nephritis.

John C. Willis, Chicago; Kentucky University Medical Department, Louisville, 1906; formerly of Louisville, Ky.; died, April 12, aged 55, from heart disease and pneumonia.

John Joseph Donovan ⊕ Litchfield, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; died, March 18, aged 43, from angina pectoris.

Benjamin F. Chiles, Pecan, Ark.; Physio-Medical College, Indianapolis, 1884; died, March 26, aged 63, at St. Joseph's Hospital, Memphis, Tenn., following a long illness.

Katsugoro Haida, Honolulu, Hawaii; Medical College of the Pacific, San Francisco, 1897; member of the Medical Society of Hawaii; died, February 9, aged 58.

James G. Turner ⊕ Houghton, Mich.; University of Maryland School of Medicine, Baltimore, 1878; was found dead in bed, April 4, aged 65, from heart disease.

Henry Briscoe Thomas ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1888; died suddenly, April 2, aged 57, from heart disease.

Charles DeWitt Clark, Minneapolis, Kan.; Hahnemann Medical College and Hospital, Chicago, 1867; Civil War veteran; died March 26, aged 80.

Preston E. Waddell, Natchitoches, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1895; died, March 30, aged 60.

Earl Emory Cannady ⊕ Prior Lake, Minn.; Northwestern University Medical School, Chicago, 1909; died, March 30, aged 36, at Monrovia, Calif.

J. DeWitt McConnell, South Pasadena, Calif.; Miami Medical College, Cincinnati, 1877; died, April 6, aged 73, from cerebral hemorrhage.

Pierre McDermid ⊕ Fontanelle, Iowa; Rush Medical College, Chicago, 1898; member of the state legislature; died, March 29, aged 45.

Martin V. B. Clark, Sutton, Neb.; Cleveland Medical College, Cleveland, 1869; died, March 22, aged 71, following a short illness.

Johan B. H. Feenstra, Lake View, Iowa; University of Groningen, Holland, 1864; died, March 18, aged 79, at Whittier, Calif.

Peter Stephen Mallard, Detroit; Meharry Medical College, Nashville, Tenn., 1920; died, February 2, aged 33, from pneumonia.

Ignatius Walthall Powell ⊕ St. Louis; Barnes Medical College, St. Louis, 1907; died, April 6, aged 46, from pneumonia.

Russel W. Brown ⊕ Bay City, Mich.; Michigan College of Medicine and Surgery, Detroit, 1889; died suddenly, April 3, aged 57.

Stephen P. Tracy, Walkerton, Ind.; Hahnemann Medical College and Hospital of Chicago, 1886; died, March 24, aged 68.

William F. Shawley, Orofino, Idaho; College of Physicians and Surgeons, Keokuk, Iowa, 1882; died, February 12, aged 70.

William D. Vinson, Atlanta, Ga.; Southern Medical College, Atlanta, 1882; was shot and killed, March 30, aged 61.

Moses Henry Green, Philadelphia; Jefferson Medical College, Philadelphia, 1882; died, April 4, aged 75.

Hyman Chester, Providence, R. I.; Maryland Medical College, Baltimore, 1900; died, March 29, aged 41.

Leroy W. Davis, Nauvoo, Ala.; Medical College of Georgia, Augusta, 1853; died, March 28, aged 93.

Frank C. Jones, Los Angeles; University of Michigan, Ann Arbor, 1880; died, March 23, aged 74.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

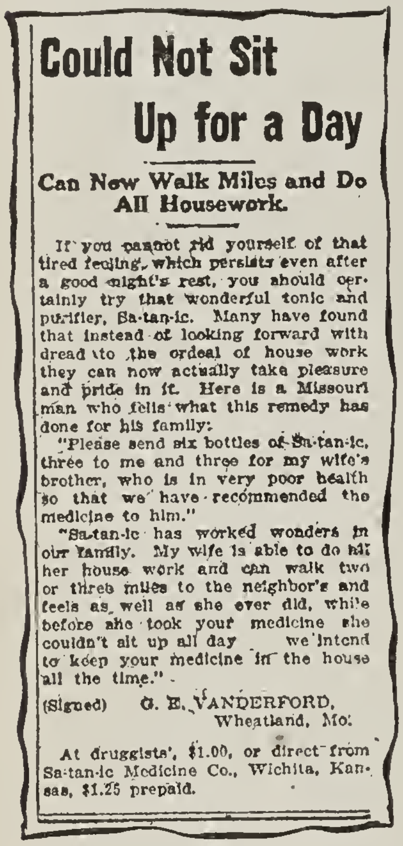
MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Sa-Tan-Ic.—The Sa-Tan-Ic Medicine & Mfg. Co., Wichita, Kan., shipped in October, November and December, 1920, and January, 1921, a quantity of "Sa-Tan-Ic" from Kansas to Missouri. Specimens of the nostrum were analyzed by the Bureau of Chemistry, which reported that analysis showed it to contain magnesium sulphate (Epsom salt), cascara bark extractives, salicylic acid, methyl salicylate, oil of peppermint, water and a trace of alcohol. The trade package contained such claims as:

> "Blood Purifier. . . . System Renovator. . . . For Stomach, Kidney and Liver Complaints, Dyspepsia, Appendicitis, Asthma and Shortness of Breath."
>
> "The Woman's Friend, For Weak Back, Bearing Down Pains and Sick Headache."
>
> "Heart Trouble and . . . appendicitis, . . . typhoid and such diseases."
>
> "Rheumatism and all Blood Disorders. . . . Kidney Trouble Overcome. . . . Inflamation of The Gallbladder. . . . Cured by Taking Sa-Tan-Ic."

These and similar claims were declared false and fraudulent as the article did not contain any ingredient or combination of ingredients capable of producing such curative effects. In March, 1921, decrees of condemnation and forfeiture were entered and the product was declared misbranded. The court ordered that the stuff be released to Sa-Tan-Ic Medicine & Mfg. Co. on payment of the costs of the proceedings and the execution of a bond in the sum of $800.—[*Notice of Judgment No. 9659; issued Jan. 7, 1922.*]



Could Not Sit Up for a Day

Can Now Walk Miles and Do All Housework.

If you cannot rid yourself of that tired feeling, which persists even after a good night's rest, you should certainly try that wonderful tonic and purifier, Sa-tan-ic. Many have found that instead of looking forward with dread to the ordeal of house work they can now actually take pleasure and pride in it. Here is a Missouri man who tells what this remedy has done for his family:

"Please send six bottles of Sa-tan-ic, three to me and three for my wife's brother, who is in very poor health so that we have recommended the medicine to him."

"Sa-tan-ic has worked wonders in our family. My wife is able to do all her house work and can walk two or three miles to the neighbor's and feels as well as she ever did, while before she took your medicine she couldn't sit up all day we intend to keep your medicine in the house all the time."

(Signed) O. E. VANDERFORD,
Wheatland, Mo.

At druggists', $1.00, or direct from Sa-tan-ic Medicine Co., Wichita, Kansas, $1.25 prepaid.

Banes' Kidney and Rheumatic Remedy.—Dr. Artilens Valerius Banes, who did business as the "Dr. A. V. Banes Medicine Co." St. Joseph, Mo., shipped in October, 1918, a quantity of this nostrum which was misbranded. The Bureau of Chemistry reported that analysis showed the preparation to contain sodium and potassium compounds of iodin, acetic acid, nitric acid and salicylic acid, vegetable extractive matter, sugar, alcohol and water. It was falsely and fraudulently represented as an effective preventive, treatment and cure for diseases of the kidney, liver and bladder, gravel, gallstones, liver colic, nasal catarrh, diabetes, malaria, eczema, and to rid the system of nicotin. In September, 1920, Banes pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 9663; issued Jan. 7, 1922.*]

Silverstone's Sexual Pills.—The S. Pfeiffer Mfg. Co., St. Louis, Mo., shipped in April, 1920, a quantity of "Dr. Silverstone's Sexual Pills" from the State of Missouri to the State of Washington. The federal chemists reported that the product was a sugar-coated pill consisting essentially of plant extractives, including resins, nux vomica, alkaloids and damiana. The product was falsely and fraudulently labeled "For Vim, Vigor and Vitality." In April, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9667; issued Jan. 7, 1922.*]

Nux-Auro-Papanad.—A quantity of this product was shipped in April, 1919, from the State of New York to the State of Washington. The government report does not give the name of the shipper or the name of the manufacturer. According to material in the Propaganda, a product of this name was put out by the American Apothecaries Company, New York City. When analyzed by the Bureau of Chemistry the preparation was reported to consist of red sugar-coated pills containing strychnin, salts of zinc, calcium and lithium and creosote. The preparation was falsely and fraudulently labeled:

> "Restorative, Aphrodisiac. . . . Indicated in . . . Vaso-Motor-Paresis, Neurasthenia, Melancholia, Malnutrition, General Debility, Sexual Exhaustion."

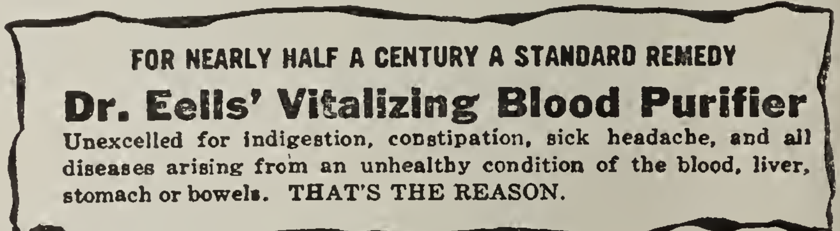
In November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9668; issued Jan. 7, 1922.*]

Paulette's Brand Tansy Tablets.—Fay & Youngs Rubber Corp., New York City, shipped in May, 1920, a quantity of this product from New York City to the State of Washington. The preparation was labeled in part:

> "The most reliable tablets known for the suppression of the menstrual function.
>
> "Best results are obtainable in using The Renowned 'Paulette Brand.' . . . Tansy, Cotton Root, Pennyroyal and Apiol Tablets . . . justly famous Regulator Tablet."

The federal report does not give the results of the chemists' examination but states that the article contained no ingredient or combination of ingredients capable of producing the effects claimed. In January, 1921, the claims were declared false and fraudulent; judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgement No. 9669; issued Jan. 7, 1922.*]

Eells' Vitalizing Blood Purifier.—Elbert Payton, who did business at Centerville, Iowa, as "F. Eells & Sons Co.," shipped in April, 1919, a quantity of "Dr. Eells' Vitalizing Blood Purifier" which was misbranded. The federal chemists reported that the preparation was a water-alcohol solution consisting essentially of sugar, Epsom salt, laxative plant material and traces of oils of wintergreen and sassafras. The preparation was falsely and fraudulently represented as an effective treatment and cure for sick headache, dyspepsia, ringworm, rheumatism, diseases of the blood, malaria, female weakness, suppressed menstruation, old sores, goiter, sore eyes, gallstones—and some other things! In March, 1921, Payton pleaded guilty and was fined $50 and costs.—*Notice of Judgment No. 9693; issued Jan. 7, 1922.*]



FOR NEARLY HALF A CENTURY A STANDARD REMEDY

Dr. Eells' Vitalizing Blood Purifier

Unexcelled for indigestion, constipation, sick headache, and all diseases arising from an unhealthy condition of the blood, liver, stomach or bowels. THAT'S THE REASON.

LeSieur's Syrup of Tar and Cod Liver Extract.—Philias E. LeSieur, Boston, Mass., did business as the Ocean Mills Co. In July, 1919, he shipped a quantity of this preparation which was misbranded. The Bureau of Chemistry reported that the stuff contained chloroform, 2.45 minims to each fluidounce, menthol, oil of tar, ammonium salts, sugar, water, and a small quantity of alcohol. The preparation was falsely and fraudulently represented as an effective preventive and cure for bronchitis, whooping cough, asthma, "consumption at its first stage," and all diseases of the respiratory organs. In

November, 1920, LeSieur entered a plea of *nolo contendere* and was fined $25.—[*Notice of Judgment No. 9696; issued Jan. 7, 1922.*]

Correspondence

MEDICAL SUPERVISION OF COMMERCIAL LABORATORIES

To the Editor:—In May, 1921, the following resolution was passed by the Comitia Minora of the Medical Society of the County of New York:

"As a matter of public policy, it is recommended to the profession that their support of commercial laboratories be withdrawn, and wherever possible, patients be referred to laboratories under the supervision of competent and qualified medical men."

On close reading, one will see that this resolution is very comprehensive and applies with equal force to both clinical-pathologic and roentgen-ray laboratories. Although clinical-pathologic laboratories may handle only specimens received from doctors' offices, nevertheless the Comitia Minora has ruled as good policy that such laboratories also should be controlled and supervised by competent medical men.

A lay technician who opens his own office and works entirely independent of medical supervision is violating the medical practice act when he gives out written and verbal diagnoses of pathologic conditions, in that he is practicing medicine without a license. Moreover, in the case of the roentgen ray, it is decidedly bad ethics for an unlicensed, unsupervised male technician to handle either male or female patients who may be in various stages of sickness. In the third place, the roentgen ray itself, used either in diagnosis or in treatment, has a powerful action and is capable of doing great harm in the hands of such unsupervised technicians.

Many of the commercial laboratories are being operated in direct violation of the medical practice act; even though there may be a physician connected with the institution, there is still a violation of the act (at least in New York State) because in the name of the company he is practicing "under a name other than his own" (Article 8, Section 174). In many cases the diagnoses are made entirely by lay technicians, and the physician's name is signed by the physician, without his seeing either the patient or the films. One large and flourishing commercial laboratory in New York City is owned and run by a chiropractor who believes and advertises that his laboratory is the largest and the best in the world, because he has the liberal support of the medical and dental professions to prove it.

By means of fee schedules offering cheap rates and, in many cases, discounts to physicians (some in New York City offer as high as 40 per cent.), these laymen and commercial laboratories induce good and responsible medical men to patronize them. Yet, in spite of the low rate, when one considers the irresponsible quality of service rendered, there is in reality very little difference in cost between such a service and that of a reputable medical man. A dollar will not buy five dollar service. If there is a volume of work to be done, the medical radiologists can put their laboratories also on a quantity production basis and lower fees in a legitimate manner, still rendering high grade, careful medical diagnostic aid.

It should be of interest to the profession to note a ruling that has been issued by New York State Industrial Commissioner Henry D. Sayer:

"It has come to my attention that certain x-ray technicians who are not medical graduates are in the habit of taking x-ray pictures of pathological conditions and submitting their findings upon such pictures to the insurance carriers and to the department. You will please instruct the referees of the department and claim examiners that in no case are they to accept the findings of an x-ray picture unless such findings are signed by a graduate in medicine. In my opinion, it would be entirely improper to accept as evidence the medical conclusions of one who is not a licensed physician."

Both this and the resolution of the Comitia Minora indicate a consciousness on the part of the medical profession that commercial laboratories should be under management only of some licensed practitioner, and that laymen should work only under direct medical supervision.

Until the medical profession acts as a unit to bring about legislation to correct such abuses, nonmedical, unlicensed technicians will continue to work independently of medical supervision, and to give out verbal and written diagnoses which serve as unprofessional and insecure foundations for diagnosis and treatment. Without waiting for legislation, however, the medical profession as a whole can work toward this end by refusing to patronize in any way any laboratory or technician not supervised directly by a medical man. We must cooperate to the fullest extent on this as well as on other matters of professional and public interest if we are to prevent medicine from becoming commercialized, the prey of the "charlatan" and the "quack."

I. S. TROSTLER, M.D., Chairman,
BYRON C. DARLING, M.D.,
GEORGE M. LANDAU, M.D.
Committee, Radiological Frauds and Improper
Practices, The Radiological Society of
North America.

POSTGRADUATE INSTRUCTION IN VIENNA

To the Editor:—The American Medical Association of Vienna was established in 1904. The objects of the association are to promote the social intercourse and the scientific advancement of its members, to provide information in regard to the scope and relative value of courses, and to furnish data for the rapid orientation of new members in regard to pensions, rooms, restaurants, etc. (Article II of the association's constitution). It has also regulated, in agreement with the teachers, the different fees charged for postgraduate work, and arranged all the courses taken by American physicians. It worked to the satisfaction of both the American physicians who came to Vienna for postgraduate study and the teachers of the Vienna University. A great many courses were placed under the control of the American Medical Association of Vienna, as far as the personnel, number of members, and hours were concerned. These were called book courses and were given for a fee approved of by the society. The so-called "Blue Book" described all these courses and explained how they were conducted. The Blue Book was issued every year on January 1, and the members of the American Medical Association of Vienna, as well as the teachers, abided by its rules. It was not only the quality of the teachers but also the propaganda which the members of the association carried on in the United States that made Vienna the hospitable home of between 300 and 400 American physicians every year. Things ran smoothly most of the time up to 1914, when the war broke out. During the war, Dr. J. Lange, a former president of the American Medical Association of Vienna, remained in Vienna and had the misfortune of breaking down physically as well as financially. The lecturers, in recognition of his services and probably also in expectation of Dr. Lange's sending back 150 American physicians to Vienna, as he promised, made up a purse with which to send him home to Chicago. They also defrayed the expenses of a Blue Book, which he had compiled without any authority whatever from the association, and in which he printed exorbitant fees for the courses to be given by the various lecturers. This is the Blue Book of 1919. These preliminary remarks we find necessary for the full understanding of our present, unfortunate difficulties with the Vienna Faculty concerning fees charged for courses.

In the summer of 1921, about twelve American physicians came to Vienna to take courses, and first began to complain about the fees they were asked to pay. They were charged all the way from $1 to $10 for one hour. The discrimination that was going on against American physicians became unbearable, for it was a twofold discrimination. To understand this, you must know that two sorts of courses were being given at the clinics:

1. Courses read in German and accessible to physicians from any part of the world. For these courses, the lecturers charged the Austrian physicians about one fifth of what they charged physicians coming from the newly formed republics of dismembered Austria. Such physicians were called Neu-Ausländer ("new" foreigners). Physicians, however, who came from such countries as France, Switzerland, Holland and England, were called Alt-Ausländer ("old time" foreigners), and they were charged ten times as much as the Austrian physicians who happened to take the same course. Our men, as long as they were not asked to pay more than the so-called "old" foreigners, never refused to pay ten times as much as the Austrian doctors. But they did refuse to pay more than the "old" foreigners (Swiss, Dutch, Italian, French). They could not understand why they should be considered better off financially than the Swiss or Dutch, for instance, because the franc and Dutch gulden increased in value in the same ratio as the dollar.

2. The other possibility open for American physicians to take courses was for them to club together; but, since there were often only a few Americans present, such courses would seldom consist of more than from two to four members. When the teachers were engaged, the Americans were charged $3, $4, $5 or even $12 an hour, regardless of whether the course was given in German or in English. This means that the teacher received for his working hour, if he happened to work for American physicians, from $3 to $12, which in Austrian crowns in August, 1921, amounted to between 3,000 and 12,000 crowns. The same teacher, teaching the very same subject, would sell his hour, according to the printed official program for postgraduate work issued by the Vienna Medical Faculty, for 2,500 crowns to any other foreigner, and 250 crowns, at the most, to an Austrian. It was therefore evident that, no matter whether the American physicians took courses jointly with physicians of other nations or had them arranged for themselves only, they were unjustly discriminated against.

Under such conditions it was but natural that the former American Medical Association was reorganized, and a president elected, who, owing to his Vienna origin, was thought to be capable of adjusting the matter. The president had a committee work with him, and, after August 28, many joint meetings were held with the representatives of the teaching body of the university. In these meetings, the unjustified and unfair attitude displayed toward the American physicians was thoroughly discussed. The committee brought detailed charges of conspicuous discrimination against American physicians. November 19, the American physicians offered a maximum fee of $3 for a teacher's hour, proving absolutely that $3 was from four to ten times more than any other foreigner was asked to pay for the same course by the same teacher. The committee also proved, in a detailed memorandum submitted to the teaching body, Nov. 19, 1921, that $3 an hour in Vienna was a great deal more than $10 paid to the best teacher in postgraduate work in New York. It was proved that the Viennese teacher could buy more for $3 in Vienna than the American teacher could for $10 in New York. It was further shown that, if the terms as proposed by the American Medical Association of Vienna were accepted by the medical teaching staff, many more American physicians would be induced to come to Vienna for postgraduate work, and would thereby reestablish the highly satisfactory prewar organization.

After prolonged debate and negotiations the terms were acceptable to all departments with the exception of eye, ear and skin (Clinics Meller, Neumann, Dimmer, Finger, Riehl). Without the cooperation of these clinics, however, a satisfactory organization would be impossible, for 75 per cent. of the American physicians are directly concerned with these departments.

Since our many attempts to reconcile the relationship between the docents and the American Medical Association of Vienna have been unsuccessful in procuring a definite agreement, we feel it our duty to let medical men in the United States know what sort of discrimination is taking place against American physicians.

We have requested the United States legation in Vienna to intercede and endeavor to change this lamentable state of affairs, but we have little hope of any success in this matter.

We ask The Journal to print this statement to correct the impression conveyed in the letter written by Dr. G. H. Kress of Los Angeles, which appeared in its Correspondence Column, Dec. 31, 1921. Dr. Kress on leaving Vienna was in full knowledge of the condition described above—in fact, he was the author of the memorandum presented to the teaching body of the University of Vienna, Nov. 19, 1921, enumerating all the facts given above—but we surmise that Dr. Kress on leaving Vienna had hoped that the teaching body of the University of Vienna would surely not turn a deaf ear to the just complaints of the American physicians.

A few illustrations of discrimination may be given:

In the official program of the Viennese Medical Faculty for postgraduate courses to be given October, November and December, 1921:

Docent Elias announces a course for metabolic disorders; fee, 500 crowns an hour of his time (if taken by Austrians); the same course he offered to the A. M. A. for $5 an hour, or, according to the exchange value of the dollar at that time, 40,000 crowns an hour.

Docent Stein announces a course for skin diseases and cosmetics; fee, 400 crowns an hour of his time (if taken by Austrians); the same course he offered the A. M. A. for $5 an hour—40,000 crowns an hour from Americans.

Docent Denk announces "Selected Chapters from Special Surgery" for 250 crowns an hour of his time (if taken by Austrians); from the A. M. A. he asks $5 an hour of his time, 40,000 crowns.

In January and February, 1922, when the dollar went up to between 9,000 and 10,000 crowns in exchange:

Docent Hirsch asked in his course "Anatomy and Pathology of Nose and Sinuses" from old foreigners 6,000 crowns for one hour of his teaching time; from Americans, $4, or between 36,000 and 40,000 crowns.

Professor Kyrle, in a skin course given in February to two Swiss, one Egyptian and three Americans, asked 30,000 crowns from the Swiss and Egyptian, and 60,000 crowns from the Americans — and they paid it!

P. S. Graven, M.D., Vienna,
W. G. Sahr, M.D., Chicago,
F. F. Schmidt, M.D., Columbus, Ohio,
John Pennington, M.D., Atlantic City, N. J.,
T. L. Blanchard, M.D., San Jose, Calif.
Executive Committee, American Medical
Association of Vienna.

"AMERICAN MEDICAL JURISPRUDENCE AND THE EXPERT WITNESS"

To the Editor:—The editorial on "American Medical Jurisprudence and the Expert Witness" (The Journal, April 15) brings to the attention of the profession a matter which has long been a source of worry and perplexity to those interested in the relations of medicine to the administration of the law. Your suggestion that "determined efforts should be made by organization of those who are concerned directly, and in other ways, to promote the development of American medical jurisprudence" should be put into force with the least possible delay.

It cannot escape any one who reads the daily papers, even if he has no other contact with court proceedings, that there is a definite tendency at present on the part of public opinion to discredit medical expert testimony. Without going into the reasons for this, it is certain that the legal profession is not to be made responsible for all the difficulty. The medical profession has a distinct responsibility, which it has not met adequately. One thing seems imperative, and that is the establishment of standards in medical jurisprudence comparable to the standards that have been set up in medical education and hospitals, and in pharmacology.

It is hardly necessary to point out that medical jurisprudence is not a matter merely of the coroner's physician or of the pathologic expert, but includes a great many other branches of medicine, more especially that of neuropsychiatry.

I offer the suggestion that this subject be proposed for special discussion at the forthcoming session of the American Medical Association at St. Louis, and, further, respectfully suggest that the officers of the American Medical Association consider at their forthcoming meeting the advisability of creating a council on medical jurisprudence similar to the councils on other subjects, whose main task shall be to work out and establish standards in this subject which can serve as guides not only for physicians but for the legal profession as well.

Herman M. Adler, M.D., Chicago.
State Criminologist, Illinois; Professor
of Criminology, University of
Illinois Medical School.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PRICES OF DRUGS IN 1914 AND NOW—USE OF PITUITARY EXTRACT DURING LABOR

To the Editor:—1. Kindly quote in your columns the prices on the market in 1914 and today of the enclosed list of drugs. 2. What do the best obstetricians say regarding the use of pituitary extract during labor? A friend of mine gives it in every case, and for the last six years has never had a serious mishap. I do not agree with him, but I want to find the latest views, the better to bolster my attack and defense. Please use only my initials if replied to in The Journal. C. F.

Answer.—1. The prices of the drugs in the list referred to, the price being for a pound unless otherwise stated, were:

	1914	1922
Sodium salicylate	$0.39	$0.60
Aspirin (acetylsalicylic acid)	6.50	1.13
Tincture of aconite	1.20	3.00
Antipyrin	3.75	2.85
Tincture of belladona	1.00 pint	2.30 pint
Extract of cascara sagrada	0.40 ounce	0.60 ounce
Tincture of digitalis	1.00 pint	3.00 pint
Fluidextract of ergot	6.00 pint	8.00 pint
Syrup of ferrous iodid	0.80 pint	1.85 pint
Tincture of nux vomica	1.20 pint	2.60 pint
Quinin alkaloid	0.36 ounce	1.25 ounce
Aromatic syrup of rhubarb	5.00 gallon	7.20 gallon

2. Extracts of pituitary should not be injected during the first stage of labor because, if the os uteri is not fully opened, the energetic contractions may cause rupture of the uterus. Full discussions of the use of this drug in labor have frequently appeared in the literature. Following is a list of references to articles in American periodicals during 1921:

Ryder, G. H.: Administration of Pituitrin at Beginning of Third Stage of Labor, with Report of One Hundred Cases, *Am. J. Obst. & Gynec.* **2**: 61 (July) 1921.

Rucker, M. P., and Haskell, C. C.: The Dangers of Pituitary Extract: Some Clinical and Experimental Observations, J. A. M. A. **76**: 1390 (May 21) 1921.

Cron, R. S.: Indications and Contraindications for Use of Pituitrin in Obstetrics, *J. Michigan M. Soc.* **20**: 340 (Sept.) 1921.

Heffernan, R. J.: Pituitrin in Third Stage of Labor, *Boston M. & S. J.* **185**: 443 (Oct. 13) 1921.

Evans, A. J.: Use and Abuse of Pituitrin in Obstetric Practice, *Southwest. Med.* **5**: 1 (April) 1921.

Mitchell, P. S.: Use of Pituitary Extract in Obstetrics, *J. Kansas M. Soc.* **21**: 349 (Nov.) 1921.

Barrow, G. B.: Use of Pituitrin in Obstetrics, *Virginia M. Month.* **47**: 609 (March) 1921.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

Georgia: Atlanta, June 7-9; Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

Nevada: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

New York: Albany, Buffalo, New York and Syracuse, May 23-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

Washington November Meeting

Mr. William Melville, secretary, Washington Department of Licenses, reports that at the meeting held Nov. 18, 1921, 41 candidates were licensed by reciprocity. The following colleges were represented:

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado	(1906)	Idaho
Bennett College of Eclectic Med. and Surg.	(1907)	Illinois, N. Dakota
Chicago College of Medicine and Surgery	(1915)	Illinois
College of Physicians and Surgeons, Chicago	(1905)	Illinois
Hahnemann Medical College and Hosp. of Chicago	(1913)	Illinois
Harvey Medical College	(1905)	Illinois
Loyola University	(1918)	Illinois
Northwestern Univ. (1904) Idaho, (1908), (1918),	(1921)	Illinois
Northwestern University Woman's Medical School	(1897)	N. Dakota
Rush Medical College (1895) Illinois,	(1921)	Illinois, Kansas
Central College of Phys. and Surg., Indianapolis	(1904)	Indiana
Indiana University School of Medicine	(1909)	S. Dakota
College of Physicians and Surgeons, Keokuk	(1889)	Iowa
Drake University	(1912)	Iowa
Keokuk Medical College, College of Physicians and Surgeons (1899) Illinois, (1900) Wisconsin,	(1901)	Iowa
State University of Iowa College of Medicine	(1901)	Iowa
College of Physicians and Surgeons, Baltimore	(1897)	Montana
Tufts College Medical School	(1901)	Montana
University of Michigan Medical School	(1895)	California
University of Michigan Homeopathic Med. School	(1913)	Michigan
Minneapolis College of Physicians and Surgeons (1901), (1903) Minnesota,	(1906)	N. Dakota
St. Louis University School of Medicine	(1910)	Missouri
University Medical College of Kansas City	(1896)	Kansas
(1907),	(1917)	Missouri
Washington University	(1910)	Illinois
Hahnemann Medical College of Philadelphia	(1904)	Minnesota
Jefferson Medical College (1900) Pennsylvania,	(1908)	Idaho
University of Pennsylvania	(1920)	Penna.
Vanderbilt University	(1917)	Tennessee

North Dakota January Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 3-6, 1922. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Kentucky School of Medicine	(1906)	75
University of Pennsylvania	(1917)	75

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois	(1920)	Illinois
Kentucky School of Medicine	(1901	Indiana
University of Minnesota (1917),	(1919)	Minnesota
University of Nebraska	(1902)	Minnesota

Book Notices

Diseases of the Digestive Organs, with Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc.D., M.D., F.A.C.P., Professor of Gastroenterology and Dietetics in the Detroit College of Medicine and Surgery. Third edition. Cloth. Price, $10. Pp. 904, with 225 illustrations. Philadelphia: Lea & Febiger, 1921.

There is no field in which a concise and practical textbook would be more welcome than in gastro-enterology. In this book, however, too much space is devoted to anatomy, physiology and the fundamentals, which can be obtained in detail in any textbook. Why burden the reader with a host of tests and a description of intricate details, and then inform him that this or that test is of doubtful value? A proper balance is a long looked for desideratum. It would appear that, instead of allowing two pages for symptoms and diagnosis of carcinoma of the stomach, and three pages to the miostagmin reaction and the technic of the Abderhalden test, a better division would have been to allow more space to the clinical considerations. The result of roentgen-ray and laboratory examination of all the gastro-intestinal conditions is given in an early chapter of the book. This requires readers to refer to these chapters for the necessary data in their respective subjects. Several statements might be challenged; for example: the value of the Credé method of expelling the gastric contents into the duodenum as a therapeutic measure: the value of the Cammidge test in diagnosis of carcinoma of the pancreas, pain and tenderness on pressure in the vicinity of the twelfth dorsal and first and second lumbar vertebrae being significant of pancreatic disease; and, finally, the apparent ease with which the author says the diagnosis of pancreatic disease can be made. He fails to lay stress on the obtaining of a careful clinical history in the diagnosis of chronic colitis, and would seem to diagnose everything by the character of the stools. Chronic cholecystitis and the symptoms of stones in the gallbladder, aside from gallstone colic, are given scant consideration. Differential diagnosis might be given more attention. Many of the newer therapeutic measures are mentioned. The reproductions of roentgenograms are very good. There are many diet lists and prescriptions from the author's own experience and from other sources mentioned throughout the book. The underlying difficulty, however, is the failure to give and emphasize sufficiently the important outstanding features of the condition under consideration.

A Manual of Practical Anatomy. A Guide to Dissection of the Human Body. By Thomas Walmsley, Professor of Anatomy, Queen's University, Belfast. In three parts. Part II—The Thorax and Abdomen. Cloth. Price, $3.25. Pp. 233, with 82 illustrations. New York: Longmans, Green & Co., 1921.

This work is divided into three parts, published in three thin, and therefore handy, volumes of approximately 200 pages each. As a dissecting guide, it has the advantage of not being so detailed or so expensively illustrated as other books of the same character. The illustrations are simple line drawings and diagrams, but clearly executed and easily understood by the student. The arrangement of the text is, on the whole, admirable. The new terminology is more or less intermingled with the old, and used only in the Anglicized form. The book should serve as a helpful guide to the beginner.

Clinical Diagnosis. A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By Charles Phillips Emerson, A.B., M.D., Professor of Medicine, Indiana University School of Medicine. Fifth edition. Cloth. Price, $7.50. Pp. 726, with 156 illustrations. Philadelphia: J. B. Lippincott Company, 1921.

Four editions of this book were printed between 1906 and 1913. This edition, which appears after an interval of ten years, is practically a new work. It has involved a complete rewriting of the book and the addition of special sections on serology, bacteriology and chemistry of the blood and spinal fluid. This significant suggestion appears in the preface: "The author feels that the present separation of laboratory and ward is an evil which cannot be too strongly condemned. No matter how successful a man may be, he has no right to entrust his laboratory work entirely to others. . . . The one who takes the history of the patient and makes the physical examination is the one who can correctly interpret the laboratory findings." Dr. Emerson also emphasizes the possibility of considering the laboratory findings without relation to the patient. "The medical student should understand that the sum total of all laboratory activities is not and never can be internal medicine, and that he as artist must try to see in each specimen something of the patient himself and interpret it in terms, not of chemistry, physics or biology, but of the suffering person." Unlike other encyclopedic works on laboratory diagnosis, this book does not include all of the tests, tried and untried, which have been described in medical literature, but only those with which the author has had actual experience and which have known worth. The book is therefore well adapted for use by the general practitioner who does not care to attempt experimentation in his laboratory technic. There is an extensive and satisfactory index.

Lehrbuch der Urologie mit Einschluss der männlichen Sexualerkrankungen. Von Dr. Leopold Casper, Universitätsprofessor in Berlin. Third edition. Paper. Price, 200 marks. Pp. 608, with 225 illustrations. Berlin: Urban & Schwarzenberg, 1921.

The present edition of this textbook emphasizes more than the prior editions the characteristics of a forceful medical personality, with all the advantages and a few of the shortcomings that accrue when personal tenor permeates publication. In contradistinction to the ponderousness of many medical textbooks, the clear presentation of the subject will hold the interest of the reader without any weary reaction. The emphasis of the true clinical teacher is brought home by epigrammatic sentences, marshaling facts, such as: "It is not what the kidney is secreting, it is what it is not eliminating, that determines the efficiency of renal function." Could any statement more precisely outline the problems of renal functional diagnosis? As the author is more a teacher than a surgeon, the operative side of urology is treated in a rather cursory manner. The chapter on nephritis and nephrosis is rewritten in this edition according to the views developed by the recent work of internists and pathologists. It is to be regretted that in the paragraphs on functional renal diagnostics only the color tests, the phlorizin test and cryoscopy are discussed, while all the modern tests are neglected. Phlorizin and cryoscopy have been practically discarded by American urologists. That the retention of urea has nothing to do with the qualification of renal function is another statement that will encounter opposition in this country. The closing chapter, dealing with all the forms of impotence, may be ranked as an excellent contribution to this difficult subject.

I Have Reason to Believe. By Stephen Paget. Cloth. Price, $2. Pp. 148. New York: The Macmillan Company, 1921.

In this book Dr. Paget has collected a number of essays which, characteristically, are prefaced with the dedication: "These essays are not worth dedicating to anybody." They reveal, however, his usual brilliant style and quiet, understanding wit. The essay entitled "The Writing of a Life" should be compulsory reading for all biographers. The concluding essays on "Our Medical Correspondent" and "An Eminent Victorian" are of particular medical interest. In the former, the press comes in for unusual chastisement because of its manufacturing of medical news. Mr. Paget feels—as The Journal has preached for many years—that every first-class newspaper would do well to provide itself with a medical man, who should not only conduct a special department, but also advise on the publication of medical items in other departments and thus prevent the publishing of the fakery and fallacy characterizing much of the medical material usually printed. The "eminent Victorian" whose passing Mr. Paget bemoans is no other than our old friend Mrs. Grundy. Christian science, psychanalysis and other cults are made the objects of several rapier-like thrusts, and it is pleasing to see these toy-balloons deflated and to hear the hiss of the escaping gas.

Medicolegal

Information from Observation Held Privileged

(Fritcher v. Kelley et ux. (Idaho), 201 Pac. R. 1037)

The Supreme Court of Idaho, in affirming a judgment in favor of the plaintiff, says that he, as administrator of the estate of one Allen, deceased, had asked to have a deed which had been executed by Allen to the defendants set aside, on the ground that Allen did not at the time have mental capacity to execute the conveyance. On their appeal, the defendants complained of the refusal of the trial court to permit a physician to give testimony as to his opinion of the mental condition of the grantor shortly before the execution of the deed. They offered to prove that the physician had been called to treat the grantor for a cold, that the information which he acquired concerning the grantor's mental condition was based on his observation, and was not necessary to enable him to prescribe for the patient. The trial court sustained an objection on the ground that the information was based on confidential relations and communications. The Idaho statute provides that "a physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient." Past decisions of the Supreme Court of Idaho show an inclination to interpret liberally the words "information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient." In *Jones* v. *Caldwell,* 23 Idaho 467, 130 Pac. 995, a ruling of the trial court was upheld, sustaining an objection to a question asked a surgeon as to the condition of a certain part of the human body which had been removed; he having assisted in the operation but having made his examination of the part in question some time after it was removed. Strictly speaking, the physician's information based on the observation of this part of the body was not necessary to enable him to prescribe or act for the patient. And the supreme court concludes in the present case that the opinion of the physician as to the mental capacity of Mr. Allen, based on his observation of him at a time when he was treating him, was properly rejected by the trial court.

Court Finds Authority to Order Blood Test

(Hayt v. Brewster, Gordon & Co., Inc. (N. Y.), 191 N. Y. Supp. 176)

The Supreme Court of New York, Appellate Division, Fourth Department, reverses an order for the physical examination of the plaintiff in this personal injury case, because the order did not require a blood test. The court says that the defendant asked permission to draw a few drops of the plaintiff's blood, so that the examining physician, by an analysis of it, might be aided in qualifying himself to give an opinion as an expert at the trial. A physician, in an affidavit submitted by the defendant on the motion, which is granted, stated that it would be necessary to make a blood test to determine accurately the plaintiff's condition. It was not claimed by the plaintiff in the affidavits submitted on the motion that he was in such a condition of health that such treatment would be injurious to him. Neither was it claimed in such affidavits that there would generally be any danger involved in such act. It was argued, however, that there was so much danger involved in drawing a few drops of blood by a skilled physician that it should not be required, and that Section 873 of the New York Code of Civil Procedure, which provides for a physical examination, before trial, of the plaintiff in an action for personal injuries, was not broad enough to justify such an order. But this court thinks otherwise.

The legislature, in enacting said statute, and thereby changing the common law rule, must have intended that it should accomplish some useful purpose, promote the ends of justice, and be of some practical assistance in the discovery of the truth. If it is necessary to make a blood test to determine from what the plaintiff is suffering, a physical examination which omits the making of such blood test will be of no use whatever in establishing the truth of the fact at issue. Such a construction of the section, instead of promoting the administration of justice and the discovery of the truth, will have exactly the opposite effect. The common law rule in the state was abolished by the enactment in question for the very purpose of making that lawful which was theretofore unlawful, to permit a physical examination of a plaintiff where none was permitted before. Its purpose was to afford protection to defendants, to enable them to discover the truth in regard to injuries claimed to have received by plaintiffs, and thereby to promote justice. To give the section a narrow and strict interpretation, which unduly restricts its purpose, would be contrary to the uniform practice under the section, and contrary to the spirit of the statute. We all know from experience in the trial of cases that it is the common practice of physicians, in making examinations under an order, to examine the plaintiff before trial, to insert instruments into the plaintiff's body, to put pressure on the body with the hands, and to make various tests, all of which are as offensive to a person, and as much an infringement on his rights, as it would be to draw a few drops of blood. No one has ever raised the question that such examinations were not proper or justified.

It was urged, however, that there have been cases in which infection has been caused by a needle puncture, such as is required to draw blood sufficient for a blood test. That is undoubtedly true, and in those cases the reason for the infection has been said to be the fact that the needle was not properly sterilized, or that the skin had not been properly cleansed. But Section 873 provides that "such examination shall be had and made under such restrictions and directions as to the court or judge shall seem proper." The court or judge granting the order is given full power to direct the manner in which the examination shall be made, and, on the request of the plaintiff, may throw around the examination all known safeguards. The sample of blood should be taken by a physician selected by the plaintiff, if he so desires. It does not seem to this court that under such circumstances it can be seriously urged that there is such danger that court or judge is without jurisdiction to grant an order under Section 873 for a blood test.

Recognized Possibility of Birth of Children

(Burrell v. Jean et al. (Ind.), 132 N. E. R. 704)

The Appellate Court of Indiana, Division No. 2, affirms a judgment in favor of the defendants in this action brought by the plaintiff to quiet title to certain real estate in which she had been given a life estate by a will, which provided that after her death the property should go to her children, or to certain other persons, as the case might be. She was about 70 years of age when the case was tried in February, 1920; and, after remarking that there was no evidence that she had not had children born to her since the death of a named son in 1889, and that they were not living, the court says that the law recognizes the possibility of birth of issue in all adult women, and the single fact that terminates the possibility of issue is death. The possibility of the birth of further children to the plaintiff was to be determined only on her death.

Expert Witnesses Entitled to Statutory Fee Only

(Ulaski v. Morris & Co. (Neb.), 184 N. W. R. 946)

The Supreme Court of Nebraska holds that it was error in this case, under the workmen's compensation act, for the trial court to allow the plaintiff $50 for expert witness fees charged as costs. The court says that there is no provision in the law for the payment of expert witness fees. The expert witnesses are, therefore, allowed the usual and lawful witness fee, and no more. Wherefore, it is ordered that the court disallow the expert witness fees in the amount of $50, and that the expert witness recover only the usual lawful witness fees. One testifying as an expert on a subject requiring special knowledge and skill, in the absence of a special contract, is entitled only to the statutory fee.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

American Association for the Study of the Feebleminded, St. Louis, May 18-20. Dr. R. W. Baker, Laconia, N. H., Secretary.
American Association of Anesthetists, St. Louis, May 22-24. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Association of Industrial Physicians and Surgeons, St. Louis, May 22-23. Dr. William Alfred Sawyer, 343 State St., Rochester, N. Y., Secretary.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Proctologic Society, St. Louis, May 22. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society for Clinical Investigation, Washington, D. C., May 1. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia. Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Atlantic City, April 26-28. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Association for the Study of Internal Secretions, St. Louis, May 22. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California Medical Society of the State of, Yosemite, May 15-18. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
International Congress of Ophthalmology, Washington, D. C., April 25-May 3. Dr. Luther C. Peter. 1529 Spruce St., Philadelphia, Sec'y.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton. Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
Medical Library Association, St. Louis, May 22-23. Dr. John Ruhräh, 1211 Cathedral St., Baltimore, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Jefferson City, May 2-4. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
North Carolina, Medical Society of the State of. Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. R. D. Alway, 423 S. Lincoln St., Aberdeen, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-Ninth Annual Meeting, Held at Memphis, April 11-13, 1922

The President, Dr. William Britt Burns, Memphis, in the Chair

The Present Status of Pyloroplasty

Dr. W. M. McCabe, Nashville: Pyloroplasty con be used in all cases of ulcer of the stomach in which gastro-enterostomy is indicated, except in cases of cancer of the pylorus, or when it is impossible to mobilize the pylorus. It is preferable to gastro-enterostomy because it only slightly disturbs physiologic relation, and because it allows direct treatment of the ulcer. It is preferable to gastro-enterostomy in ulcer of the duodenum so situated that it can be removed in the performance of the operation. Gastro-enterostomy is to be preferred in ulcer which cannot be removed. I include here ulcers which are so situated that removal is possible, but not in the performance of pyloroplasty. It is the operation of choice in gastrojejunal ulcer following gastro-enterostomy in which gastro-enterostomy opening is detached. It can be used satisfactorily in pyloric stenosis, but gastro-enterostomy has given its best results in these cases.

Traumatic Brain Lesions

Dr. E. Dunbar Newell, Chattanooga: We have treated during the last five years fifty-four cases of serious brain injuries. The cases in which operation was not performed were usually those of linear fractures or no fractures, with intracranial pressure not high, and the patients either not unconscious or only moderately so. There were no focal symptoms of localized hemorrhage and no depressed fragments. There were forty-one patients operated on, with fourteen deaths, a mortality of 34 per cent. Eleven patients were not operated on, with three deaths. Two patients were relieved by spinal puncture and relieving intracranial pressure by drawing off cerebrospinal fluid. Including all severe cases of brain injuries, those in which operation was performed, and those in which operation was not performed, the mortality was 30 per cent. The mortality in serious basal fractures, with high intracranial pressure, in which operation is not performed during the stage of shock and is done before marked medullary compression occurs, can be reduced from the usual 50 per cent. to 80 per cent. mortality to a 20 per cent. mortality or lower. In depressed fracture of the vault an operation is always indicated unless the patient is in shock. When the patient is in shock, one never should operate. The patient will die if any operation is done to repair a fractured skull, to control hemorrhage from the brain or to relieve intracranial pressure, while the patient is still in a state of shock. A stereoscopic roentgenogram should be taken of every head injury in which the blow has been sufficient to cause a fracture of the skull or to render the patient unconscious. Fracture of the skull per se does not indicate that the patient has been seriously injured. With the symptom of lesion to the brain or its membranes present, the absence of a fracture does not alter in the least the treatment or prognosis. Because the roentgen ray does not reveal a fracture of the base, it does not mean that one does not exist. Basal fractures must not be considered hopeless cases, as 75 per cent. can be saved if they are watched carefully and intelligently treated.

The Great Value of Necropsies

Dr. B. T. Terry, Nashville: Necropsy does one of three things: 1. It confirms the clinical diagnosis, but adds features which were not diagnosticated with certainty clinically. 2. In addition to confirming the clinical diagnosis, the necropsy reveals very important lesions not even suspected clinically. 3. It makes the diagnosis when, during life, exact diagnosis was impossible.

Our Duty and Responsibility in the Face of the Abortion Evil

Dr. J. C. Ayres, Memphis: The statutes relative to criminal abortion should be amended so that it will be possible to convict. When the evidence is sufficient, we should aid the authorities in every way possible. Even when the evidence is not sufficient to convict in a court of law, we should, on general information, expel from organized medicine every man who is known to be an abortionist. When therapeutic abortion is necessary, the burden of the proof of its necessity should rest on the physician performing it. If done in a hospital, some member of the staff, either resident or visiting, should be in consultation in the case. The rule in regard to consultation should be strictly adhered to, not only when there is a question as to the necessity, but also when there is any doubt as to the diagnosis.

The Diagnosis of Extra-Uterine Pregnancy

Dr. J. A. Crisler, Memphis: After reviewing all the important authorities on the subject, I agree with Schumann in the conclusions that: 1. Previous general health and family history are of no diagnostic value. 2. Absolute sterility is not definitely associated with the occurrence of ectopic pregnancy. 3. Relative sterility, especially the one-child type, on the contrary, is a significant point, and should be regarded as moderately affirmative. 4. The passage of a considerable interval of time between the last intra-uterine pregnancy and the present suspected ectopic one is unimportant in diagnosis, and may be disregarded. 5. A history of preexisting pelvis disease is of great importance when obtainable, but the absence of such history should not be an influence against a positive diagnosis of ectopic fecundation. 6. Previous abdominal operations indubitably render the patient more liable to aberrant embedding of the fecund ovum.

Conditions most likely to be confounded with extra-uterine pregnancy are intra-uterine pregnancy with threatened abortion, hemorrhage from the tube or ovary not in relation to pregnancy, acute salpingitis, acute appendicitis, ovarian cyst with twisted pedicle, rupture of a gastric or duodenal ulcer, and ureteral or renal colic.

Acute Mechanical Intestinal Obstruction

Dr. Robert Caldwell, Nashville: The poison that is the cause of death in acute mechanical obstruction is a toxic proteose. This toxic proteose is found in the intestine above the point of obstruction. It is formed by the protein catabolism of the body tissues and excreted into the intestine. This excretory function of the intestine is probably a compensatory one. Treatment consists in supplying the tissues with large quantities of fluid, and relief of the obstruction, emptying the intestine above the point of obstruction in all cases except those in which there is a wide margin of safety as determined by the nonprotein nitrogen of the blood.

Treatment of Acute Intestinal Obstruction

Dr. L. I. Sheddan, Knoxville: An operation should be done in acute intestinal obstruction as early as possible. Plenty of fluids should be given before and after operation, by proctoclysis or by hypodermoclysis or by both. Stomach lavage should be resorted to as often as necessary to keep the stomach free from toxic matter. When in doubt as to the integrity of a strangulation loop of intestine, one should always resect. If the intestine is distended and paralyzed, a well placed enterostomy should be done.

Cancer of the Breast

Dr. Claude P. Fox, Sr., Greenville: After having tried different methods, I have been convinced of the superior merits of the technic as described by Rodman. Some of the advantages which I believe this method possesses over any other operation are that it more completely removes the tissues susceptible to cancer involvement. The skin can be evenly approximated without excessive tension. It does away with the necessity of skin grafting, and gives a more resilient covering for the wound; hence it lessens the scar tissue that so restricts the movement of the arm. It hastens the period of convalescence. It requires much less postoperative attention, and is far less liable to wound infection, thus reducing the liability to local recurrence. I have had no local recurrence in any case when I have used this technic, and all my patients have had practically unrestricted movement of the arm. All operations should begin at the axilla from above downward, and from without inward toward the breast, for the reason that by this method the lymphatics are blocked before the carcinomatous tissues are in any way handled; the vessels are tied at their origin, less blood is lost, and a cleaner dissection can be done.

Early Diagnosis of Syphilis

Dr. Marcus Haase, Memphis: The typical chancre appearing on the genitalia three or four weeks after exposure is an easy lesion to diagnose. However, not more than 40 per cent. of the primary lesions answer to the common description of a typical chancre, namely, a painless, indurated, eroded papule or nodule. Most frequently there is an associated infection, or the lesion has been traumatized often by a cauterant, and the resulting picture is entirely different from the classic hunterian sore. Most important of mixed infections is that of the Ducrey bacillus and spirochetes. Pure uncomplicated chancroids are rare, since 70 to 80 per cent. of all chancroids have an associated syphilitic infection. If the physician is a very careful man, he will take blood for a Wassermann test. Perhaps he will take two, a week apart, to be absolutely sure. Here, again, the true nature of the lesion may go on undiagnosed. Craig has given the Wassermann result in a number of cases examined from one to five weeks after the appearance of the chancre. At the end of one week, 27.6 per cent. were positive; two weeks, 50.8 per cent.; three weeks, 64.2 per cent.; four weeks, 73.1 per cent.; five weeks, 79.4 per cent. Although the Wassermann is the best single procedure in the diagnosis of syphilis, it is obvious from these figures that it cannot be depended on in early cases. The best possible proof of the syphilitic nature of a lesion is to find *Spirochaeta pallida*. The searching for these organisms in the dark field or by the India ink method is the most important procedure in making a diagnosis of primary syphilis. We may fail occasionally to find them, but in very early cases when the Wassermann is least liable to be positive, the organisms are most liable to be present. All lesions of the genitalia should be considered syphilitic until proved otherwise.

Abdominal Pregnancy at Term

Dr. H. L. Fancher, Chattanooga: When a pregnancy becomes abdominal, the fetus usually dies as a result of immediate hemorrhage. However, it may have sufficient placental attachment to go on to maturity, and then die as in the case I report. A peculiar feature is that the fetus will die at maturity, and a so-called spurious labor comes on in which there will be uterine hemorrhage with expulsion of decidual membranes. After the death of the fetus, its fluids, with that of the amnion, begin to be absorbed. If the patient is not operated on, one of three things is going to happen. First, all the fluids and soft parts will be absorbed, leaving the bones encysted in the free abdominal cavity, or later they will work their way into hollow viscera. Second, as the fluids are absorbed, calcium salts are deposited, forming a lithopedion. Third, infection takes place early and the mother dies of sepsis. It is the opinion of all recent writers that the placenta and membranes should be removed at the initial operation, if possible. There will be cases with adhesions so extensive and so vascular that the only recourse will be to leave all or a part of the placenta in situ and pack to control hemorrhage. In the case I report, it probably was of the tubo-ovarian type, as no part of the right tube and ovary could be isolated at the time of operation.

The Treatment of Fibroid Tumors

Dr. Charles N. Cowden, Nashville: From the experience of men who endorse the use of radium in the treatment of fibroids, in comparison with the definite results that follow hysterectomy, what are the conclusions to be drawn in respect to their individual merit? Should they be considered as adjuncts one to another, or are they rivals for supremacy in the treatment of benign growths? Is there a certain type best suited to one or to the other method? If so, what are the definite indications or contraindications to their use? Has the investigator in the use of radium become so expert that he can say with definiteness that here is a case that should be treated with radium, and this tumor, of such size and bulk, should have so much dosage at different times, and you get certain results as little morbidity as you may expect from a hysterectomy. Until this can be done, I think the place for radium in this field is very limited, if not questionable. The possibilities of radium for real harm have not been sufficiently exploited in the literature, because men shrink from reporting their bad results. It is the duty of men who are using radium to spread the propaganda of caution, and insist that only men of great experience in handling it should use it. I am convinced that radium and the roentgen ray have only a limited place in the treatment of fibroid tumors of the uterus.

Gastroptosis

Drs. Seale Harris and J. P. Chapman, Birmingham, Ala.: In our roentgen-ray studies on gastroptosis, the most important findings have been the marked degree of mobility of the stomach, which is affected by the position of the patient, by the weight of the stomach contents, and by the tension or relaxation of the abdominal muscles. We have endeavored to determine the normal position of the stomach in a study of 500 cases, and have come to the conclusion that in the supine position the textbook teachings are correct; but in the upright position there is a wide normal variation, depending on the anatomic makeup of various types of individuals. We have also come to the conclusions that, so far as gastric digestion is concerned, it matters very little whether a stomach is in the high position, or in the brim of the pelvis, so long as its muscular tonus is good and the intra-abdominal pressure is normal.

Gastroptosis is a condition, not a disease. It is so frequently found that it can hardly be called an anomaly. It should be termed a physical characteristic.

In a series of 500 patients studied during the last eighteen months, roentgen-ray examinations in the standing position showed in 278 (55.6 per cent.) that the lower border of the stomach was more than 2 inches (5 cm.) below the umbilicus. These were all adult white patients, most of them native Alabamians, although a few were from Mississippi, Tennessee, Georgia and Florida. Gastroptosis is less frequent in males than in females. In our series of 500 patients, 271 were males and 229 females; of the 278 who had gastroptosis, 121 were males and 157 females. In Smithies' series of 300 males, only thirty-six had gastroptosis, while in 300 females, 165 had gastroptosis. The visceroptotic individual should be taught the essentials of diet and nutrition, and that if he would be comfortable he must eat a full diet, with a liberal quantity of butter, cream and other fats; plenty of the starchy and green vegetables and the cereals, and 1 or 2 quarts (liters) of milk a day. Rest in bed for a period of from four to six weeks is necessary in many cases. The operation of fixation of the stomach for gastroptosis is mentioned only to be condemned as irrational, meddlesome surgery. The stomach is a very mobile organ, and no part of it should ever be fixed, as is the effect in all the various types of gastroptosis.

The Diet of the Child Aged from Nine to Twenty-Four Months

Dr. Oliver W. Hill, Knoxville: The food for an infant must have the three known vitamins: fat soluble A, water soluble B, and antiscorbutic vitamins. It must be present in sufficient amounts. We must have sufficient amounts of fats, carbohydrates and proteins, mineral matter and water to meet the child's caloric requirements; also that digestibility and palatability be assured. When shall we start giving the child food other than the mother's milk? We have found that it is better to start small amounts of cereal decoctions; zwieback, toast, fruits, greens and extracts from vegetables in suitable and palatable forms at about 9 months, gradually increasing until we have the child on a semisolid diet. Each child is a law unto itself and requires individual study and consideration. When the child is constipated, fruit juice may be resorted to very early, at 3 months or younger. It is a good plan to start with 1 teaspoonful (1 fluidram) of cereal each day, changing this formula frequently, gradually accustoming the child to spoon feeding. When one has established a tolerance for the cereals, then one may begin vegetables, gradually enlarging the diet, exercising care not to overfeed. One can start this procedure much earlier if circumstances demand, that is, if the child is not gaining satisfactorily at 6 months, or is constipated, always keeping in mind the surroundings, the season of the year, etc. I dislike to make any changes in the diet of a child during the hot months if it can be avoided.

Standardization of Infant Feeding

Dr. Owen H. Wilson, Nashville: The simple sensible standards for feeding normal babies are these: Feed the best cow's milk available. Always boil milk at least three minutes, especially (1) in starting a formula; (2) in hot weather, and (3) in every other case you can conveniently do so. Always give orange juice to prevent scurvy. Correct constipation with magnesium or liquid petrolatum. Feed one or two ounces more than months of age up to 8 ounces as a maximum, every three hours, or four hours, if you can. Omit feedings after 10 p. m. as early as possible—certainly, by the fourth month; better still, never begin them. Lime water is necessary only in some vomiting babies. For the first three months give half milk and half water with two leveled off tablespoonfuls of sucrose, added to the twenty-four-hour quantity. From 3 to 6 months, two-thirds milk, one-third water, with 3 level tablespoonfuls of sucrose. From 6 to 8 months, three-fourths milk, one-fourth water, with 3 level tablespoonfuls of sucrose. After 8 months, whole milk may be given, but three fourths is preferable in hot weather.

Diagnosis and Management of Pyloric Stenosis in Infancy

Dr. Eugene Rosamond, Memphis: By the history alone we are usually able to make a tentative diagnosis of pyloric stenosis. The normal baby, a few weeks of progress, the sudden vomiting, the continuance of this symptom until the child is weaned, and then the gamut of the proprietary foods—still with vomiting, emaciation, hunger and constipation. As to the age incidence, Wall has said, "The second half of the first month of life, there is no disease in the category of human ills which possesses an age period as exact and as suggestive as pyloric stenosis." As to gastric peristalsis, these waves of peristalsis may be due to causes other than hypertrophy causing a pyloric block, but they are for all practical purposes pathognomonic of this condition. Absence of tumor does not mean anything; its presence means hypertrophy. Too much importance is attached to gastric retention as a symptom. The roentgen ray gives valuable information. The duodenal catheter is a most complicated way to reach a conclusion. Two other conditions that may be confounded with stenosis of the pylorus are the hypertonic infant and pylorospasm. Thirteen years ago I reported to the Arkansas State Medical Association five cases of pyloric stenosis that were treated by means of somach washings and fractional feeding. Two of these patients died. This experience, with the best dietetic treatment then recommended, convinced me that all patients should be operated on at the earliest possible moment. This I recommended in the next eight cases coming under my care, and of this number six patients recovered, one died after operation, and one died fifteen minutes before operation.

Reduction in Typhoid Rate.—Steadily decreasing mortality from typhoid fever is reported in the mortality figures issued by the Bureau of Census. A reduction in the registration states of the United States from 13.3 per cent. per hundred thousand population in 1916 to 7 per cent. per hundred thousand population in 1920 comprise the official statistics. Massachusetts and Wisconsin had the lowest rates in 1920, recording a percentage of 2.5, while the highest appears in North Carolina, the percentage being 22.4. Of the eleven states showing rates by color, the lowest rate for the white population was 3.6 per cent. and the lowest for the colored was 4.6 per cent. both for New York state, while the highest rate for the white population was 19.1 per cent. in Kentucky and that for the colored was 30.2 per cent. for the same state. Of the thirty-three states reported upon, only nine show an increase in typhoid fever mortality in 1920 in comparison with 1919. They are Colorado, Connecticut, Kansas, Maine, Michigan, New Hampshire, New Jersey, Vermont and Washington.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, 1922, **23**, No. 4

*Indications for Removal of Spleen in Infants and Children. F. H. Bartlett, New York.—p. 289.

*Bacteriology of Normal Infant's Urine. H. F. Helmholz and F. Millikin, Rochester, Minn.—p. 309.

*Value of Cutaneous Sensitization Tests Employed in Eczema and Papular Urticaria of Childhood. D. M. Sidlick and F. C. Knowles, Philadelphia.—p. 316.

Studies of Infant Feeding, XVII. Bacterio-Chemical Study of Acid Stools Excreted by Breast-Fed and Bottle-Fed Infants. A. W. Bosworth, H. K. Wilder, M. E. Blanchard, E. W. Brown and M. F. McCann, Boston.—p. 323.

Splenectomy in Children.—A summary of splenectomies done by various operators on children under 14 years of age is presented by Bartlett. It includes five cases of von Jaksch's anemia; twenty cases of splenic anemia (Banti's disease); one case of tuberculosis of the spleen; one case of septic splenomegaly; fifteen cases of hemolytic jaundice (type not indicated); four cases of Gaucher's disease and five unclassified cases. Three personal cases are reported, two of Banti's disease and one of Gaucher's diseases. Good results are reported and splenectomy is urged in these cases.

Bacteriology of Normal Infants' Urine.—Helmholz and Millikin found the urine of seventy infants sterile on culture in from one third to one half of the experiments. *Streptococcus lacticus* was only exceptionally found in the urine. It is stated that the chances of contamination are so great that the presence of organisms in the urine does not prove, without further control, that they have come from the kidney.

Cutaneous Sensitization Tests in Eczema and Urticaria.—Twenty-three infants and children with eczema were tested by Sidlick and Knowles. Eight, or 35 per cent., gave negative reactions. Fifteen had one or more positive reactions. Six of the fifteen were clinically cured; three showed marked improvement; six were improved. Twelve children with papular urticaria were tested. Three were negative as far as reactions were concerned. Nine, or 75 per cent., reacted to one or more proteins. Three of the nine were clinically cured; four were markedly improved. Of the two remaining children, one reacted positively to strawberry, orange and banana; the other to potatoes and tomatoes. Both failed to improve on a restricted diet. The authors state that by correcting the gastro-intestinal abnormalities, an increase in the number of clinical cures is certain of attainment.

American Journal of Hygiene, Baltimore

March, 1922, **2**, No. 2

Studies on Experimental Rickets. XVII. Effects of Diets Deficient in Calcium and in Fat Soluble A in Modifying Histologic Structure of Bones. E. V. McCollum, N. Simmons and M. Kinney, P. G. Shipley and E. A. Park, Baltimore.—p. 97.

*Investigations on Control of Hookworm Disease. VI. Effect of Hookworm Control Measures on Soil Pollution and Infestation in a Sugar Estate. W. W. Cort and G. C. Payne, Baltimore.—p. 107.

*Id. VII. Epidemiologic Study of Hookworm Disease in a Cacao Estate. W. W. Cort and G. C. Payne, Baltimore.—p. 149.

*Id. VIII. Migration of Hookworm Larvae in Soils. D. L. Augustine, Baltimore.—p. 172.

*Id. IX. Position of Infective Hookworm Larvae in Soil. D. L. Augustine, Baltimore.—p. 172.

*Id. X. Length of Life of Infective Hookworm Larvae in Soils. D. L. Augustine, Baltimore.—p. 177.

Human Intestinal Ameba, Iodameba Williamsi, and Its Cysts (Iodin Cysts). W. H. Taliferro and E. R. Becker, Baltimore.—p. 188.

Relation of Blood Platelets to In Vivo Agglutination of Bacteria and Their Disappearance from Blood Stream. C. G. Bull and C. M. McKee, Baltimore.—p. 208.

Control of Hookworm Disease.—An intensive epidemiologic study was made by Cort and Payne of an area with a high incidence of hookworm disease on a sugar estate in Trinidad, British West Indies, to determine the exact sources of human infestation and to learn the effect on human infestation, soil pollution and soil infestation of a control campaign. Of the 142 people, both East Indians and negroes, examined from the area chosen for study, 117 were found to be infested with hookworms. A series of three treatments greatly decreased both the number of positives and the total mass infestation of these people. Soil pollution was widespread and very gross in this area, being especially concentrated at certain easily accessible places in the cane field, to the west of the barracks, where the people lived. Surveys of the pollution in the cane field showed a great reduction after the building of an adequate number of latrines and the carrying on of an educational campaign. Examinations for infective hookworm larvae of soil samples indicate that hard packed clay-loam soil on which there is no vegetation, even if moisture is present, does not offer conditions favorable for the development of hookworm larvae. The localized character of soil infestation, especially in the cane field, showed that there was little migration of infective hookworm larvae from the places of development, although evidence is presented that they may be carried considerable distances by water. The analysis of the habits of the people, in relation to the distribution of soil infestation, suggested that most of the heavy infestation of the people of his area was due to the habit which many of them had of visiting certain places in the cane field for the purpose of defecation. After the reduction of soil pollution in the cane field and the treatment of the people of the area, series of samples taken at intervals showed a rapid dying out of the infective hookworm larvae from this area, so that in about six weeks soil infestation was practically eliminated.

Hookworm Disease on Cacao Estate.—Examination of the people living in three houses on a cacao estate showed a heavy infestation with hookworms. Soil pollution in this area was almost entirely restricted to definite spots—"natural latrines" in the cacoa grove near the barracks. The examination of soil samples showed very little soil infestation anywhere in the area, except at the "natural latrines" in the cacao, and the conclusion can be drawn that almost all the human infestation must have come from the habit of polluting the soil of the cacao. Even in the "natural latrines" the findings were somewhat irregular, indicating the conditions were not always favorable for the development of hookworm larvae, and that they did not migrate from the place of development. Examinations of the soil of the intensely polluted spots in the cacao, six weeks after three routine treatments had been given to the people, showed a very marked reduction of soil infestation, indicating that in this situation the life of the infective hookworm larvae is short.

Migration of Hookworm Larvae in Soils.—Experiments carried on by Augustine in Trinidad, British West Indies, from May to September, 1922, showed that infective hookworm larvae placed on moist soils do not migrate in periods of from fifteen hours to forty-two days. Experiments show that hookworm larvae may be carried out from centers of soil infestation by surface water, and that they can establish themselves in the new locations when the water recedes. Hookworm larvae were not found to migrate to favorable situations when their original environments become unfavorable. Soil scraped from the shoes of men passing through infested area was found to contain hookworm larvae. It is possible that paths leading to such areas, as well as the immediate suroundings of dwellings, become centers of infestation by the dropping of such soil. During the time the larvae remained in the soil there occurred a reduction in their numbers, which increased with the number of days the experiment lasted.

Position of Infective Hookworm Larvae in Soil.—Infective hookworm larvae under optimum conditions of moisture and temperature were found to remain on and within the upper surface of the soil. They creep up pieces of wood, decaying vegetation and other objects only as far as the film of moisture extends. Hookworm larvae were not found within the drops of water collected in the axils of the leaves of green plants nor upon the leaves themselves. At centers of soil infestation, where the surface is covered with leaves or twigs, the infective hookworm larvae were found extended from the leaves or twigs when moist, but in the soil beneath when dry.

Length of Life of Infective Hookworm Larvae in Soil.—Laboratory experiments carried on in Trinidad, British West Indies, from May to September, 1921, show that a rapid reduction in the number of hookworm larvae occurs in soils of various types, and that the extent of their life is limited to about six weeks. Environmental conditions, such a tropical temperatures which tend to increase the activity of the mature hookworm larvae, will shorten their lives by the more rapid using up of the stored food material.

American Journal of Obstetrics and Gynecology, St. Louis

March, 1922, 3, No. 3

- *Histogenesis of Ovarian Tumors. S. H. Geist, New York.—p. 231.
- *Action of Emetin Hydrochlorid on Uterus. P. Martin, Boston.—p. 241.
- Carcinoma of Uterus. C. L. Bonifield, Cincinnati.—p. 250.
- Some Phases in Evolution of Diagnosis and Treatment of Cancer of Cervix. R. E. Skeel, Los Angeles.—p. 252.
- Valuable Methods Used to Extend Operability in Advanced Cancer of Cervix. G. V. Brown, Detroit.—p. 263.
- *Control of Mortality of Abdominal Operations for Cancer. G. W. Crile, Cleveland.—p. 272.
- New Trend in Gynecological Therapy. G. Gellhorn, St. Louis.—p. 275.
- Hypertrophic Ulcerative Form of Chronic Vulvitis (Elephantiasis, Esthiomene, Syphiloma). F. J. Taussig, St. Louis.—p. 281.
- *Atresia and Stricture of Vagina. J. E. King, Buffalo, N. Y.—p. 290.
- Nitrous Oxid and Oxygen Continuous Analgesia and Anesthesia with Rebreathing in Obstetrics. Technic of Administration and Summary of Results.—p. 296.
- Indications and Contraindications for Use of Pituitary Extract in Obstetrics. R. S. Cron, Ann Arbor, Mich.—p. 300.
- Case of B. Welchii Blood Stream Infection of Uterine Origin. H. B. Matthews, Brooklyn.—p. 307.

Histogenesis of Ovarian Tumors.—In the ovaries of a woman, 52 years of age, were found on the one side a typical adenocarcinoma and on the other a process involving the greater portion of a somewhat enlarged ovary that also resembled a new growth. It was composed of masses of cells varying in number, either isolated or in large branching strands. The cells in these solid masses resembled those of the granulosa layer of the follicle. In these masses Geist found cysts of varying sizes lined by cells of a cuboidal, columnar or the high cylindrical type as seen in the pseudomucinous type of ovarian cyst. Often in these cysts were found oval granular bodies which on superficial examination might be taken for degenerated ova but which were undoubtedly degenerated tumor cells or secretion masses. The origin of this process is the point of interest. It seems to be independent of the tumor of the other side, first as it bears no histologic resemblance to it, and second as it has none of the distinguishing criteria of a malignant tumor. The stroma resembles that of the unchanged ovary and is a predominant part of the process. The stroma and cells always maintain a definite relationship and at no point is there a proliferative or invasive tendency or an inflammatory infiltration. Mitosis was not found.

Action of Emetin on Uterus.—The most important finding in Martin's work was that the action of emetin on the uterus differed in vitro and in vivo. In vitro emetin lessens the activity of the pregnant and the nonpregnant uterus (dogs, rats, rabbits). It causes a decrease in tone and amplitude although increasing the rate of contractions. In vivo emetin causes an increase in the tone of the pregnant as well as the nonpregnant uterus (dogs and rabbits).

Control of Mortality of Abdominal Operations.—Crile reports the methods and management of operations on that group of patients who constitute a large portion of the group of handicapped cases whose successful treatment taxes to the utmost the resources of the surgeon, namely, abdominal operations for cancer. The two outstanding principles described were developed as the result of experience in the war. These two principles are: (1) protection of the patient in advance of the emergency; (2) control of infection (*a*) by the separation of contaminated surfaces from each other and (*b*) by prevent of the pooling of wound secretion.

Atresia of Vagina.—Three cases of acquired vaginal atresia as a result of infantile vaginitis are reported by King. In one case, a young woman, aged 19, the vagina was closed an inch and a half from the hymen by the firm union of the vaginal walls. The cause of this atresia was an infantile gonorrhea. The second patient was 26 years old. At operation extensive vaginal adhesions were found, obliterating the vaginal tube almost completely. No history could be obtained here of any discharge during childhood. The third case occurred in a young woman aged 23. The vagina was closed an inch and a half beyond the introitus. At operation, after dividing the lower union, a small vaginal cavity was encountered, and above this the vaginal walls were found closely adherent about the entire cervix and united in front of it. This patient had had a profuse discharge that persisted for many months.

American Journal of Ophthalmology, Chicago

March, 1922, 5, No. 3

- Prechiasmal Intracranial Tumors of Optic Nerves. W. E. Dandy, Baltimore.—p. 169.
- Target Practice with Hering's Double Eye. M. Landolt, Paris, France.—p. 189.
- Recurrent Hemorrhages into Retina and Vitreous of Young Persons. W. C. Finnoff, Denver, Colo.—p. 195.
- Congenital Anterior Capsular Cataract. L. D. Brose, Evansville, Ind.—p. 202.
- Apparent Pituitary Tumor with Restoration of Vision. W. A. Cassidy and S. R. Gifford, Omaha, Neb.—p. 206.
- Recurring Myxosarcoma of Orbit. J. H. Buckley, Fort Smith, Ark.—p. 207.
- Chart for Testing Vision of Children and Adults—Literate and Illiterate. G. A. Sulzer, Columbus, Ohio.—p. 208.
- One Advantage of Single Vision. E. J. Brown, Minneapolis.—p. 208.
- Transplantation of Entire Vertical Recti for Abducens Palsy. R. O'Connor, San Francisco.—p. 210.

American Journal of Roentgenology, New York

February, 1922, 9, No. 2

- *High Voltage Roentgen-Ray Work. W. D. Coolidge and W. K. Kearsley, Jr., Schenectady, N. Y.—p. 77.
- *Ultraviolet Ray in Treatment of Roentgen-Ray Telangiectasis. H. H. Hazen, Washington, D. C.—p. 101.
- *Behavior of Stomach in Ulcer and Cancer of Duodenum Below Bulb. A. W. Crane, Kalamazoo, Mich.—p. 102.
- Action of Radium and Roentgen-Rays on Blood and Blood Forming Organs. I. Levin, New York.—p. 112.
- Treatment of Glandular Metastases of Carcinoma. R. H. Boggs, Pittsburgh.—p. 117.

High Voltage Roentgen Ray.—Coolidge and Kearsley describe a roentgen-ray tube which has served for experimental work up to 300,000 volts (max.); an experimental interrupterless machine which has operated satisfactorily, even in humid summer weather, at voltages up to 300,000, and a constant potential continuous current machine, for voltages up to 200,000. As to dosage: they state that for the medical application, it looks much safer to judge of roentgen-ray intensity and quality, from sphere gap and milliamperemeter measurements of the electrical energy put into the tube rather than from direct measurements made with an ionization chamber. At 200,000 volts (max.), with as much as 0.2 mm. of copper filter, different "high voltage" tubes differ but little in output, the average deviation from the mean in a series of twenty tubes being only 1.25 per cent. At 127,000 volts (max.), with as much as 3 mm. of aluminum filter, different "Universal" type tubes differ but little in output, the average deviation from the mean in a series of seventeen tubes being about 3 per cent. Where no filter is used, tubes differ markedly in output, owing to differences in bulb thickness. For the therapeutic application, the effect of tungsten deposit on the bulb can apparently be neglected. Curves are given showing the distribution of roentgen-ray intensity in different directions around the focal spot, at voltages of 127,000 and 200,000. The distribution curves for a badly pitted target are also given.

Ultraviolet Ray in Treatment of Roentgen-Ray Telangiectases.—Hazen has used the Kromayer lamp in eight cases. Three were comparatively small telangiectases due to radium placques, two were large areas covering the whole of the thyroid and thymus areas, and the remainer were mild scattered lesions resulting from one erythema dose in acne. With an active lamp, using a quartz compression lens, Hazen found it necessary to give from fifteen to twenty minutes to each area. In no instance have more than two treatments been necessary to obliterate the vessels in the areas so treated. The results are a complete disappearance of the dilated blood vessels, but naturally the atrophy of the skin remains unchanged and usually the result in apearance is that of a small, slightly whitened scar.

Behavior of Stomach in Ulcer and Cancer of Duodenum Below Bulb.—A case of cancer of the duodenum and one of ulcer of the duodenum below the bulb are cited by Crane. In both cases the chief complaints were epigastric pain and vomiting. In the first case (cancer) the symptoms were recent—a matter of weeks; in the second case (ulcer) the symptoms were chronic, extending over years. In the first case there was epigastric pain without tenderness, in the second the seat of the pigastric pain was exquisitely tender and the recti rigid. In the cancer case there was gastric stasis due to pylorospasm and duodenal obstruction. In the ulcer case the essential points in the roentgen-ray examination were the active gastric peristalsis, the patulous pylorus, the rapid expulsion of stomach contents, the dilatation of the first two thirds of the duodenum with a filling of the ampulla of Vater, the constriction of the duodenum so as to form a partial obstruction and the coincidence of this constriction with the abdominal pain on pressure. Unless these cases are exceptional, it is probable that very persistent gastric retention is the rule in duodenal carcinoma below the bulb and that rapid expulsion of stomach contents is the rule in duodenal ulcer below the bulb. Duodenal ulcer would thus run true to type whether in the bulb or below, with, of course, the usual gastric residue in cases of sufficient obstruction or pylorospasm. But the behavior of the stomach in cancer of the duodenum seems in marked contrast to its behavior in cancer of the stomach where rapid emptying is the rule with a gaping pylorus and at the same time feeble peristalsis, except in the presence of a sufficient organic obstruction. In view of these facts, prolonged gastric retention without signs of gastric, pyloric or bulbar involvement should arouse suspicion of cancer of the duodenum. Also the rapid expulsion of stomach contents without achylia and without bulbar changes should arouse suspicion of ulcer of the duodenum below the bulb.

Annals of Surgery, Philadelphia

March, 1922, **75**, No. 3

*Resection of Lung for Suppurative Infections; Report of Thirty-One Cases. H. Lilienthal, New York.—p. 257.
*Pathology of Lung Suppuration. P. W. Aschner, New York.—p. 321.
Aberrant Adenoid Cystic Epitheliomas of Salivary Gland Type. F. M. Johnson, New York.—p. 331.
*Diaphragmatic Hernia. D. L. Borden, Washington, D. C.—p. 337.
Hepaticoduodenostomy for Injury of Bile Ducts During Cholecystectomy. J. D. McEachern, Winnipeg, Can.—p. 344.
*Acute Perforated Ulcer of Stomach or Duodenum. G. D. Stewart and W. H. Barber, New York.—p. 349.
*Blind End Circular Suture of Intestine; Closed Ends Abutted and Double Diaphragm Punctured with Knife Introduced per Rectum. W. S. Halsted, Baltimore.—p. 356.
*Potential Malignancy in Exstrophy of Bladder. A. J. Scholl, Rochester, Minn.—p. 365.
Intermittent Hydronephrosis with Gastroenterologic Symptoms. A. McGlannan, Baltimore.—p. 372.

Resection of Lung for Suppurative Infections.—Lilienthal's experience has shown that chronic pulmonary suppurations, wholly or partially of the bronchiectatic type, are rarely curable without the extirpation of the pathologic focus. The commonest cause of the disease is infection due to the aspiration of infected material during tonsillectomy. The surgical removal of a single pulmonary lobe for chronic pus infection has a mortality of about 42 per cent. The danger is much greater when more than one lobe is infected or in the presence of other complications. Palliative operations may be followed by improvement, rarely by apparent cures. Radical operation should not be undertaken short of several months after the onset unless the disease is obviously spreading. The proper type of operation should be determined only on full exposure by thoracotomy. Abstracts of the histories of thirty-one patients are given.

Pathology of Lung Suppurations.—Lung suppurations are devided by Aschner into: (1) bronchiectasis, a general disease of the bronchi in one or more lobes; (2) bronchiectatic abscess, a localized suppurative process in the course of a bronchus, and thus far observed only in posttonsillectomy cases; (3) suppurative pneumonitis, a diffuse purulent process; (4) extrabronchial abscess, a localized purulent process.

Diaphragmatic Hernia Simulates Appendicitis.—Attacks of severe and sudden pain in the lower abdomen accompanied with nausea and vomiting were the chief symptoms in Borden's case for six years when a diagnosis of acute appendicitis was made and an operation performed. A large amount of peritoneal fluid was present. Exploration demonstrated a ptosis of both the liver and the stomach. An area 3 inches in diameter on the anterior surface of the liver, was whitish and studded with what appeared to be tubercular nodules. This, with the presence of an abnormally large amount of peritoneal fluid, led to a diagnosis of tuberculous peritonitis. All efforts to find the appendix, cecum, ascending or transverse colon failed. The patient made an uneventful convalescence. Soon afterward a roentgen-ray examination was made to determine the position of the appendix. It was then discovered that most of the large intestine and a large part of the small intestine passer up through the left dome of the diaphragm, filling the left chest and displacing the heart to the right. The left lung was almost completely compressed up under the clavicle. At the second operation a hernia opening in the left dome of the diaphragm, 3 inches in diameter, was observed. The intestines were dragged down and out of the chest. The pillars of the hernial opening were then sutured together with interrupted catgut. Complete recovery ensued.

Surgical Treatment of Perforated Gastric Ulcer.—Twenty-four cases of acute perforated ulcers of the stomach and duodenum are reported by Stewart and Barber. The operative procedure in each instance was inversion and drainage with or without plication and omental grafting. Two patients died. In one case the rupture had taken place two days before operation, in the other three days.

New Method of Intestinal Suture.—The method of intestinal approximation described by Halsted is applicable to cases destined for excision of the large intestine in which a colostomy had previously been provided. The title of this paper is a summary of the steps of the operation. For further details, the original paper must be consulted.

Malignancy in Exstrophy of Bladder.—In nine cases of exstrophied bladder, in which material for histologic study was available, two were definitely malignant, and two showed atypical cellular formation varying markedly from the normal. In the reported cases of malignancy of exstrophied bladders, which are relatively frequent, the growths were adenocarcinomas. This glandular malignancy, Scholl states, is the type that would develop from irritation and hyperplasia of glandular structures.

Georgia Medical Association Journal, Atlanta

March, 1922, **11**, No. 3

Lymphatics in Cancer. J. L. Campbell, Atlanta.—p. 85.
Classification and Treatment of Hemorrhoids. M. C. Pruitt, Atlanta.—p. 88.
Treatment of Hemorrhoids. R. M. Harbin, Rome.—p. 91.
Aneurysm of Descending Arch of Aorta. W. C. Pumpelly, Macon.—p. 94.
Whither Are We Drifting as Profession? Some Facts Worthy Our Consideration. B. C. Keister, Americus.—p. 96.
Why Each Physician Should Be Member of His County Society. J. O. Elrod, Forsyth.—p. 101.
Termination of So-Called Neuroses. N. P. Walker, Milledgeville.—p. 103.
Need of Physician. E. C. Davis, Atlanta.—p. 106.
Hysterical Amblyopia. A. S. M. Coleman, Douglas.—p. 109.
Transplantation Flap Repair of Lower Eyelid, Following Removal of Epithelioma. B. H. Minchew, Waycross.—p. 110.

Journal of Bacteriology, Baltimore

March, 1922, **7**, No. 2

Gram Stain: Description of New Method. V. Burke, San Francisco.—p. 159.
Disinfection Studies: Effects of Temperature and Hydrogen Ion Concentration on Viability of Bacillus Coli and Bacillus Typhosus in Water. B. Cohen, Washington, D. C.—p. 183.
Micro-Organism Concerned in Oxidation of Sulphur in Soil. I. Introductory. S. A. Waksman.—p. 231.
Id. II. Thiobacillus Thio-oxidans, New Sulphur Oxidizing Organism Isolated from Soil. S. A. Waksman and J. S. Joffe.—p. 239.

Production of Pink Sauerkraut by Yeasts. E. B. Fred and W. H. Peterson, Madison, Wis.—p. 257.
Biology of Lactic Acid Bacteria. C. Gorini, Milan, Italy.—p. 271.
Method for Cultivation of Anaerobes. L. D. Bushnell.—p. 277.
Influence of Vacuum on Growth of Some Aerobic Spore Bearing Bacteria. L. D. Bushnell.—p. 283.
Substitution of Brom-Thymol Blue for Litmus in Routine Laboratory Work. H. R. Baker.—p. 301.
Use of Domestic Methylene Blue in Staining Milk by Breed Method. W. A. Wall and A. H. Robertson.—p. 307.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1922, **7**, No. 6

*Experimental Investigation of Pharmacologic Action of Quinidin. D. E. Jackson, A. Friedlander and J. V. Lawrence, Cincinnati.—p. 311.
*Beriberi. T. G. Ni, China.—p. 340.
Effects of Thyroid, Thyroxin and Other Iodin Compounds on Acetonitrile Tests. M. Miura, Tokyo, Japan.—p. 349.
*Adaptation of Folin and Hu Blood Sugar Method Applicable to Small Amounts of Blood. E. J. Baumann and R. L. Isaacson, New York.—p. 357.
*Sterilization of Surgical Instruments. E. S. Sanderson, New Haven. Conn.—p. 360.
Micromodification of Method of Benedict for Quantitative Determination of Reducing Sugar in Urine. M. Smith, Boston.—p. 364.

Pharmacodynamics of Quinidin.—A large number of experiments were made by Jackson and his associates in the endeavor to determine the action of quinidin on the heart. They felt that there was nothing unique in the action of quinidin on auricular fibrillation and that, perhaps, a large number of drugs which exercise a general depressant action on the cardiac muscle would, in all probability, act in a very similar manner. It appeared to be simply a question of selecting a substance of sufficiently low general toxicity, and one which would be eliminated from the blood but slowly in order that a prolonged, mild depression of the auricular tissue might be produced. The drug undoubtedly acts on both ventricles and auricles. It tends to counteract the development of fibrillation of the ventricle after such drugs as aconitin or digitoxin. One of the earliest actions on the normal heart consists of a slight dilatation of the ventricle as shown by the cardiometer. The checking of fibrillation of the ventricles in perfused hearts by the temporary addition of small quantities of potassium chlorid solution to the perfusion fluid indicates also that quinidin does not possess a unique action in this regard. The authors surmise that in due course it will be found that quinidin acts on the musculature of the peripheral vessels and perhaps, even on the skeletal muscles, in a manner quite similar to that in which it acts on the heart muscle. Such an action on the coronary vessels would probably be of importance in some, and perhaps in many cases. And the decrease in the power of epinephrin when injected intravenously, to raise the general blood after quinidin may indicate an action on the sympathetic innervation, although at present the possibility that this may be due to an action on the capillaries cannot be ruled out. Slight changes in the pulmonary blood pressure by the action on the pulmonary arterioles or capillaries might also be of importance in many cases. Too hasty formation of conclusions regarding the action of quinidin is deprecated.

Cause of Beriberi.—The various theories as to the causation of beriberi, such as disturbance of vitamin metabolism, infection theory, nitrogen starvation, phosphorus starvation, are reviewed by Ni. He favors the theory which regards deficiency in vitamin and in general nutrition as the most likely one.

Blood Sugar Test.—Baumann and Isaacson have developed a method of testing for blood sugar using Folin and Hu's method for an amount of blood that could be obtained by pricking the finger, and securing 0.4 c.c. of blood. The adaptation is said to be comparatively simple and rapid.

Sterilization of Surgical Instruments.—The results obtained by Sanderson may be thus summarized: (1) No growth was obtained when either glass rods or scalpels on which non-spore-forming organisms were present were burned off with methyl alcohol. (2) Glass rods and scalpels could not be sterilized by burning them off with methyl alcohol when spores of *B. anthracis, B. cereus, B. botulinus, B. tetani*, etc., were present. The burning off of glass rods and scalpels with a methyl alcohol-formaldehyd mixture (3:1) gave excellent results except in the case of the anaerobes when grease and oil were present. When absolute sterility is desired, the burning off of a surface with an inflammable fluid is not dependable.

Journal of Medical Research, Boston

January-March, 1922, **43**, No. 1

Studies of Uranium Poisoning. V. Influence of Light on Uranium Poisoning in Guinea-Pigs. H. T. Karsner, Tsun Chee Shen and S. A. Wahl, Cleveland.—p. 1.
*Nature of Action of Nonspecific Protein in Disease Processes. III. Nonspecific Proteins and Soluble Toxin (Diphtheria-Tetanus). D. M. Cowie and R. M. Greenthal, Ann Arbor, Mich.—p. 21.
*Experimental Study on Effects of Protein Injections on Infections. I. Kross, New York.—p. 29.
*Influence of Tuberculin on Production of Antibodies. H. L. Thompson, Chicago.—p. 37.
Experimental Testicular Tuberculosis in Rabbit, M. I. Smith, Washington, D. C.—p. 45.
*Studies on Paratyphoid—Enteritidis Group. VII. Enteric Infection ("Food Poisoning") Due to Tapioca Pudding Contaminated with B. Cholerae Suis (B. Suipestifer). C. Krumwiede, D. J. Provost and G. M. Cooper, New York.—p. 53.
Bacillus of Unna-Ducrey. O. Teague and O. Deibert, New York.—p. 61.

Nature of Action of Nonspecific Protein in Disease.—Cowie and Greenthal found that the protective action of normal horse serum precipitated by alcohol is much less than that of the untreated horse serum when injected into guinea-pigs which have received a fatal dose of diphtheria toxin. The globulin (alcohol treated) fraction of horse serum protein is more effective than the albumin (alcohol treated) fraction in protecting guinea-pigs injected with a fatal dose of diphtheria toxin. The nonalcohol treated globulin fraction of 1 c.c. normal horse serum will protect against several fatal doses of diphtheria toxin while the nonalcohol albumin fraction furnishes no protection whatsoever. No protective effect against diphtheria toxin was observed with the following proteins—egg white, milk, guinea-pig serum and rabbit serum. One cubic centimeter of normal horse serum when injected subcutaneously into a guinea-pig will protect against a fatal dose of tetanus toxin. The protective action of normal horse serum against soluble toxin (diphtheria) the authors believe is due to natural antitoxin in the serum and not to the effect of the nonspecific protein injected.

Effect of Protein Injections on Infections.—The conclusion reached by Kross is that the protein treatment has not increased the resistance of animals to mouse typhoid, to general peritoneal sepsis or to pneumonia, and has not enabled them to overcome infection any better than do the untreated ones. In fact, the treatment apparently has reduced the vitality of the animals, as is evidenced by their more rapid destruction. Furthermore, the danger of death from anaphylactic shock is such as to stamp this method of treatment as actually threatening great potential harm. A number of deaths have occurred shortly after intravenous injections of bacterial substances; in one case, for instance, death followed the intravenous administration of "rheumatism phylacogen." The utter lack of positive results in these series and the recognized clinical dangers of the procedure indicate the need for caution in assuming the therapeutic value of intravenous protein injection in the treatment of infections.

Influence of Tuberculin on Production of Antibodies.—Thompson reports on a series of experiments directed toward the determination of the effect of tuberculin on the formation of antibodies to foreign erythrocytes. The injection of tuberculin into rabbits, prior to the injection of sheep erythrocytes as antigen, markedly increased the production of specific hemolysin.

Infection by Bacillus Cholerae-Suis.—Krumwiede et al. relate the case of a family of five, three of whom became ill from eating tapioca pudding and one, a breast fed infant, also became ill. One member who did not eat the pudding escaped. Pork chops were purchased at the same time as the pudding and were handled by the mother, who prepared the meal. Examination showed that the tapioca pudding was infected with *B. cholerae-suis* from the pork products; that a limited amount of growth took place, so that each of those eating the pudding became ill; that the illness was due to an infection and not an intoxication, the infection giving rise to symptoms in one ease, in from six to nine hours.

Journal of Mental and Nervous Diseases, New York

February, 1922, **55**, No. 2

*Occipital Lobe Embolism. A. H. Woods, Peking, China.—p. 81.
Loss of Three German Investigators: Alzheimer, Brodmann and Nissl. E. Kraepelin, Munich.—p. 91.

Occipital Lobe Embolism.—Woods reports two cases. In the first case an embolus lodged in the artery supplying the lower half of the area striata. In the second case the stoppage was in the main stem of the posterior cerebellar artery, the first shock disturbing both the medial and the convex surfaces of the occipital lobe and the postthalamic sensory tracts. The residual necrosis here was of the posterior half of two thirds of the visual area.

Michigan State Medical Society Journal, Grand Rapids

April, 1922, **21**, No. 4

*Use of Toxin-Antitoxin in Prevention of Diphtheria. W. Ross, Detroit. —p. 151.
Disease and Treatment of Maxillary Sinus. F. Smith. Grand Rapids. —p. 154.
Child Welfare. L. Jones, Flint.—p. 159.
Carcinoma of Large Bowel. C. D. Brooks, Detroit.—p. 162.
Pyloric Stenosis and Pylorospasm of Infancy with Especial Reference to Medical Treatment. D. J. Levy, Detroit.—p. 166.
Ethmoid Suppuration. D. A. Campbell, Detroit.—p. 170.
Future Public Health Interests and Activities. J. Sundwall, Ann Arbor.—p. 172.

Toxin-Antitoxin in Diphtheria.—Ross recommends that all physicians who have the care of babies and small children endeavor to immunize them during the period when they are most susceptible, beginning between the sixth and ninth months. Three or more injections of toxin-antitoxin may be given at intervals of from one week to one month, depending on circumstances obtaining in the family and in the vicinity with regard to diphtheria prevalence, without appreciable discomfort to the patient or objection on the part of intelligent parents. The Schick test, if desired, may be reserved until some later date and used to determine whether or not the immunization has been complete. Of the 370 individuals, who died from diphtheria in Detroit during 1920, 328, or 88.6 per cent., had not reached the age of 10; 58.6 per cent. were under 5, which is usually considered school age; 31.1 per cent. were between 1 and 3 and 7 per cent. were under 1 year. These facts show the disease to be preeminently one of early childhood. Both experience and the Schick test indicate that the period of greatest susceptibility is from the latter months of the first year to the third year, when at least 75 per cent. lack natural protection. The preschool age is the period when active immunization is most needed. Among the very young there has been an entire freedom from harmful or uncomfortable reactions of any sort to the administration of toxin-antitoxin.

Public Health Journal, Toronto

March, 1922, **13**, No. 3

Law and Morality. J. W. McFadden, Toronto.—p. 97.
Health Education of Children. L. E. Holt, New York.—p. 106.
Health in Industry and Its Relation to Community. J. G. Cunningham, Toronto.—p. 114.
Social Background. Unemployment Relief. F. N. Stapleford.—p. 125.

South Carolina Medical Association Journal, Greenville

March, 1922, **18**, No. 3

Cancer Problem in Southern States. F. L. Hoffman, Newark, N. J. —p. 51.
Relation of Foci of Infections to Infections of Kidney. M. Weinberg, Sumter, S. C.—p. 57.
Anesthesia Administered Expertly. S. O. Black, Spartanburg, S. C.—p. 59.
Therapeutic Use of Oxygen. W. P. Cornell, Columbia.—p. 60.
Prognostic Factors in Bronchial Asthma. G. R. Wilkinson, Greenville. —p. 61.
Nervous and Mental Diseases: Practical Psychology Versus "Isms." R. O. Whitten, Clinton.—p. 62.
Prevention of Diphtheria. L. Banov, Charleston.—p. 63.
Arteriosclerosis. H. H. Plowden, Charleston.—p. 64.
Ringworm Infection. J. R. Allison, Columbia.—p. 65.
Relation of Nasal Disease to Headache. W. C. Twitty, Rock Hill.—p. 66.
Hyperthyroidism. F. D. Rodgers, Columbia.—p. 67.
Antiseptics in Obstetrics. R. E. Seibels, Columbia.—p. 68.

Southern Medical Journal, Birmingham, Ala.

March, 1922, **15**, No. 3

Body Mechanics: Its Effect on Health of Children. F. B. Talbot, Boston.—p. 171.
Hepatic Extract (Soluble) as a Remedial Agent. A. L. Levin, New Orleans.—p. 175.
Possible Relation of Secretin to Cancer. E. C. Prentiss, El Paso, Tex. —p. 181.
Some Points in Physics and Technic of Roentgen Ray Work. A. L. Gray, Richmond, Va.—p. 185.
Infectious Diarrhea in Young Children. R. C. Spence, Dallas, Tex.—p. 189.
Midwifery and Medical Legislation. C. W. Garrison, Little Rock, Ark. —p. 194.
Rural Health Work: Its Organization and Prosecution. P. W. Covington, New Orleans.—p. 196.
*Solution of Endemic Goiter Problem. H. G. Sloan, Cleveland.—p. 202.
Relative Value of Operations on Gallbladder. W. A. Bryan, Nashville, Tenn.—p. 209.
*Undescended Testicle. M. E. Stout, Oklahoma City, Okla.—p. 213.
Roentgen-Ray Study of Lumbo-Sacral Spine. A. O'Reilly, St. Louis. —p. 217.
*Radium in Treatment of Uterine Cancer. C. O. Donaldson and G. E. Knappenberger, Kansas City, Mo.—p. 224.
Some Rhinologic Experiences in Ophthalmology. G. Sluder, St. Louis. —p. 230.
Cysts and Cystic Tumors of Caruncle: Report of Case of Sebaceous Cyst of Caruncle. J. Green, Jr., St. Louis.—p. 234.
*Radiology or Surgery in Diseased Tonsils. R. H. Lafferty and C. C. Phillips, Charlotte, N. C.—p. 237.

Solution of Endemic Goiter Problem.—Sloan discusses this question from the standpoint of prophylaxis, the basis of his paper being the work done by Marine and Kimball. In their school work Marine and Kimball gave sodium iodid twice a year over periods of two weeks, using 0.2 gm. sodium iodid daily. It takes very little iodin to keep the gland saturated as the normal healthy human gland contains only 30 mg. of iodin, hardly one-half grain. A thyroid lacking iodin takes it up very rapidly. The natural medical tendency is to give iodin in too large doses. In the surgical clinic we frequently see toxic goiters induced by the overadministration of iodin. This toxic condition is also seen in fat people who are attempting to reduce their weight and to this end are taking an overamount of thyroid extract. In the toxic cases for some unknown reason the thyroid is unable to store iodin. The thyroid releases the fabricated, iodin containing thyroxin into the circulation, causing an increase in the bodily metabolism with the well known toxin symptoms of exophthalmic goiter. If the dosage of iodin is controlled carefully there is no danger of inducing exophthalmic goiter by giving it to a patient with endemic goiter. However, in any case in which toxic symptoms have developed, it is the best policy not to give iodin at all. The results of prophylactic treatment of endemic goiter have been most startling. Marine and Kimball showed that among 2,190 normal girls taking 2 gm. sodium iodid twice annually only five showed any enlargement of the gland; of 2,305 normal girls not taking iodin, 495 showed enlargements. Among 1,182 girls with thyroid enlargements who took iodin the thyroids of 773 decreased in size; of 1,048 with thyroid enlargements who did not take iodin the thyroids of only 145 decreased in size. In other words, iodin prevented enlargement of the thyroid in 99 per cent. of the cases. One third of the simple goiters disappeared or were markedly benefited by iodin.

Operation for Undescended Testicle.—Stout's experience has been that the Bevan operation reduces the internal testicular secretion. Orchidopexy is the operation of choice when it can be accomplished without tension on the cord or disturbing the circulation. Orchidocelioplasty cures the physical condition without loss of the testicle or its internal secretion.

Radium in Cancer of Uterus.—Donaldson and Knappenberger have treated sixty-two cases of cancer of the uterus with radium. Eleven have been treated postsurgically. Fifty-one cases have been treated with radium and roentgen ray alone because they were so far advanced as to be inoperable. In this series there were fifty-four cases with the primary growth in the cervix and eight in the fundus. No deaths have resulted from the treatment.

Roentgen Ray in Tonsillitis.—Lafferty and Phillips favor roentgen-ray treatment of diseased tonsils as against surgical treatment. It is safer; more effective; overcomes objection to the knife and the adenoid tissue of the whole throat, the tonsil, postnasal adenoids, the infratonsillar region, the lingual, and the adenoid tissue scattered in the pharynx is reached by this treatment.

West Virginia Medical Journal, Huntington

February, 1922, **16**, No. 8

Congenital Hypertrophic Stenosis of Pylorus, with Special Reference to Its Symptomatology and Treatment. A. C. Harrison, Baltimore. —p. 295.
Needs of Medical Education at West Virginia University. J. N. Simpson, Morgantown, W. Va.—p. 300.
Epilepsy. J. C. Irons.—p. 304.
Necessity for Early Recognition of Specific Infections. C. C. Peters, Princeton, W. Va.—p. 309.
Early Diagnosis of Brain Tumors Before Eye Signs Occur. Differentiation from Encephalitis and from Hysteria and Emotivity. T. A. Williams, Washington, D. C.—p. 311.
Infectious Osteomyelitis. R. H. Walker.—p. 314.
Physical Signs in Incipient Tuberculosis. A. H. Hoge, Bluefield, W. Va. —p. 317.

Wisconsin Medical Journal, Milwaukee

March, 1922, **20**, No. 10

Types of Severe Anemia: Secondary Hypoplastic Anemia. A. Stengel, Philadelphia.—p. 497.
Relation of Splenic Syndromes to Pathology of Blood. W. J. Mayo, Rochester, Minn.—p. 503.
Physiologic Rationalé for Intrathoracic Surgery. J. L. Yates, Milwaukee.—p. 510.
Recent Advances in Chemistry as Aids to Clinician. H. C. Bradley, Madison.—p. 513.
*Luminal in Treatment of Epilepsy. F. D. Murphy, Milwaukee.—p. 519.

Luminal in Epilepsy.—Murphy's experience with luminal in sixty-three cases of epilepsy was so satisfactory that he urges further investigation. Some patients were relieved of the attacks entirely and at once, while others were apparently not affected at first but gradually the attacks began to decrease in number and severity until at last they ceased altogether; still others never became free from the seizures. Few patients treated were not benefited to some extent by luminal.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

March, 1922, **28**, No. 3

Keratodermia Blenorrhagica. D. Lees.—p. 99.
*Meningeal Nevus Associated with Adenoma Sebaceum. D. M. Greig. —p. 105.
*Torsion of Appendix Epiploica Simulating Acute Appendicitis. J. N. J. Hartley.—p. 111.

Meningeal Nevus.—In Greig's case the cerebromeningeal tumor was associated with right hemiplegia, epileptiform convulsions and that peculiar skin affection known as adenoma sebaceum. The patient, aged 18, was the subject of "fits" during fifteen years and of paralysis of the right side during eleven years. The eruption on his face had been noticed at birth. At operation the Rolandic area was found covered by an enormous number of large veins, forming a vascular tumor, which projected into the upper part of the opening and extended to the great longitudinal fissure. Removal was impossible, so the whole area was gone round with catgut on an aneurysm needle, and every vessel that could be underthreaded was ligatured. Two weeks after the operation he was well. During the succeeding years he continued in fair health, and had no recurrence of his "fits." He was unable to obtain employment on account of his hemiplegia, which only improved and did not pass off; but he remained at home, able to take charge of matters there. Eight years later, however, he began to act strangely, and, finally, his mental condition was such that he had to be placed in an institution.

Torsion of Appendix Epiploica Simulates Appendicitis.—The confusion in diagnosis in Hartley's case was occasioned by a dark purple colored appendix epiploica, attached by a narrow pedicle to the anterior surface of the ascending colon some distance above the ileocecal junction. The appendix epiploica was discoid in shape, heavily laden with fat, and its delicate pedicle was twisted fully twice. Its base was ligated, and the appendix epiploica removed. The patient made a speedy recovery.

Glasgow Medical Journal

March, 1922, **117**, No. 3

*Rickets: The Part Played by Unhygienic Social Conditions in Predisposing to the Disease. D. N. Paton.—p. 129.
Rickets in India. H. S. Hutchison and S. J. Murphy.—p. 145.
*Erect Dislocation of Humerus. J. H. Pringle.—p. 159.
Case of Cerebral Injury and Cranioplasty. R. F. Young.—p. 163.

Unhygienic Conditions as Cause of Rickets.—From his study of rickets Paton has come to the conclusion that it is highly improbable that a disease with such marked clinical features and pathologic changes can be directly caused either by unhygienic surroundings or by defective feeding. The close association of rickets with the conditions of slum life, and the way in which it is apt to affect more than one member of the same family, suggest the possibility of an infective element in its causation. It is not necessary to assume that the infection is a specific one. The onset of xerophthalmia as an accompaniment of arrested growth in the absence of the fat soluble A factor is an illustration of this predisposition to infection. The condition cannot be considered in any other light than as of microbial origin rendered possible by the depressed activity of metabolism.

Erect Dislocation of Humerus.—Pringle relates the case of a man who fell across the well of a hoist, and was probably saved from more serious injury than a dislocation of his shoulder by reason of his right hand and forearm passing between a horizontal iron bar and a small ledge, about a foot and a half below the level of the bar, on the opposite side of the well. He remained suspended over the well of the hoist in this position with his right arm held in extreme abduction and elevation by the weight of his body until he was rescued. A typical "luxatio erecta" of the right humerus had resulted. The head of the humerus caused a very distinct bulging of the right axilla, and the right axillary artery lay upon it and was obviously very considerably compressed, for the radial pulse was very much smaller in the right than at the left wrist. Pringle asserts that only two other similar cases are on record.

Indian Medical Gazette, Calcutta

January, 1922, **57**, No. 1

Rôle of Cattle in Epidemiology of Malaria. A. B. Fry.—p. 1.
Choleroid Epidemic in United Provinces. C. A. Sprawson and J. G. Mukherji.—p. 2.
Rhinosporidium Kinealyi of Conjunctiva. R. E. Wright.—p. 6.
Clinical Pictures of Tuberculosis in Relation to Bones and Joints. A. S. Fry.—p. 7.
Statistics of Treatment of Cholera Cases by Modified Method of Leonard Rogers, as Carried on at Mayo Hospital. L. M. Chatterjee. —p. 10.
*Kala-Azar: Treatment by Intramuscular Injection of Special Preparation of Sodium Antimonyl Tartrate. L. E. Napier.—p. 10.
*Case of Double Facial Paralysis Following Syphilis. P. C. Mukharji. —p. 16.
Case of Snake Bite. D. F. Michael.—p. 17.
Use of Tincture Iodin Intravenously. H. Das Gupta.—p. 18.
*Vaginal Tumor of Unusual Size. N. A. Khan.—p. 18.
Case of Gumma of Vertebrae. G. T. Burke and N. C. Mitra.—p. 19.

Antimony Intramuscularly in Kala-Azar.—Napier relates his experiences with the use of a 2 per cent. solution of a scale preparation of sodium antimonyl tartrate, dissolved in distilled water. All the injections were given intramuscularly. In ten cases the result of the treatment was very satisfactory; seven patients were "apparently" cured; in two the treatment was interrupted while progressing satisfactorily, and one patient is still under treatment, also progressing satisfactorily. All the details that are likely to be of interest are given.

Facial Paralysis Following Syphilis.—In the two cases reported by Mukharji the paralysis developed about two months after the patients disappeared from observation while still under treatment for the primary lesion. A full course of treatment relieved the paralysis.

Vaginal Tumor of Large Size.—The pedicle of the tumor in Khan's case was attached to the posterior wall of the vagina, about an inch and a half from the vulva. The tumor was the size of a large coconut and weighed 20 ounces. The woman gave birth to three children since the first appearance of the tumor. After the first two labors she was able to replace the tumor, but after the third labor the effort failed. This led to the removal of the mass.

Journal of State Medicine, London

March, 1922, **30**, No. 3

Lead Poisoning in Industry. K. Goadby.—p. 93.
Hygiene and Women's Work. M. Scharlieb.—p. 113.
Alcohol as It Affects Community. V. Astor.—p. 118.
Antenatal Care. L. Barrett.—p. 123.

Journal of Tropical Medicine and Hygiene, London

March 15, 1922, **25**, No. 6

Early Contribution to Medical Helminthology Translated from Writings of Arabian Physician Ibn Sina (Avicenna) with Short Biography. M. Khalil.—p. 65.
Susceptibility of Egg Masses of Planorbis to Drying, Chemical Fertilizers, etc., and Its Bearing on Control of Bilharzia Disease. M. Khalil.—p. 67.
Pulmonary Tuberculosis as Problem of Tropical Medicine. W. M. McDonald.—p. 69.

Lancet, London

March 25, 1922, **1**, No. 5143

Future of Hospitals of London. J. K. Fowler.—p. 567.
*Amebic Liver Abscess: Its Pathology, Prevention and Cure. L. Rogers.—p. 569.
Studies in Experimental Scurvy, with Special Reference to Antiscorbutic Properties of Some South African Foodstuffs. E. M. Delf.—p. 576.
Blood Grouping and Clinical Applications: with Simple Method of Group Determination. S. C. Dyke.—p. 579.
*Unusual Case of Rupture of Liver. H. Meade.—p. 582.

Amebic Liver Abscess.—Rogers asserts that the great majority of large amebic liver abscesses, which are sterile as regards bacteria, can easily be cured by repeated aspirations, combined with the the all important administration of the specific ameba destroying ipecacuanha and emetin, with a resulting reduction in the mortality to one fourth of that of the recently generally used open operation; while in the few exceptional cases requiring incision sterile siphon drainage should always be used to avoid the formerly common and fatal secondary bacterial infections following open drainage in tropical countries.

Rupture of Liver with Recovery.—Meade relates the case of a boy, aged 17 years, who when jumping a fence 4 feet high touched the top and was thrown to the road. He immediately felt a heavy dizziness in his head and pain in right side with difficulty in breathing. He got up, walked about 250 yards, and collapsed. Meade saw him about one and a half hours after the accident and found signs of internal hemorrhage. Within forty-eight hours of the accident the right hypochondrium and the right flank became very distended, and he seemed in a hopeless condition but rallied a little and under treatment continued to improve. About seven weeks after the injury a laparotomy was performed. On opening the peritoneum a large cavity was found containing broken down blood clot mixed with bile. The quantity removed was 8 pints, besides what was soaked up in the sponges. The liver was torn in two. The torn portion was adherent to the anterior abdominal wall, cutting off the cavity with the clot from the general peritoneal cavity. The tear in the liver was to the right of the vena cava, and passed almost to the inferior border of the liver at the gallbladder. Being afraid that freeing the adhesions might start a bad hemorrhage the wound was closed with a small drain in the upper angle. After a stormy course necessitating two transfusions the patient regained perfect health.

Practitioner, London

March, 1922, **108**, No. 3

*Clinic Import of Hoarseness in Relation to General Practice: Hoarseness as Early Symptom in Intrinsic Laryngeal Cancer. P. Watson-Williams.—p. 153.
Recent Work on Anesthetics. J. Blomfield.—p. 163.
Venereal Diseases as We Seem Them Today. J. E. R. McDonagh.—p. 172.
Diathermy in Genito-Urinary Practice. K. M. Walker.—p. 192.
Causes of Frequency of Micturition with Reference to Diagnosis and Treatment. W. J. Irwin.—p. 203.
Clinic Demonstration on Some Pelvic Conditions. T. Holmes.—p. 213.
Bases of So-Called Neurasthenic States. T. A. Williams.—p. 220.

Significance of Hoarseness.—Persistent or recurrent hoarseness, Williams says, may for a time portend no more than a lingering of an acute catarrhal laryngitis or recurring catarrh from septic adenoids and tonsils, or result from chronic irritation in chronic alcoholism, dusty occupation, etc. It is in some cases a manifestation of rheumatism or of gout, or it may be due to irritation by a distended tonsillar crypt, a tonsillolith or other local source of irritation. Direct inspection by laryngoscopic examination is most desirable in any case of persistent hoarseness or alteration of voice. From the failure to recognize quickly the gravity of the affection of which hoarseness is the sole manifestation, many lives are sacrificed and the health of many more impaired or even permanently injured.

South African Medical Record, Cape Town

Feb. 25, 1922, **20**, No. 4

Pelvic Inflammation. A. S. Wilson.—p. 62.
Use of Thomas Splint for Leg Injuries. M. G. Pearson.—p. 72.
Case of Intestinal Obstruction by Meckel's Diverticulum. G. C. Smyth.—p. 75.

Archives Médicales Belges, Liége

December, 1921, **74**, No. 12

*Some Lessons of World War in Medicine and Surgery from German Viewpoint. W. S. Bainbridge.—p. 1089.
*Polyneuritis After Injection of Serum. R. Marchal.—p. 1124.
*Fatal Intoxication with Mercuric Cyanid. Lakaye.—p. 1129.
Relation Between Syphilis and Cancer of Respiratory and Digestive Tracts. Lambert.—p. 1132.

Lessons of World War from German Standpoint.—This is a translation of an address delivered by Commander Bainbridge at the 1921 annual meeting of the military surgeons of the United States. He reviews the progress realized in medicine and surgery in Germany during the war.

Polyneuritis After Injection of Tetanus Antiserum.—Marchal reports a case of polyneuritis in a young officer, consecutive to an injection of antitetanus serum after a fall from his horse, in which the knee had been slightly bruised. He had had whooping cough at 7, and diphtheria at 8 entailing polyneuritis in the muscles of the larynx and of the left shoulder. Marchal says that during the war he made thousands of injections of antitetanus serum with never an instance of polyneuritis. Light is thrown on the present case by the postdiphtheric polyneuritis at the age of 8. This second attack was in the same region, and he considers the recurrence as the awakening of an old affection, due to the injection of the antiserum.

Sudden Fatal Intoxication with Cyanid of Mercury.—Lakaye reports the case of a woman of 62 with tabes which ended fatally in five days after three injections of a total of 4 cg. of mercuric cyanid. He advises caution in its use, beginning with small doses and never exceeding 2 cg. daily.

Bulletin de l'Académie de Médecine, Paris

Feb. 28, 1922, **87**, No. 9

Hygiene of the Mind: Cultivation of the Faculty of Thinking of Nothing. Guéniot.—p. 250.
*Protecting Bricks for Roentgen Work. H. Béclère, J. Chevrotier and H. Lumière.—p. 255.
*Epizootic Lymphangitis in Horses. A. Buquet and L. Nègre.—p. 257.

Bricks for Roentgen-Ray Work. — Béclère and his co-workers use bricks containing each 1 kg. of baryta. This is as complete a protection against the roentgen rays as a sheet of lead 2.4 mm. thick, while walls, partitions, etc., can be conveniently and economically constructed of such bricks.

Epizootic Lymphangitis.—Boquet and Nègre refer to a mycosis affecting horses, due to Rivolta's cryptococcus. They have made a vaccine for it, and state that 80 per cent. of 200 horses treated with it in Algiers were cured and 74 per cent. of 246 horses in France.

Bulletin Médical, Paris

Feb. 25, 1922, **36**, No. 9

*Pathology of the Sympathetic System. A. C. Guillaume.—p. 155.
*Vagotonia. F. Moutier.—p. 158.
*Asthma. M. Ségard.—p. 160.
Limits and Extent of the Pathology of the Sympathetic. A. C. Guillaume.—p. 166.

Pathology of the Sympathetic Nervous System.—Guillaume remarks that the neuroglandular system of the vegetative life of the organism has only a very modest personal pathology, but it intervenes in all the pathologic conditions of this organovegetative life. Hence the pathology of the organs and tissues which pertain to this vegetative life is the pathology of the sympathetic system, just as its pathology is theirs.

Vagotonia.—Moutier's own experience has been that vagotonia is encountered only in persons with narrow pupils, exaggerated oculocardiac reflex, respiratory arrhythmia, frequent extrasystoles, reacting vigorously to pilocarpin, and displaying a tendency to pains, colics and sphincter disturbances at the cardia, pylorus or anus.

Treatment of Asthma.—Ségard remarks, "When I had studied ten cases of asthma, I thought I knew asthma well; when I had studied a hundred cases, I was not so sure of this, and now that I have seen a thousand cases I feel that I know scarcely anything about it at all." . . . "I have never seen the multiple overlapping causes exactly the same in even two cases." The digestion, the food, the respiration, the emunctories may all be concerned in the production of the asthma, and we may have to check or whip up either the vagus or the sympathetic system. He warns against breeding an addiction; he has seen many instances of epinephrin addiction. One such addict had been injecting about 0.33 c.c. of the 1:1,000 solution of epinephrin every three hours for six months. He uses a 1:2,000 solution and keeps to the smallest possible effectual dose. This in the sympathicotonia cases and belladonna in the vagotonia cases represent great progress in treatment of asthma. The balance between these systems is unstable, and one may predominate one day and the other the next. It would be better to call the condition neurotonia, he says, instead of specifying which system happens to be predominating at the moment. The instability of the colloids in the plasma is a further element which has to be considered in treatment of asthma. The beneficial action of courses of mineral waters is easily explained, he says, now that we understand better the pathogenesis of asthma. The course aids in detoxication, promotes the healing of bronchial lesions, soothes the nervous system and aids in desensitizing against the anaphylaxis.

March 4, 1922, **36**, No. 10

Intestinal Parasites. G. Lyon.—p. 181.
Diabetes with Abolished Reflexes in Man of 60, Son of a Syphilitic. M. Pinard and Mendelssohn.—p. 186.

March 11, 1922, **36**, No. 11

Antigonococcus Vaccine Therapy. R. Le Fur.—p. 199.
Vagotonia. A. C. Guillaume.—p. 200.
*Case of Rebellious Hydrophobia. Degrave.—p. 208.

Hydrophobia Rebellious to Pasteur Treatment.—The young woman had been given the usual Pasteur treatment, the third day after she had been bitten in the hand by a rabid dog. Sixty-three days after the completion of the course she developed rabies, fatal in thirty-six hours. At the time of the bite she was in a very depressed, nervous condition, and after the treatment had been constantly apprehensive, weak and morbid. The laceration of the hand had not been cauterized, but merely swabbed with iodin and rinsed with Van Swieten's solution. The physical condition had been so poor that the organism was unable to respond adequately to the Pasteur treatment.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 17, 1922, **46**, No. 6

Gangrenous Vaginitis. G. Laroche and Deglaire.—p. 294.
*Typho-Bacillosis. C. Souleyre.—p. 296.
*Gangrene from Illuminating Gas. Garnier and Cathala.—p. 304.
*Pituitary Treatment of Diabetes Insipidus. Démètre.—p. 308.
*Alcoholic Injury of Spinal Cord. Oettinger and Manouélian.—p. 316.
*Lesions of Auricles and Arrhythmia. P. Ribierre and R. Giroux.—p. 318.
*Lumbar Puncture in Diabetes. J. Lhermitte and C. Fumet.—p. 322.
Dilatation of Bronchi with Secondary Tuberculization. E. Rist and P. Ameuille.—p. 328.
*Improved Colorimeter. A. Baudouin and H. Bénard.—p. 332.
Instruments for Tracheo-Fistulization. G. Rosenthal.—p. 345.

Brief Incubation of Tuberculosis.—Souleyre reports the case of a robust boy of 12, in a hygienic country home, who was exposed for only thirteen days to contagion from an open case of unsuspected tuberculosis in a guest visiting in the home. The boy then developed symptoms suggesting rearousing of his mild malaria and other symptoms suggesting typhoid, but their true nature was revealed by swarms of tubercle bacilli in the pus from an accidental abscess. He was the only one of the ten children infected by the tuberculous guest. The interval of thirteen days seems short, but instances are cited of even less than this.

Gangrene from Toxic Arteritis.—Intoxication with illuminating gas was responsible for the arteritis of the terminal arteries entailing patches of gangrene.

Pituitary Treatment in Diabetes Insipidus.—Démètre presents arguments to sustain the assumption of a renal functional element directly connected with some permanent secretory deficit in the pituitary as the cause of diabetes insipidus. Pituitary treatment has a direct but transient action on the polyuria, as he shows by the typical cases described.

Alcoholic Paralysis.—The motor cells of the cytoplasm of the spinal cord showed pronounced vacuolization in two women with alcoholic paraplegia.

The Anatomic Basis of Total Arrhythmia.—After a bullet wound of the chest, complete arrhythmia developed in the man of 38. Under digitalis the pulse dropped from 130 to 100 and was less irregular, but the man died the second day after the injury. The bullet had entailed a hematoma in the cellular tissue around the aorta and in the roof of the right auricle. The heart was intact otherwise.

Effect of Lumbar Puncture in Diabetes.—Lhermitte and Fumet report that the polyuria and the glycosuria dropped decidedly when 7 or 8 c.c. of cerebrospinal fluid was withdrawn. The patients were two diabetic women in the seventies, and this same inhibiting influence was noted on repetition of the lumbar puncture. No effect was apparent from subcutaneous injection of hypertonic saline solution, which it was hoped might answer the same purpose as the lumbar puncture.

Improved Colorimeter.—The instrument illustrated by Baudouin serves for a colorimeter, a nephelemeter (gage for opacity and diffusion), a differential spectroscope, and a spectrophotometer.

Gynécologie et Obstétrique, Paris

January, 1922, **5**, No. 1

*Lutein Cells and Uterine Hemorrhage. G. de Rouville and P. Sappey.—p. 1.
*Neoplasms of Cervical Glands. K. Moukayé.—p. 39.
*Lutein Cysts in Pregnancy. Lévy-Solal, Lelièvre and H. Vignes.—p. 70.
*Treatment of Metrorrhagia in Young Girls. H. Hartmann.—p. 81.

The Lutein Cells in Relation to Uterine Hemorrhage.—The photomicrograms reproduced by Rouville and Sappey sustain the assumption that the secretion of the lutein cells is responsible for menstruation and uterine hemorrhage when there is no general cause or local lesion in the uterus. In amenorrhea, few or no lutein cells are found in the ovary; with normal menstruation the lutein cells are moderately numerous, while with excessive, repeated uterine hemorrhage, the lutein cells were always found abnormally numerous and large. The macroscopic aspect of the ovaries is not decisive; only the microscope will show the actual proportion of lutein cells. The cases cited are selected as typical from a large material of operative cases of ovarian disease: always, with hemorrhage, swarms of lutein cells; always, without hemorrhage, lutein cells scarce.

Cancer of Glands in the Neck.—Moukayé analyzes twenty-six cases of cervical adenoma in the last two years. There was no metastasis and no invasion of the depths as a rule. Even if the glandular process is malignant, it is not very virulent. Chronic inflammation of the glands in the neck is the first stage. The lobulated form of adenoma seems more liable to malignant transformation than the papillary form, and requires more radical excision. Cylinder cell cancers seem to develop by preference in small or even microscopic adenomas. They can be differentiated by the lack of mucus and the return of karyokinesis, but all adenomas should be extirpated, he reiterates in conclusion.

Bilateral Lutein Cysts.—The primipara of 30 was delivered of a normal child at term although both ovaries were studded with lutein cysts. The aspect of the cysts was such as we are accustomed to associate with a mole or chorio-epithelioma, but the placenta was normal.

Metrorrhagia in Young Girls.—After exclusion of removable causes, Hartmann believes in giving radium treatment a trial. This offers relief with a chance of retaining the genital functions, but in the present status of our knowledge we are unable to state positively the outcome to the family. Syphilis affecting the ovaries may induce tenacious and rebellious uterine hemorrhage, and this should always be excluded before resorting to operative measures. Ovarian cysts do not induce hemorrhage, and adnexitis is rarely a cause of virginal hemorrhages.

Paris Médical

Jan. 7, 1922, **12**, No. 1

*Tuberculosis in 1922. P. Lereboullet and L. Petit.—p. 1.
*Diagnosis of Tuberculosis from Sputum. A. Calmette.—p. 13.
*Tuberculous Pneumonia. E. Rist and P. Ameuille.—p. 14.
Removal of Infants from Tuberculous Mothers. L. Bernard.—p. 21.
*Remote Results of Sanatorium Treatment. R. Burnand.—p. 24.
Pituitary Treatment of Hemoptysis. A. Pissavy.—p. 28.
Trauma and Surgical Tuberculosis. J. Madier.—p. 30.

Tuberculosis in 1922.—Lereboullet's annual chronicle of the progress realized in fighting tuberculosis states, this year, that the efforts since the war are beginning to show results. He emphasizes anew that the physicians connected with the preventoriums must be sociologists and not therapeutists. France is now rich, he says, in devoted and competent visiting nurses, with eight training schools in seven large cities. He urges that the state should provide disability and retirement pensions for the trained visiting nurse. Thirty-four practitioners recently took the graduate course for preventorium work before founding preventoriums in Bretagne and Anjou, taking advantage of the Rockefeller scholarships for the purpose. France now has 425 tuberculosis dispensaries and 214 sanatoriums with a total of 27,515 beds. This includes forty-four at the seashore with 8,148 beds and forty-seven public sanatoriums with 4,546 beds. These figures do not include the tuberculous placed in private families. Among the 2,300 children of tuberculous families at Paris, placed in healthy country homes by the Oeuvre Grancher, only seven have developed tuberculosis. The recent great progress realized with Besredka's and Calmette's antigens has brought confirmation of the reliability of negative fixation of complement in the diagnosis of tuberculosis, when syphilis and malaria can be excluded or the infection is not very recent or the infection is not extremely rapid and debilitating. This fixation of complement test even thus improved is less sensitive than the skin reaction, but it precedes positive findings in the sputum. When it veers to negative after having been positive, this corroborates the clinical cure. The general verdict on the Wildbolz urine test is that too many factors enter into it for it to have any value in the diagnosis or the prognosis of tuberculosis. A pregnancy seems to reduce the resistance to tuberculosis, and the latter is always aggravated by the evolution of the pregnancy. If only one lung is affected, early artificial pneumothorax is liable to prove extremely useful. Rist urges careful search for a pulmonary lesion in pregnant women, as a prompt artificial pneumothorax may ward off all trouble from this source. He has reported a striking case of the kind, and Hervé, three cases. It requires, however, the close cooperation of the obstetrician, the radiographer and the lung specialist physician. Serotherapy has gone backward rather than forward in the last year, and tuberculin treatment, Lereboullet remarks "is now condemned by the majority of phthisiologists." Shiga and Rappin have each reported encouraging results from vaccine therapy of tuberculosis. Artificial pneumothorax continues to give favorable results in skilled hands, but the necessity for gaging the intrapleural pressure must be borne in mind. The weight, sputum, auscultation and roentgen findings must be supervised, and Jacquerod has recently emphasized the necessity for maintaining the pneumothorax indefinitely, possibly the whole life long. Burnand has recently commented on the rapidity with which adhesions form when the pneumothorax is suspended, thus preventing resort to it again later when indicated.

Diagnosis of Tuberculosis from the Sputum.—Calmette expatiates on the reliability and advantages of the Petroff method of cultivating tubercle bacilli directly from the sputum. He has been using it for months with no failures. The colonies of the tubercle bacilli are manifest in from eight to fourteen days at longest.

Tuberculous Pneumonia.—Rist and Ameuille present evidence that chronic pulmonary tuberculosis is nothing but a succession of pneumonias. This conception of the evolution by a series of *poussées* renders it necessary to refrain from passing judgment on the lesion until the ebb and flow are past, and the lesion has retrogressed as much as it can retrogress. Every one of the waves of pneumonia must be estimated in the same way, not accepting the sometimes stormy onset of the wave and the extent of the initial lesion as definitely settled, but waiting for the wave to ebb before passing judgment on the damage it has wrought. The prognosis has to be based on the general average as the waves come and go, and the extent of parenchyma of the lung still intact.

Ultimate Outcome of Sanatorium Treatment.—Burnand prints the questionnaire he has been sending to 1,340 former patients treated at the Leysin Sanatorium, and leaving between 1912 and 1917. The questionnaire was filled out and returned by 644 families. Of the 331 known to be living, 286 have full earning capacity restored; 32 are able to do only light or intermittent work and 13 do not support themselves. Of the 174 supposedly cured when they left the sanatorium, 85.05 per cent. have their full earning capacity. Of the 438 listed as cured or materially improved, 63.24 per cent. still have full capacity from four to eight years later. Of the 313 who have died since, 217 were in the third stage, 78 in the second, and only 18 were in the first stage. On the other hand, 164 of the 318 with restored earning capacity were in the second and third stages of the disease. He regards these figures as encouraging, saying that advanced cases do not belong in a people's sanatorium, the aim of which is to restore the full earning capacity. He emphasizes further that even a six months' stay is too short. Phthisis, he reiterates, is a very grave disease, and he warns those who write so optimistically about curing it in short order with this or that. The mountain climate he regards as a capital factor in starting the process of repair, and artificial pneumothorax as an adjuvant of the highest rank in combating the grave cases. Farm colonies or other arrangements for favorable conditions of life after leaving the sanatorium are needed to consolidate the cure.

Presse Médicale, Paris

March 4, 1922, **30**, No. 18

*Anaphylaxis and Idiosyncrasy. F. Widal, P. Abrami and J. Lermoyez.—p. 189.
Mechanism Regulating Arterial Pressure. J. P. Langlois and L. Binet.—p. 194.

Anaphylaxis and Idiosyncrasy.—Widal and his co-workers argue that certain persons seem to react with flocculation of the colloids in the blood serum more readily than others. It might almost be called a diathesis, this constitutional predisposition to colloidoclasis on slight provocation. They have long had under observation a case of this diathesis in a most pronounced form. The instability of the woman's plasma colloids is evident in her paroxysmal itching, eruptions, urticaria, febrile periods, spasmodic coryza, hay-fever and asthma, which develop from exposure to pollens, chilling of the skin, ingestion of antipyrin or acetylsalicylic acid, or irritation from a polyp in the nose. She is a robust woman of 37, otherwise healthy, and this tendency to these anaphylaxis and idiosyncrasy phenomena has developed in the last eleven years, with a progressive and kaleidoscopic course. Ingestion of 10 cg. of acetylsalicylic acid induces immediate hemoclasis. In two minutes the leukocytes drop from about 12,800 to 8,200; then follows a generalized eruption, with headache, malaise and intolerable pruritus. A little later there is dyspnea, and by the end of the hour an attack of asthma and symptoms of coryza, the lacrimation and sneezing persisting until the next day. The chilling of the skin on stepping out of a warm bath is enough to bring on the whole set of symptoms just as complete as exposure to pollens or ingestion of the two drugs to which she is susceptible. This demonstrates that while anaphylaxis may be incriminated for some of the manifestations, we must ascribe others to an idiosyncrasy, and proves that the underlying cause of both is the instability of the colloid balance in the plasma. By desensitizing the woman to acetylsalicylic acid by a course of minute daily doses, 1 cg. for four days; then for the same length of time, 2 cg., then 3, and then 5 cg., the desensitization was complete, so she can now take at any time 60 cg. of the drug without disturbance of any kind. This desensitization banished at the same time the susceptibility to antipyrin. But the susceptibility to chilling, to pollens, etc., still persists unmodified.

Progrès Médical, Paris

March 11, 1922, **37**, No. 10

Action of Autoserotherapy on Albumins and Lipoids in Blood Serum with Cancer. Loeper, Debray and Tonnet.—p. 109.
Definition and Causes of Overwork in Schools. Paul-Boncour.—p. 109.
Signs of Intracranial Pressure and Treatment. Delbet.—p. 111.

Schweizer Archiv f. Neurol. u. Psychiatrie, Zurich

1921, **9**, No. 2

*Regeneration of the Nervous System. C. A. Perret.—p. 163.
*Regeneration of the Nervous System. R. Bing.—p. 189.
Apraxia. R. Brun.—p. 194. Cont'n.
Sensibility in the Skin and Deeper Tissues. Doebeli.—p. 227. Conc'n.
Research on Coffee. H. W. Maier.—p. 244. Conc'n in Vol. 10, p. 80.
*Muscular Atrophy After Division of Nerve. A. Audova.—p. 270.
*Dwarf and Giant Growth. A. Gigon.—p. 283. Conc'n Vol. 10, p. 113.

1922, **10**, No. 1

Morphology and Pathogenesis of Encephalitis. C. v. Monakow.—p. 3.
Case of Hemicephalus. E. de Vries.—p. 32.
Personal Experiences with Psychotherapy. A. Maeder.—p. 100.
Psychology of Traumatic Neuroses. H. Meier-Müller.—p. 130.

Regeneration of the Nervous System.—In this address delivered at the annual convocation of Swiss neurologists, Perret spoke from the surgical standpoint, while Bing discussed the sources of error in the clinical evaluation of the regeneration of injured trunk nerves. (Both are in French.)

Muscular Atrophy After Division of Nerves.—Audova discusses the various factors involved in the atrophy of the skeletal muscles after a nerve has been severed. In the rabbit, the loss in weight or dry substance may amount to 50 per cent. in four weeks. The chemical composition also is modified. No tendency to hypertrophy of corresponding muscles in the sound limb could be discovered.

Dwarf and Giant Growth.—Gigon has had opportunity to examine and apply various functional tests to eight persons of exceptionally small or large growth, including a man of 21 only 87 cm. tall; a girl of 4, 73.5 cm. tall; a woman of 22 whose height is 207 cm., and a man of 29 who, reclining, measures 237 cm., nearly 7 feet, 11 inches. This is the London giant known as "Bobs." His height, standing, is 234 cm. but he weighs only 112 pounds, confirming the osteoporosis evident in the roentgenograms. The giantism is of the acromegaly type, the muscles weak. The female giant is exceptionally well proportioned and apparently healthy, but the menses are rare and there is a very slight tendency to a eunuchoid type, and there is one exostosis on the right tibia.

Archivio Italiano di Chirurgia, Bologna

February, 1922, **5**, No. 1

*Endothelioma of the Brain. D. Maragliano.—p. 3.
*Kidney Tumor with Misleading Symptoms. A. Comolli.—p. 17.
*Ligation of Wisp of Bladder. F. Nassetti.—p. 41.
Clinical and Bacteriologic Aspects of Necrotic Osteomyelitis After War Wounds. O. Uffreduzzi and G. M. Fasiani.—p. 54.
*Racemose Angioma. A. Bertocchi.—p. 65.
*Mixed Tumors of Salivary Glands. I. Arzelà.—p. 87.

Endothelioma of the Brain.—Maragliano reports the complete clinical recovery of a shoemaker of 48 after enucleation of an endothelioma, the size of a mandarin orange, in the parietal and frontal lobes. It shelled out easily in its capsule. The jacksonian epilepsy had begun about a year before, and paresis had followed, the general condition growing worse until the man was entirely incapacitated. There was profuse hemorrhage at the first trephining, and the lifting of the flap was postponed for five days. This revealed the tumor, and a scrap was taken for examination, but, as the pulse was growing weak, the flap was replaced and sutured. Four days later the flap was raised again and the tumor was easily shelled out. It was extremely vascular and the cavity left in the compressed brain substance had no meninges. The general condition and pulse kept good throughout the enucleation. To ward off adhesions, a flap of fascia lata was interposed between the brain and the bone, and the skull was replaced and sutured except for one small gauze drain. Full earning capacity has been restored for eight months to date. A course of treatment for syphilis had preceded the operation, and some improvement had been realized although there was nothing to suggest syphilis. Maragliano expatiates on the advantages of operating thus in several sittings, allowing recuperation from the shock of hemorrhage from the soft parts and the shock from cutting the skull flap, without opening the dura, before attacking the tumor itself. He thinks that the lifting of the flap and opening the dura are the most dangerous steps.

Kidney Tumors.—In Comolli's three cases, serous cysts, a hydatid cyst and an adenocarcinoma had induced a puzzling train of symptoms in the respective cases, the urine being apparently normal throughout, and thus misleading the diagnosis. Pyelography gave the clue, and two of the patients recovered after nephrectomy. The man with multiple hydatid cysts died.

Ligation of Part of Bladder Wall.—Nassetti's research on rabbits has apparently established the feasibility of tying off a wisp of the bladder wall.

Racemose Arterial Angioma.—Bertocchi compares the literature on this subject with a case in which he successfully removed an angioma of this kind on the right frontoparietal region of the man of 37. The erectile and pulsating tumor was about as large as an orange, and it had ulcerated at one point. It was resected at two sittings after ligation of both external carotids, and ligation of numerous vessels entering the angioma.

Tumors of Salivary Glands.—Arzelà's study of the histogenesis and course of mixed tumors of the salivary glands is based on six cases.

Archivio di Patologia e Clinica Medica, Bologna

January, 1922, **1**, No. 2

Muscular Tension of the Stomach. A. Gasbarrini.—p. 105.
Action of the Extract of the Posterior Lobe of the Pituitary Body. L. Villa.—p. 152.
*Research on Dogs Immunized Against Pyrodin. S. Zisa.—p. 165.
Present Status of the Oculocardiac Reflex. A. Alchieri.—p. 194.

Experimental Phenylhydrazin Poisoning.—Zisa reports comprehensive research on pyrodin poisoned dogs, tabulating the findings which confirm the apparent immunization of the erythrocytes against the action of this and certain other poisons.

Policlinico, Rome

Feb. 20, 1922, **29**, No. 8

*Sugar in Blood with Arteriosclerosis. A. Botti.—p. 249.
*Tuberculous Meningitis with Hemiplegia. S. Pulvirenti.—p. 251.
Intensive Antitoxin Treatment of Tardy Postdiphtheric Paralysis. D. Tangheroni.—p. 256.
Hygiene of the Mouth. B. De Vecchis.—p. 258.
Influence of America on History of Medicine. P. Giacosa.—p. 267.

The Sugar Content of the Blood with High Blood Pressure.—Botti refers to the hypertonia of arteriosclerosis, stating that the sugar content of the blood was abnormally high in ten cases tested. The tolerance for sugar was reduced. Albertoni asserts that sugar increases the blood pressure, but in Botti's case the hypertension and the sugar level did not parallel each other.

Hemiplegia in Tuberculous Meningitis.—Pulvirenti reports two cases, secondary to Pott's disease, in women. The hemiplegia developed suddenly, with symptoms suggesting cerebral hemorrhage. The right motor zone was the focus in one case. In the other the right hemiplegia with motor aphasia was explained by the extensive focus in the left hemisphere secondary to arteritis.

Riforma Medica, Naples

Jan. 9, 1922, **38**, No. 2

*Integral Tuberculin. L. Sivori and U. Rebaudi.—p. 25.
Castellani's Vibriothrix Ceylonica. I. Jacono.—p. 32.
*Glycuronuria in Children. M. Coda.—p. 32.
The Limits of Workmen's Compensation. E. Aievoli.—p. 36.

Preparation of Integral Tuberculous Toxin.—This communication from Maragliano's institute for the study of tuberculosis reports the rapid reduction of living tubercle bacilli to a mass containing all their elements, an amorphous Ziehl-negative mass, which yields a peculiarly effectual tuberculin.

Glycuronuria in Children.—Coda found glycuronuria in 15 of 48 children with normal temperature and in 12 of 36 febrile cases in children. The test was constantly positive in 3 epileptic children but never in the 7 children with chorea. In the 27 glycuronuria cases there was indicanuria in 17. The test was always negative in healthy infants, while the findings were positive in 9 of 12 with fever and in the 8 with bronchopneumonia.

Brazil-Medico, Rio de Janeiro

Jan. 7, 1922, **36**, No. 1

Sodium Morrhuate in Pulmonary Tuberculosis; Sixteen Cases. C. Ferreira.—p. 1.
*Nature of Shock. A. L. Pimenta Bueno.—p. 5.
Therapeutic Action of Violet and Ultraviolet Rays. Carvalho.—p. 8.

Nature of Shock.—Pimenta Bueno explains that there is a compressive and decompressive interdependence between the blood pressure in the abdomen and in the skull. In the abdomen the elastic walls allow great fluctuation in the pressure without harm, but the unyielding skull may entail grave accidents when the pressure fluctuates here. Congestion in the splanchnic area from paralysis of the sympathetic nervous system is accompanied by corresponding anemia and decompression in the skull, and this is the main mechanism of traumatic, operative, anaphylactic and other shocks, as he sets forth in detail.

Crónica Médica, Lima, Peru

November, 1921, **38**, No. 701

*The Oculocardiac Reflex. D. C. Espino.—p. 345.
Rare Earths in Treatment of Tuberculosis. L. Bardales.—p. 352.

The Oculocardiac Reflex.—Espino recalls that the extensive literature on this subject contains so much that is contradictory that it is difficult to estimate the significance of this reflex. He applied the test to thirty-five inmates of an institution for the insane, each tested three times. In these psychopaths the response to compression of the eyeball was a moderate slowing of the pulse and respiration. This reaction was never intense and in a few instances there was no reaction, or the pulse and respiration were speeded up instead of slowed. The response varied at different times in the same individual, even in the course of the same day. It seems evident, he says, that this and similar sensory stimuli are able to induce a general motor reflex in the vegetative system which enables us to penetrate farther into the No Man's Land of psychoses, neuroses, etc.

December, 1921, **38**, No. 702

*Yellow Fever in Peru. M. Quiros.—p. 381.
*Yellow Fever in Pacasmayo Province. N. E. Cavassa.—p. 401.

Yellow Fever in Peru.—The history of yellow fever in Peru is here brought down to date, and the mode of invasion.

Semana Médica, Buenos Aires

Jan. 12, 1922, **29**, No. 2

*Nomenclature of Dystocia. E. Zarate.—p. 33.
Bismuth in Treatment of Syphilis. J. Nin Posadas.—p. 37. Idem. N. V. Greco.—p. 64.
Present Status of the Vitamin Question. H. Damianovich.—p. 42.
Hospitalization of Tubercle Bacilli Spreaders. Muzio.—p. 57.
Preparation of Pneumococcus Antivaccine. E. Lorentz.—p. 60.
Inguinal Hernia as Industrial Accident. Moreno.—p. 68.
Technic for Making Mineral Cells (Plasmogenesis). A. L. Herrera.—p. 71.

Dystocia.—Zarate calls upon young physicians to study the phenomena of dystocia and suggest a better and more uniform nomenclature. He says that the only form that can be accepted as a pathologic entity is annular dystocia, from stricture of the uterus. This is rare; Gammeltoft found records of only twenty-three cases in 35,000 deliveries at Copenhagen in eighteen years, but the tendency is to ascribe every difficulty in delivery to this stricture. Dystocia from general retraction of the uterus, a constriction of the organ, may occur in septic infection or from toxic changes in the muscular fibers.

Jan. 19, 1922, **29**, No. 3

*Gynecologic Radiotherapy in Argentina. C. A. Castaño.—p. 77.
Oxidase Reaction in Diagnosis of Leukemia. R. G. Cabred.—p. 91.
Bismuth in Treatment of Syphilis. O. Calcagno.—p. 95. Idem. J. Nin Posadas.—p. 100.
Public Health Matters in Northern Argentina. G. Sirlin.—p. 98.
Etiology and Social Prophylaxis of Syphilis in Argentina. J. B. de Quirós.—p. 101.

Radiotherapy in Uterine Disease.—Castaño relates what has been accomplished to date in Argentina with the roentgen rays in treatment of uterine myoma and hemorrhagic metropathies. He gives sketches of the outline of the uterus before and after the treatment in a number of cases from his total 250 cases of fibromas treated in this way in the last seven years. The age of the patient and the size of the tumor are immaterial, but myomas without much fibrous tissue retrogress more readily than hard fibromas. All were cured of the cases selected for radiotherapy. Anemia and heart disease turn the scale in favor of radiotherapy in many cases in which operative measures would be indicated otherwise. The fibromas do not subside unless complete amenorrhea is induced. Radium is preferable for hemorrhagic metropathies on this account, as the exposures can be graduated to induce oligorrhea. The amenorrhea is not accompanied by symptoms of the menopause, which testifies that the ovarian functions otherwise persist: three of the women became pregnant in the midst of the amenorrhea. There is no recurrence of myomas after roentgen treatment as is liable after myomectomy. Before treatment is begun, the condition of the endometrium is ascertained by biopsies, with serial frozen sections in case of doubt, and the minimal sarcoma dose is always given to be on the safe side.

Beiträge zur klinischen Chirurgie, Tübingen

1922, **125**, No. 1

*Operative Treatment of Hydrocephalus. A. Läwen.—p. 1.
*Surgery of the Rectum. E. Eichhoff.—p. 17.
*Mild Hyperfunctioning of the Thyroid. A. Hellwig.—p. 75.
Turtle Tubercle Bacilli Vaccine. H. F. O. Haberland.—p. 117.
*Angiomas in the Brain. Ellen Lechner.—p. 174.
*Benign Stenosis of Papilla of Vater. H. Altemeyer.—p. 195.
Etiology of Schlatter's Disease. W. Altschul.—p. 198.
Nature of Paget's Disease of the Bone. P. Caan.—p. 212.
Fracture of Vertebra from Muscular Traction. G. Wolff.—p. 245.

Operative Treatment of Hydrocephalus.—Läwen reports operations on the choroid plexus of the lateral ventricle, or making an opening through the corpus callosum to relieve internal hydrocephalus. His four cases teach the necessity for only gradually reducing the intracranial pressure. His cases all terminated fatally although experiments on dogs had apparently established the feasibility of fenestration of the corpus callosum, and even of resection of the choroid plexus.

Surgery of the Rectum.—Eichhoff reviews the experiences with 1,021 cases of rectal cancer at the Breslau surgical clinic since 1879. This material emphasizes anew that rectal cancer is seldom discovered until in an advanced stage. In fully 60 per cent. of the inoperable cases the patients had sought medical aid in ample time, but months had been wasted in conservative treatment for the assumed hemorrhoids or catarrhal enteritis before a thorough examination was made. Only 8.5 per cent. of all the patients reached the surgeon in a month after the first symptoms, and the interval was over two years in 12.2 per cent.; it was over three years in 15 and eight years in 1 case. Various tables show the outcome of the operative cases, classified by the method of treatment applied. Long survival is possible with rectal cancer. In 170 operable cases in which an operation was refused, 15 per cent. lived for over two years and one for over five years, but 2 committed suicide during the fifth year. Of the 326 radical operation cases, 79 did not survive the operation. Of the 209 cases traced to date, 28.7 per cent. are still living and in good condition.

Moderate Hyperthyrosis.—Hellwig explains that exophthalmic goiter is the last link in a long chain of phenomena which, with all their manifold and diverse clinical pictures, yet can all be traced to the same cause, excessive secretion in the thyroid. He has been comparing the histologic findings in the thyroid with the clinical symptoms of slight hyperthyrosis, and gives the photomicrograms from ten such cases.

Angioma of the Brain.—Lechner summarizes fifty-six cases from the literature and gives the details of a case in a young man. The tumor was removed but necropsy less than three weeks afterward revealed diffuse meningitis. The angioma was in the right temporal lobe with softening of brain tissue around it. The symptoms had been those of epilepsy.

Benign Stenosis of Papilla of Vater.—Altemeyer describes his success in five of six cases treated by introducing a T drain into the duodenum through the papilla. A sound is introduced first in the common bile duct and worked down to the papilla, and the tip is pushed through a minute incision. A stout silk is tied to the tip of the sound, and the sound is then drawn back. Then one arm of the T drain is tied to the silk and it is thus drawn in. The small arm is pushed into the hepatic duct. The leg of the T drain protrudes from the incision in the common bile duct, and the drain is removed in from one to three weeks as the case requires. The one patient that did not survive succumbed to complications from the liver.

Deutsches Archiv für klinische Medizin, Leipzig

Feb. 21, 1922, **138**, No. 5-6

*Action of Epinephrin on the Circulation. A. Hotz.—p. 257.
Pressure on Walls of Arteries. A. Hotz.—p. 257.
*Interchanges Between Blood and Tissues. J. Baucr and B. Aschner.—p. 270.
*Hyperplasia of Endothelium. E. Goldschmid and S. Isaac.—p. 291.
*Estimation of Urobilin in Excreta. A. Adler.—p. 309.
*Influence of Food on Bilirubin Content. E. C. Meyer and H. Knüpffer.—p. 321.
*Endothelial Cells in Blood Stream. F. O. Hess.—p. 330.
Uric Acid Content of Blood in Kidney Disease. E. Krauss.—p. 340.
*Acute Monocyte Leukemia. Ewald, Frehse and Hennig.—p. 353.
*Test of Bone Marrow Function. M. J. Roessingh.—p. 367.

Action of Epinephrin on the Circulation.—Hotz theorizes to explain the energometric findings under epinephrin. He contends that vasodilation is not the main factor in the phenomena observed.

Influence of Diuretics.—This is the first of a series of studies of the interchange phenomena between the blood and the tissues. Research on the extrarenal factors in the action of diuretics is described here.

Hyperplasia of Endothelium.—Goldschmid and Isaac discuss the proliferation of endothelium as a characteristic of all parts of the blood-producing apparatus in leukemia. A case is described with much detail in a woman of 54, with enlargement of the spleen and liver and severe anemia. Necropsy showed systematic proliferation of the endothelium of the blood-producing apparatus, the reticular portion intact. Slight improvement had followed roentgen exposures of the spleen, but it was only transient. The case was first seen too late for splenectomy to be considered. They report the case as a new type of disease.

Urobilin.—Adler describes a simple technic for estimation of the proportion of urobilin in urine, stools, duodenal juice and blood. He uses the Schlesinger reagent, oxidizing with iodin, and estimating the amount of urobilin in the fluid by the dilution required for the last trace of green fluorescence to disappear.

Bilirubin in the Blood.—Meyer and Knüpffer tested the blood of 194 persons for the bilirubin content. It declined regularly in the normal in from two to five hours after dinner, but began to increase again usually by the eighth hour. The bilirubin content of the blood thus fluctuates up to 100 per cent. even in normal conditions. The tests were made with the diazo reaction. This reaction occurs immediately in the blood of persons with jaundice from stasis, while there is a delay of minutes to hours with normal blood, and the reaction does not occur at all unless alcohol is added. With a damaged liver, the bilirubin content of the blood began to increase at once after eating. The findings in various diseases are compared.

Endothelial Cells in Blood Stream. — Hess states that in eleven cases of endocarditis lenta, he found from 36,800 to 112,000 leukocytes in blood from the ear while blood from the finger never showed more than 3,920 to 7,200. He argues from the data presented that the toxins of *Streptococcus viridans* induce a reaction in the entire endothelial system. It manifests itself mainly in an intense proliferation of cells, with phagocytosis. This may throw light on the thrombosis and embolism in this disease.

Monocyte Leukemia.—Three cases are reported of acute monocyte leukemia with from 4.5 to 8 per cent. myeloblasts, *stammzellen.*

The Bone Marrow in Anemia.—Roessingh presents evidence to sustain his assertion that it is possible to estimate the functional capacity of the blood-producing apparatus by determination of the amount of oxygen consumed and by the response to vital staining. Determination of the consumption of oxygen is a tedious procedure, but the vital stain method is simple and easy. He has applied both in large numbers of the sick and well, and declares that the findings are a reliable index of the erythrocyte-producing power of the bone marrow. The blood is drawn from the finger, 5 drops, directly into the stain. For this he added to 2 c.c. of a 1.5 per cent. solution of potassium oxalate in 0.9 per cent. saline, 10 drops of Unna's polychrome methylene blue. After ten minutes he centrifuged, and in the dry sediment examined the reticulation *(tüpfelung)* of the erythrocytes. In 30 normal persons, from 0.4 to 1.8 per cent. of the erythrocytes were skeined or reticulated. The average in 7 cases was 4.8 per cent. in the blood from the umbilical vein. In 2 cases of myxedema with anemia after thyroid treatment, the figures were 4.6 and 4.2 per cent. In the few tuberculous subjects examined it was normal in 2.8 per cent. In some cases of septicemia the figure averaged 12 per cent. In some cases of chloro-anemia, the improvement was reflected in the rise from 0.8 or 0.9 to 2.4 and 11.3 under three or four weeks of treatment. The figures in a case of hemolytic jaundice were 1.8; nine days after splenectomy, 5.7 and at the fiftieth day, 14.8 per cent. In some cases of pernicious anemia treated by transfusion of blood, the figure had risen in five or seven weeks from 2 to 7.5 per cent. and from 7.2 to 8.6 per cent. The oxygen consumption and the vital *tüpfelung* do not alway fluctuate parallel.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1922, **168**, No. 1-2

*Supernumerary Testicles. A. Haas.—p. 1.
*Bone Changes in Neurofibromatosis. E. Stahnke.—p. 6.
*Intrapelvic Protrusion of Acetabulum. J. B. Waller.—p. 19.
*Luxation with Tuberculous Hip Joint Disease. A. Lehrnbecher.—p. 37.
*Sliding Hernia. R. Demel.—p. 51.
Hexamethylenamin Intravenously in Septicemia. Buzello.—p. 61.
*Operation for Femoral Hernia. K. Reschke.—p. 91.
Anilin Dyes in Surgery. E. Hoffmann.—p. 101.
*Bile Peritonitis. F. Wagner.—p. 116.
Tendon Plastics for the Thumb. J. Nicolaysen.—p. 133.
Lengthening the Long Bones in Arthritis Deformans in the Young. K. Reschke.—p. 136.

Supernumerary Testicles.—Haas reports that in operating on a boy of 9 for bilateral inguinal hernia and undescended testicles, he found a supernumerary testicle on the left side. With one exception, the supernumerary testicle was on the left side in all the six similar cases he has found on record.

Bone Changes with Neurofibromatosis. — Stahnke is convinced that the bone changes found with neurofibromatosis are not a mere casual coincidence but form parts of the actual clinical picture. They imprint a congenital stamp on it besides, demonstrating that neurofibromatosis must be accepted as a malformation in the wider sense.

Intrapelvic Protrusion of Acetabulum.—Waller has been able to find only fifteen cases of the Otto-Chrobak pelvis on record, and adds another to the list. The protrusion is usually fully developed by the age of 20, but causes little or no disturbance under ordinary conditions. In his case the protrusion was bilateral, but a fall had ruptured the acetabulum on one side. The acetabulum on the other side was merely exceptionally deep, the protruding pelvic surface smooth. The abnormal protrusion exposes it to injury from trauma. The Otto-Chrobak pelvis is thus primarily merely an unusually deep acetabulum; the destructive process is secondary.

Spontaneous Luxation of Tuberculous Hip Joint.—The luxation was bilateral in the boy of 7, and osteomyelitis had been diagnosed until tubercle bacilli were discovered in the pus from a deep abscess in the thigh. By a radical operation on each hip joint, removing the sequesters left from the tuberculous coxitis and all other morbid tissue, the florid process was arrested. The right hip joint is entirely stiff, but the left joint can be moved a little. The result is regarded as satisfactory, considering the severity of the case.

Sliding Hernia.—Demel says that about 1.2 per cent. of all inguinal and femoral hernias are of the sliding hernia type. Resection of the large intestine is seldom necessary. This was responsible for the mortality of 2.8 per cent. of the total 501 cases he has compiled. A typical case is described.

Femoral Hernia.—Reschke has been reexamining 170 patients with femoral hernia treated by Kummer's method some years ago, and all were permanently cured except 3.5 per cent. in whom the hernia had recurred. In 35 and in 29 cases treated by other methods, recurrence followed in 28.5 and 13.8 per cent. There have been 560 cases of femoral hernia at the Greifswald surgical clinic in twenty years, and there was incarceration in 322 of them. The conditions were gravest in the cases in which taxis had been attempted. With the Kummer technic, a U silk suture is taken, the needle passed first through the muscles above or below the inguinal canal, and in front of the peritoneum out through Cooper's ligament, along the bone and out through the femoral canal. It is threaded with silk and drawn back, and is then passed again through the tissues to emerge in Cooper's ligament close to Gimbernat's ligament, and is threaded with the other end of the silk. When the ends are tied, the entire femoral canal is firmly closed by the abdominal tissue thus pulled over it. Fine silk doubled is preferable.

Bile Peritonitis.—One of Wagner's three cases sustains the view that perforation of the noninfected gallbladder runs a benign course. Actual diapedesis is rare, but undoubtedly occurs. Several factors are involved, including obstruction of the cystic duct, pathologic conditions in the gallbladder wall, and possibly some pancreatic juice action.

Monatsschrift für Kinderheilkunde, Leipzig

December, 1921, **22**, No. 3

Panniculus Adiposus in Relation to the Nutritional Condition of Children. G. Kuntze.—p. 449.
*The Spleen in Injections of Epinephrin and Sodium Nucleinate. H. Beumer and H. Hellwig.—p. 457.
Atypical Pertussis and Bacteriologic Diagnosis. Thiemann.—p. 471.
Epidemic Encephalitis in Children. M. Bardach.—p. 475.
*The Chvostek Sign in Schoolchildren. A. Schultze.—p. 484.
*A Study on Antibodies in Human Milk. G. Petényi.—p. 486.

Significance of the Spleen in Injection of Epinephrin and Sodium Nucleinate.—Beumer and Hellwig report that extirpation of the spleen was found to have no effect on the lymphocytosis and polynuclear leukocytosis which follow injection of epinephrin or of sodium nucleinate in rabbits.

Significance of the Chvostek Sign in Schoolchildren.—Schultze examined 1,648 boys and girls in two urban and two rural schools, and the Chvostek sign was found in 8.4 per cent. Of the 139 positive Chvostek cases, 127 were examined with respect to electric hyperexcitability, which was found to exist in 58 per cent. By examining into the histories of those that did not present electric hyperexcitability, from the standpoint of early convulsions in the subjects themselves or in other members of the family, he found that more than two thirds of the schoolchildren with a positive Chvostek sign could be regarded as spasmophilic, and two thirds of them were underdeveloped physically. From the mental and intellectual point of view there were only 39 children out of 178 that could be regarded as absolutely normal. Mechanical hyperexcitability was not so frequent in the girls as in the boys. He found among 40 of the mothers a positive Chvostek sign in 16.

Measles Antibodies in Human Milk.—Petényi refers to the generally accepted view that young infants are not susceptible to measles infection. According to Pirquet this is due to an immunity inherited from the mother. This immunity, Pirquet holds, is so intense during the first two months after birth that no measles infection ever occurs; after that, during the first year, the immunity is sufficient to protect some infants while in others the infection appears, but in attenuated form. Pirquet's chief argument that the immunity of infants is inherited from the mother lies in the fact that during the epidemic, in 1882, in Iceland, where, for a previous period of thirty-six years, there had been no cases of measles, young infants showed no immunity but took the disease as readily as older children and adults. Schultze had frequently observed that in a ward in which there were both breast-fed and artificially fed infants, after a case of measles, all those that were artificially fed took the disease while the breast-fed infants escaped. He tried, therefore, this experiment: After a measles case had developed in a ward, and many infants had been exposed, he gave the older, artificially fed infants, that had never had measles, subcutaneous injections of human milk or colostrum. The 4 breast-fed infants all escaped infection; of the 10 artificially fed infants, only 3 took the disease, although they were all repeatedly exposed. He holds that these observations show that in human milk (or colostrum) there is a substance which, if injected parenterally, will prevent the development of a measles infection. He thinks that his experiment might have been even more successful if he had used larger quantities.

Therapeutische Halbmonatshefte, Berlin

Nov. 15, 1921, **35**, No. 22

Digitalis Preparations. W. Wiechowski.—p. 681.
Treatment of Meningeal Syphilis. W. Gennerich.—p. 690.
Effect of Intravenous Injections of Glucose on Cardiac Activity and Diuresis. S. Isaac.—p. 698.
Need of Moderate-Priced Sanatoriums. W. Unger.—p. 702.

Dec. 15, 1921, **35**, No. 24

Calcium in Cardiac Therapy. G. Singer.—p. 758.
*War Diet as a Cause of Disease. E. Reiss.—p. 765.
*Therapy and Prophylaxis of Puerperal Fever. Dietrich.—p. 772.
Treatment of Polycythemia. J. Strasburger.—p. 777.

The Low Stimulating Power of the War Diet as a Cause of Disease.—Reiss describes at considerable length the pathologic manifestations he found in the gastro-intestinal tract, the blood, the blood vessels and the heart of persons who, during the war, were inadequately nourished, many of which symptoms, such as gastric hypacidity, for example, could not, he argues, have been due to a lack of calories or even of vitamins but most likely were due to a third peculiarity of the war diet; namely, its low stimulating power, which is closely connected with its unpalatability. He admits the possibility that certain vitamins whose action is as yet unknown were responsible for these manifestations, but he is more inclined to ascribe them to the lack of the normal psychic and reflex actions that are brought about by a varied, healthful diet.

Therapy and Prophylaxis of Puerperal Fever.—Dietrich rejoices over the stupendous reduction in the morbidity and mortality percentage of puerperal fever in recent decades, but holds that with a 1 per cent. morbidity and a 0.3 per cent. mortality for the German empire (20,000 cases and 6,000 deaths each year, approximately) it behooves us to exercise even greater care in disinfecting the hands, the wearing of gloves, and the use of all other precautions, in order that the morbidity and mortality may be still further reduced.

Wiener klinische Wochenschrift, Vienna

Jan. 19, 1922, **35**, No. 3

Internal Antisepsis. L. Hess and R. Reitler.—p. 49.
*Direct Massage of the Heart. Amreich.—p. 50.
Demonstration of Occult Blood and Tubercle Bacilli in Stools. W. Loll.—p. 51.

Nature of the Bacteriophagic Virus. T. Watanabe.—p. 53.
Modified Method of Injecting Tuberculin in Tuberculous Disease of the Skin. M. Strassberg.—p. 54.
Leukocyte Count in Epidemic Encephalitis. R. Huss.—p. 55.
Epidemic Tertian Malaria in Russian Prison Camps. A. Belai.—p. 57.
Length of Intestine and Sitting Height. B. Schick.—p. 58.
Treatment of Bilharziasis with Emetin. M. Mayer.—p. 59. Reply. Tsykalas.—p. 60.

Direct Massage of the Heart.—In Amreich's case, the collapse had occurred under sacral anesthesia. The operation on the adnexa of the young woman had only been begun when the heart stopped beating. No effect was apparent from six minutes of artificial respiration, oxygen, injection of epinephrin into and massage of the heart through the skin, so the heart was then exposed by Kocher's method. This took about three minutes, and then, with four fingers introduced back of the heart, it was pressed gently and rhythmically against the back of the sternum. After six minutes of this, and another injection of epinephrin into the left ventricle, the heart began to pulsate vigorously, 120 times a minute. This kept up for three quarters of an hour, but then the heart action grew weak. There had been no spontaneous respiration at any time and no recovery of consciousness. The direct massage was applied again, and the radial pulse again became perceptible. As there was no sign of spontaneous revival of the heart action after fifteen minutes, he abandoned the attempt. Necropsy showed that the anterior flap of the mitral valve had been torn from its root. He warns that forcible massage, trying to pump the blood along, is not the aim of this direct massage. It is only for a gentle stimulus to start spontaneous contractions.

Jan. 26, 1922, **35**, No. 4

The Practical Significance of the Habitus, and the Revival of Humoral Pathology as a Therapeutic Deduction from the Constitution Theory. B. Aschner.—p. 73. Conc'n No. 5, p. 107.
Clinical Aspects of Asthenic Pneumonia in Infants. Nobel.—p. 79.
Technic of the Sachs-Georgi Test. N. Frank.—p. 81.
Rhythmic Closure of the Pylorus. T. Bársony.—p. 82.
Clinical Use of the Ambard-Hallion Ureometer. W. Nyiri.—p. 83.
Technic of Perineural Injections in Sciatica. Grünbaum.—p. 84.

Zentralblatt für Chirurgie, Leipzig

Dec. 10, 1922, **48**, No. 49

No Sensory Fibers in Anterior Spinal Roots. Meyer.—p. 1790.
A Case of Bilateral Harelip. G. Mertens.—p. 1794.
Hemostasis in Bergmann Hydrocele Operation. Jungbluth.—p. 1795.
Fascia Implant to Correct Respiratory Sinking in of Nasal Wings. Boecker.—p. 1796.
So-Called Bayonet Forceps. G. Schmidt.—p. 1797.
Local Anesthesia in Operations on Neck. L. Drüner.—p. 1798.

Dec. 17, 1921, **48**, No. 50

Agglutination of Own Blood Corpuscles as Test for Active Tuberculosis. H. Kümmell, Jr.—p. 1822.
*Locating Brain Tumors in Trephining Operation. Meyer.—p. 1824.
*Determination of Electrical Resistance in Brain. Schlüter.—p. 1827.
Technic of Gastric Operations. O. Orth.—p. 1828.
*Furunculosis of Axilla. L. Heidenhain.—p. 1831.

Locating of Brain Tumors After Trephining by Determination of Electrical Resistance.—Meyer having found palpation, puncture and percussion inadequate for the localization of brain tumors, decided to investigate the relative electrical conductivity of normal brain tissue and brain tumors, with the idea that possibly the brain, being richer in fat, would show greater electrical resistance than a brain tumor. In collaboration with Dr. Schlüter, he made researches on fresh brain and brain tumor material from a cadaver, and discovered that there is a very marked difference in the electrical conductivity of the normal brain and of brain tumors. He found that the cerebrum at a given distance and with electrodes of a given size showed a resistance of about 550 and the cerebellum a resistance of about 650 ohms, whereas the brain tumor (a gliosarcoma) had an electrical resistance of only 200 ohms; cerebral fluid and physiologic sodium chlorid solution, a resistance of 35 ohms, and the blood, of 150 ohms. Experiments on a living cat brain revealed the same differences that had been found in the human cadaver. The insertion of the electrode into the living cat brain caused no injuries. The first trial on a human subject was made, June 5, 1921, since which time no further brain tumor cases have come to operation, but, since the results of the single trial were so favorable, he concluded to publish this preliminary report. Enderlen performed the trephining operation, and, after laying bare the dura at the site designated by the neurologist, punctured the supposed tumor. In a few seconds Schlüter measured the electrical resistance of the tumor, which proved to be 260 ohms, whereas the resistance of the brain was 660 ohms, thus disclosing the same marked differences in the living human brain that had been previously found in the cadaver. After the gliosarcoma had been removed, its electrical resistance was the same as when in the living body. No disturbances were observed as the result of the determination of the electrical resistance in the living subject.

Apparatus for the Determination of the Electrical Resistance in the Brain.—Schlüter describes in detail the apparatus employed in determining the relative electrical resistance of the normal brain and a brain tumor, an account of which is given in the preceding abstract.

Roentgen-Ray Treatment of Furunculosis of the Axilla.—Heidenhain refers to the statement of Brunzel and Bockenheimer that in resistant cases of furunculosis of the axilla they extirpate all the diseased skin and treat the defect plastically. He does not think that so radical intervention is necessary. During the last six years he has treated all cases of furunculosis of the axilla, even though severe, with roentgen irradiation. Overdosage must be carefully avoided. Barely a third of an ordinary erythema dose is sufficient. He uses a 3 mm. aluminum filter and irradiates a large field. If there are any abscesses in the area, they must be opened. The furunculosis has usually healed at the end of a week. He then gives the same dose as at first. Recovery has always resulted and there have been no recurrences.

Zentralblatt für Gynäkologie, Leipzig

Dec. 10, 1921, **45**, No. 49

Nomenclature of Kidney Affections in Pregnancy. Kautsky.—p. 1765.
Pathologic and Clinical Aspects of Kidney Affections in Pregnancy. V. Hiess and M. Beckman.—p. 1773.
Temporary Resection of the Pubic Symphysis in Extirpation of Cancer of the Urethra. P. Graf.—p. 1777.
*Prophylaxis of Postoperative Retention of Urine. E. Vogt.—p. 1781.
Operative Treatment for Incontinence of Urine. Hisgen.—p. 1783.
Cystoscopy in an Air-Filled Bladder. G. Linzenmeier.—p. 1786.
Atresia Vaginae Puerperalis; Dilatatio Urethrae e Coitu. C. Stanca.—p. 1788.

Dec. 17, 1921, **45**, No. 50

More Light on the Eclampsia Problem. J. Hofbauer.—p. 1797.
Etiology and Treatment of Eclampsia. W. Liepmann.—p. 1810.
Effect of Diet on Eclampsia as Revealed by the Statistics of Baden During and After the War. W. Gessner.—p. 1814.
Peculiar Case of Complete Laceration of Perineum. Wiegels.—p. 1818.

Intravenous Injections of Hexamethylenamin to Combat Postoperative Retention of Urine.—Vogt has found intravenous injections of hexamethylenamin, 5 c.c. of a 40 per cent. solution given the evening of the day of operation, a simple, harmless and certain method of combating dysuria and retention of urine, following operations on the genito-urinary apparatus; also to ward off postoperative cystitis or cystopyelitis. There have been no failures out of more than 200 cases, and there were no unpleasant after-effects.

Zentralblatt für innere Medizin, Leipzig

Dec. 10, 1921, **42**, No. 49

*Stuttering in Relation to Asthma. W. Sternberg.—p. 946.

Dec. 17, 1921, **42**, No. 50

Colloid Content of Human Urine. Pribram and Eigenberger.—p. 961.

Stuttering in Relation to Asthma.—Sternberg states that clinically the functional disturbances of the stutterer when speaking and of the asthma patient when breathing show much similarity. In both cases the functional disturbances appear in the expiratory phase, in acute attacks in the stutterer and in less acute in the asthma patient, so that it almost seems as if the cumulative effect of some exciting cause were at work. There are mechanical, physiologic difficulties that confront the stutterer when he endeavors to speak during the expiratory phase, and the asthmatic patient must also overcome certain mechanical difficulties during expiration. Certain forms of stuttering, in fact, may be regarded as incomplete types of asthma.

Mededeel. v. d. Burg. Geneesk. Dienst, Java

1921, No. 3. Parallel English-Dutch Edition

*Epidemiologic Observations on Plague. P. C. Flu.—p. 139.
Survival of Typhoid Germs in Septic Tanks. P. C. Flu.—p. 179.
Autopurification of Water in Large Reservoirs Exposed to Sun. P. C. Flu.—p. 189.
Duration of Life of Cholera Vibriones and Typhoid Bacteria in Sea Water. P. C. Flu.—p. 207.
*Filariasis in Java. P. C. Flu.—p. 221.
Chemical Deratization. J. van Slooten.—p. 255.

Plague.—Flu's extensive experiments on measures for prevention of plague demonstrated that the rat fleas escape the action of sulphur by burying themselves in the sand or otherwise, but the sulphur drives the rats out of their hiding places and, if they are unable to escape, they die from the fumes. He urges that warehouses should be built so that in case any one part becomes infected, this can be disinfected.

Filariasis in Java.—Flu's study was restricted to the native populace of the town of Weltevreden.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 21, 1922, **1**, No. 3

*Consequences of Ligation of Vas Deferens. T. J. de Vrieze.—p. 266.
*The Voice After Resection of Vocal Cord. H. Burger.—p. 282.
Removal of Foreign Bodies from Trachea. H. J. L. Struycken.—p. 289.
*Cod Liver Oil as Vehicle for Benzyl Benzoate. W. S. Stekhoven.—p. 291.
*Meningococcus Septicemia. P. H. Kramer.—p. 293.
Sympathetic Ophthalmia as Industrial Accident. D. N. van Gelderen.—p. 298.

Consequences of Ligation of the Vas Deferens.—De Vrieze reports what he thinks is the first necropsy after ligation of the vasa deferentia since Steinach's publications in this line. His patient was a man of 63 with hypertrophied prostate and hydronephrosis, with urosepsis, fatal three weeks after the vasectomy. The hydronephrosis had not been diagnosed during life, the symptoms having been ascribed to assumed cancer at the hepatic flexure. Treatment therefore had been on an erroneous basis. The vasectomy was done as a preliminary to prostatectomy, but no influence on the prostate had been noted. There did not seem to be any consequences from the vasectomy in any way, good or bad, confirming the harmlessness of the measure. The endocrine organs seemed to be intact. There was no increase in the interstitial cells but the vas epididymidis had enlarged after the vasectomy. As there probably had been no spermatogenesis in this case for some time, this enlargement of the epididymis suggests that the testicle still has some secretion to pass along, even when there are no spermatozoa. The case is illustrated.

The Voice After Resection of a Vocal Cord.—In three of Burger's four cases the tissues grew to form a new vocal cord. This approximated normal the more closely, the more radical the operation on the side wall of the throat, thus giving Nature a free rein. The diagnosis of malignant tumor was beyond question, and the operation was done through a slit in the thyroid cartilage. No attempt was made to suture this afterward. The voice is good in all but one who still is hoarse. The voice is very much better than in other cases in which merely the growth itself was resected and the rest of the vocal cord left. The repair after this is much less perfect. In one of his cases the repair was so perfect that in examining with the laryngoscope a year later, there was some doubt as to the operated side.

Vehicle for Benzyl Benzoate.—Stekhoven calls attention to the advantages of cod liver oil as a solvent for benzyl benzoate, which, he remarks, was the fashionable drug in 1921.

Meningococcus Septicemia.—In the case reported by Kramer, the meningococcus septicemia had dragged along for seven weeks with fever, eruptions, purpura and multiple arthritis, before meningitis developed. The young man finally recovered after a nearly four months' course of the infection.

Jan. 28, 1922, **1**, No. 4

*Treatment of Acute Infectious Processes. A. van Balen.—p. 362.
*Rat Fleas and the Plague in Europe. B. Hylkema.—p. 375.
*Eruptive Fever with Unusual Characteristics in Children. W. Naessens.—p. 393.
*Osteomyelitis in Foot and Clavicle. W. C. van der Linden.—p. 396.
Case of Barbital Poisoning. J. W. M. Indemans.—p. 397.

Local Venesection in Treatment of Acute Inflammatory Processes.—Van Balen quotes Donders' saying, "Woe to the therapy that is based on anything but direct experience." He argues that direct experience has confirmed the advantages of drawing blood from an acute infectious process, and discusses the reasons why venesection has been so neglected in the last fifty years. He ascribes the benefit from Bier's suction glasses mainly to the blood which they aspirate from the inflamed tissues. A number of cases of acute inflammatory processes are described in which pain was relieved at once for several hours, and resorption and healing promoted by an incision near by, releasing blood, or by the suction glass. In a case of very painful peritonsillitis with difficulty in swallowing, he aspirated blood from the skin below the jaw, relieving the symptoms materially in ten minutes, this effect keeping up for four hours. Acute edema of the lids subsided under local blood letting as also a tendon sheath abscess on a finger, after blood had been drawn from the palm. The benefit from the local blood letting was particularly striking in three cases of mastitis, and in cases of furuncles in the neck, lymphangitis. It is remarkable, he adds in conclusion, that the advantages of local blood letting in every acute infectious process have not been recognized hitherto. Only by going back to the literature of a hundred years ago do we find it advocated in treatment of congestions and inflammations. Venesection was applied then to excess, and this abuse of it led to its practically complete banishment from minor surgery. He thus does not hesitate to entitle his article "A New Treatment for Acute Infectious Processes."

Plague in Europe and the Rat Flea.—Hylkema warns that in Europe rats come in contact with human beings less than in the tropics, and consequently the fight must be against the infected fleas rather than against the rats. Plague in Europe is more a man-flea-man disease, after the first cases. Human cases of plague should be regarded as a warning of the presence of infected fleas. The main thing is to seek out and recognize the cases early; this is at least as important as seeking for infected rats on ships and in harbors as a sign of the importation of the disease. To prevent the spreading of the disease by the fleas requires measures beyond merely deratization.

Eruptive Fever with Unusual Characteristics in Children.—Naessens reports three cases in young children which seemed to be identical with those described by Levy, Veeder and Hempelmann in The Journal, Dec. 3, 1921, p. 1785 and p. 1787.

Osteomyelitis with Unusual Location.—In the first of Linden's two cases the acute primary osteomyelitis was in the scaphoid bone of the foot, which was cast off as a sequester. In the other, it was in the sternoclavicular articulation.

Acta Medica Scandinavica, Stockholm

1921, Supplement 2

The Elasticity of the Vessel Walls and Means for Testing It. O. P. Reuterwall.—pp. 1-176.

Finska Läkaresällskapets Handlingar, Helsingfors

January-February, 1922, **64**, No. 1-2

*Internal Secretions in Undernourishment. T. W. Tallqvist.—p. 1.
*Pathogenesis of Arteriosclerosis. W. Kerppola.—p. 18.
*Phlegmonous Gastritis. T. Sandelin.—p. 37.
*Colloidal Gold Reaction in Neurosyphilis. G. Jansson.—p. 44.
*Paget's Disease of Nipple. A. Cedercreutz.—p. 58.
Backward Subluxation of Cataract. V. Grönholm.—p. 64.
*Sarcoma of Skull. H. Bardy.—p. 68.

The Internal Secretions During Undernourishment.—Tallqvist discusses the tendency to edema from undernourishment, saying that it was observed during the Napoleon campaign in Russia, and the Boer War. It first appeared in Finland in 1918, and was quite prevalent in 1919 in the cities, especially in the prisons, but then it disappeared as food conditions improved. On the other hand, exophthalmic goiter and diabetes mellitus became very rare during the war undernourishment period. Both of these, he recalls, have a typical pathologic hormone basis. Undernourishment reduces production of hormones. The organ extract business in Germany had to be abandoned during the war, as the underfed animals could not supply any epinephrin or other active gland principle. The endocrine glands seem to be especially sensitive to underfeeding. The diseases which are traceable to excessive endocrine functioning became comparatively rare during the undernourishment period of the war. His charts show a remarkable parallelism between the declining incidence of exophthalmic goiter and diabetes in his own service and private practice, while gastric achylia ran up to a high peak during the undernourished years. There is no doubt that both constitutional and occasional factors cooperate in these two diseases, but no one heretofore, he remarks, has appreciated the importance of relative overnourishment as a factor in exophthalmic goiter, although this has long been recognized in diabetes. The compulsory undernourishment of the war averted certain factors, and thus preserved the constitutionally predisposed from the development of the disease.

Arteriosclerosis.—Kerppola's article is a special study of the pathologic histology, etiology and pathogenesis of arteriosclerosis, and its occurrence with syphilitic arteritis.

Phlegmonous Gastritis.—In the first of Sandelin's two cases, both microscopic cancer and phlegmonous gastritis were found in the stomach of the woman of 57. Streptococci were cultivated in pure cultures from the stomach wall. In the other case the diagnosis had been diffuse peritonitis of unknown origin in the previously healthy woman of 44. She died the eighth day from the first symptoms. An ulcerating carcinoma was discovered in seven of the 215 cases of phlegmonous gastritis on record. The onset is very sudden and stormy, and vomiting is a constant symptom, as also intense abdominal pains. The clinical picture is like that of a perforated ulcer. Peritonitis accompanied the gastritis in 65 per cent. of the cases. Death has been known a few hours after the onset; in other cases the course may last for two weeks. He resected the stomach in his first case, and there are a very few instances of recovery under operative measures. In these cases there were circumscribed abscesses which could be excised. The possibility of this justifies intervention, as the mortality to date of phlegmonous gastritis is 92 per cent.

The Colloidal Gold Reaction in the Spinal Fluid.—Jansson's conclusion from his extensive experience with this test is that when it is negative we can confidently exclude neurosyphilis from consideration.

Some Dermatologic Notes.—Cedercreutz gives an illustrated description of a case of Duhring's herpetiform dermatitis; one of severe bromoderma of the legs, and 2 of Paget's disease of the nipple involving the lower abdomen as well. Satani had compiled in 1920 over thirty extramammary cases. Treatment must be operative, as a rule, although the extensive lesions in one of his cases healed under local measures alone. Some insist that if the affection heals, the diagnosis had been incorrect, but Darier declares that any soothing dressing will relieve the inflammation, and may induce superficial healing.

Sarcoma of the Skull.—A complete cure seems to have followed the removal of a sarcoma on the frontal-parietal bones of the woman of 57. The dura was adherent and was resected with it, and the gap closed with a plastic operation. The tumor was as large as the woman's fist, but there had been no brain symptoms. There is still a minute fistula.

Hospitalstidende, Copenhagen

Jan. 18, 1922, **65**, No. 3

*Plastic Operation on Postoperative Hernia. O. Ramlau-Hansen.—p. 34.
Present Status of Phototherapy and Heliotherapy in Pulmonary Tuberculosis. Holten.—p. 40. Conc'n.

Plastic Correction of Ventral Hernia.—Ramlau-Hansen refers to postoperative hernia, reporting a case of extensive ventral hernia after suppurating appendicitis in a young man. He mobilized the sartorius muscle, sutured its point of attachment to the sheath of the rectus, and spread the proximal portion over the hernial opening, after reducing this to the smallest size possible.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1922, **83**, No. 3

*Embolic Gangrene of the Extremities. P. Bull.—p. 137.
*Sources of Embolism. P. Bull.—p. 171.
*Acute Tuberculous Peritonitis. E. Dahl.—p. 192.

Embolism and Embolic Gangrene.—A similar article by Bull was summarized in The Journal, March 18, 1922, p. 855. He had to amputate both thighs in less than a year in one of the eight cases he reports, but the man is in comparatively good health and has married since.

Acute Tuberculous Peritonitis.—Dahl relates that the onset was acute in 8 of the 28 cases of tuberculous peritonitis at the Rikshospital in the last fifteen years. The acute symptoms can be explained by the softening of some tuberculous gland, thus suddenly flooding the peritoneum with infectious material. He operated in all these cases, and a complete cure was realized in 3, confirmed by reexamination 15, 8 and 8 years later. One died the second month; the others are in good condition. The laparotomy had been done on the diagnosis of appendicitis in nearly all these cases. Whether to ascribe the favorable outcome to the laparotomy or whether the patients would have recovered spontaneously it is impossible to say, but the chances, he thinks, are in favor of the laparotomy.

Ugeskrift for Læger, Copenhagen

Feb. 9, 1920, **84**, No. 6

*The Capillary Blood. C. Lundsgaard and E. Møller.—p. 167.
Protecting Devices in Radiologic Clinics. O. Wissing.—p. 177.
Morphin Poisoning of Five Weeks' Infant. V. Erlendsson.—p. 190.

Oxygen Content of Capillary Blood.—The research reported confirms the assumption that the oxygen content of the blood in the capillaries is the same as in the arterial blood. During repose and during exercise, in the sick and in the well, the oxygen content of the arterial blood and the capillary blood was found practically the same in all the persons tested. The same similarity is probably the rule for the other constituents of arterial and capillary blood.

Feb. 16, 1922, **84**, No. 7

*Standardization of Hemoglobinometry. H. C. Gram.—p. 215.
*Alimentary Glycosuria. J. E. Holst.—p. 224.
Metal Nipple Shields. E. Hauch.—p. 234.

Standardization of Hemoglobinometer Findings.—Gram remarks that in no other point of clinical medicine is there so much confusion in terms as in the estimation of the hemoglobin in the blood. It is expressed by a percentage of the normal, but there is no uniformity in the estimation of the normal. The sexes vary by 10 per cent. Colorimeters can be standardized by taking the average of a large number of healthy persons, or by comparing with a certain standard instrument, but the best method is to ascertain the iron content of the hemoglobin, its absorption of light in the spectrophotometer, and its capacity for taking up oxygen. The latter seems to be most promising, he says, especially by van Slyke's technic, adding that the ferricyanid method gives too low values. An oxygen capacity of 18.5 per cent. can be regarded as corresponding to 100 per cent. hemoglobin and about 5 millions of normal erythrocytes, which gives the color index as 1 and the cell volume as 43 per cent.

Alimentary Glycosuria.—Holst found that glycosuria developed after ingestion of a certain amount of sugar in 31 of 159 persons all free from diabetes, including 14 healthy persons. In 2 of the subjects the glycosuria reached 1 per cent. Salicylic medication and fever did not seem to modify the response. The 31 positive findings were in 6 of the 20 cases with lung or pleural affections; 8 in the 28 rheumatism, sciatica and lumbago cases; 4 in the 16 brain or nervous affections; 1 each in the 16 dyspepsia cases, 17 of acute infectious disease, 2 of gallstones, 3 of goiter, and once in the one case of eczema, fracture, epidemic encephalitis or syphilis in a pregnant woman, and in 2 of the 14 healthy subjects. Gynecologic and surgical tuberculosis cases, heart disease, sepsis and pernicious anemia gave constantly negative findings. That the carbohydrate metabolism is defective is evident from the rise in the blood sugar content which accompanied the glycosuria. In 2 of the cases the power of assimilating sugar was as low as we see it in diabetes.

THE ST. LOUIS SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-THIRD ANNUAL SESSION
ST. LOUIS, MAY 22-26, 1922

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-third annual session of the American Medical Association will be held in St. Louis, Mo., May 22-26, 1922.

The House of Delegates will convene at 10 a. m., Monday, May 22. In the House the representation of the various constituent associations for 1922 is as follows:

Alabama	2
Arizona	1
Arkansas	2
California	4
Colorado	2
Connecticut	2
Delaware	1
District of Columbia	1
Florida	1
Georgia	2
Idaho	1
Illinois	9
Indiana	3
Iowa	3
Kansas	2
Kentucky	3
Louisiana	2
Maine	1
Maryland	2
Massachusetts	5
Michigan	4
Minnesota	2
Mississippi	2
Missouri	4
Montana	1
Nebraska	2
Nevada	1
New Hampshire	1
New Jersey	3
New Mexico	1
New York	11
North Carolina	2
North Dakota	1
Ohio	6
Oklahoma	2
Oregon	1
Pennsylvania	9
Rhode Island	1
South Carolina	1
South Dakota	1
Tennessee	3
Texas	5
Utah	1
Vermont	1
Virginia	3
Washington	2
West Virginia	2
Wisconsin	3
Wyoming	1
Alaska	1
Canal Zone	1
Hawaii	1
Philippine Islands	1
Porto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8:30 p. m., Tuesday, May 23. The Sections will meet Wednesday, Thursday, and Friday, May 24, 25 and 26, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON

Surgery, General and Abdominal.
Ophthalmology.
Diseases of Children.
Pharmacology and Therapeutics.
Nervous and Mental Diseases.
Dermatology and Syphilology.
Preventive Medicine and Public Health.
Miscellaneous Topics.

CONVENING AT 2 P. M. THE SECTIONS ON

Practice of Medicine.
Obstetrics, Gynecology and Abdominal Surgery.
Laryngology, Otology and Rhinology.
Pathology and Physiology.
Stomatology.
Urology.
Orthopedic Surgery.
Gastro-Enterology and Proctology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, May 22, 23, 24 and 25, and from 8:30 a. m. to 12 noon, on Friday, May 26.

Hubert Work, President.
Frederick C. Warnshuis, Speaker, House of Delegates.
Alexander R. Craig, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members (indicated by *) who have reported to The Journal in time to be included:

STATE DELEGATES

ALABAMA
S. W. Welch, Montgomery.
J. D. Heacock, Birmingham.

ARIZONA
John W. Flinn, Prescott.

ARKANSAS
George S. Brown, Conway
William R. Bathurst, Little Rock.

CALIFORNIA
Albert Soiland, Los Angeles.
H. Bert Ellis, Los Angeles.
John H. Graves, San Francisco.

COLORADO
W. A. Jayne, Denver.
*L. H. McKinnie, Colorado Spgs.

CONNECTICUT
Walter Ralph Steiner, Hartford.
*John Edward Lane, New Haven.

DELAWARE
H. J. Stubbs, Wilmington.

DISTRICT OF COLUMBIA
*Wm. Gerry Morgan, Washington.

FLORIDA
John S. Helms, Tampa.

GEORGIA
W. C. Lyle, Atlanta.

IDAHO

ILLINOIS
J. W. Van Derslice, Oak Park.
C. E. Humiston, Chicago.
R. L. Green, Peoria.
H. P. Beirne, Quincy.

INDIANA
J. Rilus Eastman, Indianapolis.
*Albert E. Bulson, Jr. Fort Wayne.
*George F. Keiper, Lafayette.

IOWA
J. C. Rockafellow, Des Moines.

KANSAS

KENTUCKY
W. W. Richmond, Clinton.
L. S. McMurtry, Louisville.
Irvin Abell, Louisville.

LOUISIANA
W. H. Seemann, New Orleans.

MAINE
*Bertram L. Bryant, Bangor.

MARYLAND
T. S. Cullen, Baltimore.
*Randolph Winslow, Baltimore.

MASSACHUSETTS
H. G. Stetson, Greenfield.
C. E. Mongan, Somerville.
J. F. Burnham, Lawrence.
*F. B. Lund, Boston.
*E. F. Cody, New Bedford.

MICHIGAN
A. W. Hornbogen, Marquette.
Guy L. Connor, Detroit.
J. D. Brook, Grandville.
F. C. Warnshuis, Grand Rapids.

MINNESOTA
W. H. Magie, Duluth.
*J. W. Bell, Minneapolis.

MISSISSIPPI
John W. Barksdale, Winona.

MISSOURI
R. E. Schlueter, St. Louis.
J. Curtis Lyter, St. Louis.

MONTANA
*Creswell T. Pigot, Roundup.

NEBRASKA
A. D. Dunn, Omaha.

NEVADA
*J. LaRue Robinson, Reno.

NEW HAMPSHIRE
*D. E. Sullivan, Concord.

NEW JERSEY
Henry A. Cotton, Trenton.
*Edward Guion, Atlantic City.
*George E. Reading, Woodbury.

NEW MEXICO
H. A. Miller, Clovis.

NEW YORK
James F. Rooney, Albany.
Frederic E. Sondern, New York.
William F. Campbell, Brooklyn.
Grover W. Wende, Buffalo.
Thomas H. Halsted, Syracuse.

NORTH CAROLINA
J. F. Highsmith, Fayetteville.

NORTH DAKOTA
E. A. Pray, Valley City.

OHIO

OKLAHOMA
L. J. Moorman, Oklahoma City.
*J. M. Byrum, Shawnee.

OREGON
Joseph A. Pettit, Portland.

PENNSYLVANIA
C. A. E. Codman, Philadelphia.
John B. McAlister, Harrisburg.
George A. Knowles, Philadelphia.
John D. McLean, Harrisburg.
*Edward B. Heckel, Pittsburgh.
*Walter S. Stewart, Wilkes-Barre.
*William F. Bacon, York.
*Wilmer Krusen, Philadelphia.
*C. C. Cracraft, Claysville.

RHODE ISLAND
Jesse E. Mowry, Providence.

SOUTH CAROLINA
Edgar A. Hines, Seneca.

SOUTH DAKOTA

TENNESSEE

L. A. Yarbrough, Covington.

TEXAS

Holman Taylor, Fort Worth.
M. F. Bledsoe, Port Arthur.
R. L. Ramey, El Paso.

UTAH

S. G. Kahn, Salt Lake City.

VERMONT

*F. T. Kidder, Woodstock.

VIRGINIA

Jos. T. Buxton, Newport News.
*E. G. Williams, Richmond.
*Southgate Leigh, Norfolk.

WASHINGTON

D. E. McGillivray, Port Angeles.

WEST VIRGINIA

Jas. R. Bloss, Huntington.
*Henry P. Linsz, Wheeling.

WISCONSIN

Rock Sleyster, Wauwatosa.
Horace M. Brown, Milwaukee.
*Joseph F. Smith, Wausau.

WYOMING

Earl Whedon, Sheridan.

ALASKA

HAWAII

H. B. Wood, Waialua.

ISTHMIAN CANAL ZONE

PHILIPPINE ISLANDS

PORTO RICO

*Jacinto Avilés, San Juan.

GOVERNMENT SERVICES

United States Army, Joseph F. Siler.
United States Navy, Charles M. Oman.
United States Public Health Service, J. W. Schereschewsky.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE

Walter L. Bierring, Des Moines.

SURGERY, GENERAL AND ABDOMINAL

Hugh H. Trout, Roanoke, Va.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

George G. Ward, Jr., New York.

OPHTHALMOLOGY

C. D. Wescott, Chicago.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Emil Mayer, New York.

DISEASES OF CHILDREN

Isaac A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS

L. G. Rowntree, Rochester, Minn.

PATHOLOGY AND PHYSIOLOGY

D. J. Davis, Chicago.

STOMATOLOGY

E. S. Talbot, Chicago.

NERVOUS AND MENTAL DISEASES

Walter Timme, New York.

DERMATOLOGY

Howard Fox, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

John D. McLean, Harrisburg, Pa.

UROLOGY

Carl L. Wheeler, Lexington, Ky.

ORTHOPEDIC SURGERY

John Ridlon, Chicago.

GASTRO-ENTEROLOGY AND PROCTOLOGY

Alois B. Graham, Indianapolis.

BUSINESS SECTION OF ST. LOUIS

ST. LOUIS—THE CONVENTION CITY

For the fifth time in its history the American Medical Association will hold its annual session in St. Louis.

St. Louis is an old city as western American cities count ages, and it is not new to many Association members, yet one who has not visited the city since 1910 cannot be said to know it. The city has changed much in twelve years. It has changed physically, yet has not sacrificed its charms of age. It has changed its pace, yet clings to the virtues of a more deliberate past. It has intensified business, but business has not overshadowed the arts, nor the sciences, nor recreation. It has placed a higher reward on modernity in all its phases, but it still cherishes most its hospitality—that peculiar hospitality which its old southern families have diffused throughout its citizenry. It remains the friendly city where visitors become guests and there are no strangers.

ADVANTAGES AS A CONVENTION CITY

The city has many advantages for the meeting of large national bodies. It is a geographic center, the city surrounded by the United States. Twenty trunk line railroads contribute to its accessibility. It has a May climate, marred neither by excessive heat of the farther south nor by the uncertainty of the farther north, where raw days creep in unexpectedly at that season. It is a city of regular streets of easy acquaintance. It has adequate, comfortable housing for large numbers. It supplies pleasant meeting auditoriums. But it reckons none of these as comparable with the genuineness of its pleasure in making visitors feel welcome.

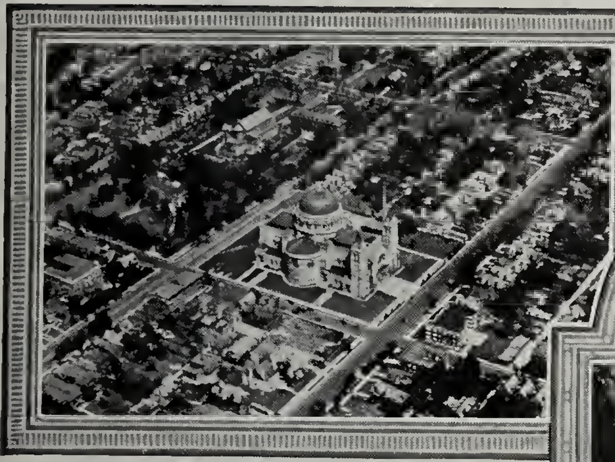
St. Louis occupies a water front of nineteen miles on a bend in the Mississippi river, the city extending back from the river in a series of undulating hills for an area of more than sixty square miles. Its population is 780,000, though in adjacent Illinois cities and suburban residence districts in St. Louis County are sufficient people to make the metropolitan population in excess of 1,000,000.

ARRANGEMENT

The city is stratified into sections, disclosing clearly the trend of its advancement. The section immediately adjoining the river levees, once the business section, is now a warehouse district and the business section begins about six blocks away at the crest of the first rise from the water's edge, at Fourth Street. The present downtown retail business section lies between Fourth and Eighteenth Streets with a width of eight blocks. From Eighteeenth Street west to Grand Avenue, which is Thirty-Sixth Street, lies the old residence section of the city. This has given way to manufacturing plants, and Grand Avenue has become a second business center, while the residences are still farther to the west, extending to what corresponds to Fifty-Fifth Street, where there is still another well-developed business center. Still farther westward lies St. Louis County, the residence section of many of the wealthier citizens, an expanse of rolling hills dotted with beautiful homes. For many miles up and down the river are industrial and residence districts —a great red city of brick.

HISTORY

St. Louis was founded in 1763 by Pierre Liguest Laclede, a Frenchman, who ascended the Mississippi River from New Orleans. It has not accumulated an historic scroll so extensive as that of some eastern cities which record the birth of the nation, but no other western city bears the mark of greater events. And if the mind to which the past presents glamour goes behind the beginnings of the east, it will find that long before New York was new, an American people lifted up within eyeshot of St. Louis a monument surpassing in size the greatest of the Egyptian pyramids. Long before Boston founded a culture, an American people shed civilization in a world that had St. Louis for its capital and which now is shut from sight by prehistoric mists. For at Cahokia, across the Mississippi River from St. Louis, is the great plain of the Mound Builders—a people who lived and disappeared before the beginnings of American chronicles.



AEROPLANE VIEW OF NEW CATHOLIC CATHEDRAL AND RESIDENTIAL ENVIRONS.

ART MUSEUM IN FOREST PARK

JEFFERSON MEMORIAL: HOME OF THE MISSOURI HISTORIAL SOCIETY

The Great Mound of Cahokia, on which the Mound Builders toiled for countless ages, is an earth pyramid 1,080 feet long, 780 feet wide and 104 feet high. In smaller pyramids about it lie the bones of the Mound Builders and their art works, forming the great remaining unsolved archeologic mystery of America. The mounds are within forty minutes' street car ride of St. Louis.

And in the more modern past, St. Louis has left its impression on events of national consequence. It was at St. Louis that General William Clark lived and began, with Lewis, his famous exploration to the Pacific coast. It was in the old St. Louis courthouse, still standing, that the Dred Scott case, greatest of legal struggles centering about slavery, had its beginning, while the cries of the bidders for slaves wafted through the courthouse windows from its steps.

It was in a log cabin in St. Louis that Gen. Ulysses S. Grant gained the pioneering hardihood which enabled him to "fight it out on this line, if it takes all summer." It was here that the Jesuits built their first cathedral in the western wilderness, and pilgrims still pass through its doors, to be recipients of papal favors even now not enjoyed by any other cathedral on the continent.

It was in St. Louis that Mark Twain embarked on the steamboats whose whistles he later sent round the world in the immortal pages of Huckleberry Finn and Tom Sawyer. The same type of steamboat now nudges the St. Louis levee and carries pilgrims over the same waters that the great humorist once sounded and "marked twain." It was to St. Louis that Daniel Boone came to close his life when the Kentucky hills became too populous.

In St. Louis there is as much of historical interest to attract the visitors as there is of modern comforts to make his stay pleasant and enjoyable.

THE RIVER

The physical attribute most commonly associated with St. Louis is the Mississippi River. The Father of Waters begins to take on majesty at St. Louis, chiefly because the Missouri adds its outpouring only a few miles above. The confluence of these two rivers is one of inspirational and scenic splendor, best viewed from a steamer's deck. Big river steamers pass the rivers' meeting each day and go on farther to the mouth of another large river, the Illinois, which Chicago is about to make its outlet to the Gulf of Mexico. The trips on these river steamers also carry the sightseers into the bluff section of the upper river.

The river at St. Louis is spanned by four bridges, two of them especially notable. The Eads Bridge, the first to connect the banks of the Mississippi anywhere along its course, and the Municipal Bridge, which is the longest structure of its kind in the world. The Merchants' Bridge is a purely railroad structure, and the McKinley Bridge is privately owned and devoted to the uses of the McKinley electric system and to vehicular traffic. All of the members of the A. M. A. who come from the east will enter the city over one of these bridges. The Eads Bridge is a double-decked structure, one deck for street car, foot and wagon traffic and the second for railroad trains. The Missouri terminus of the bridge is connected with the Union Passenger Station, more than a mile away, by a tunnel under the business section of the city. The Eads Bridge was ten years in building and cost $10,000,000. Its length is 6,220 feet; including the tunnel, 11,000 feet. It and the Municipal Bridge are well lighted, and form one of the city's interesting night scenes. The Municipal Bridge, which is half a mile south of the Eads Bridge, is two miles long and is the largest double-span ever built. It is free to all forms of vehicular traffic.

WATER SUPPLY

The St. Louis water filtration plant, representing an expenditure of $30,000,000, an interesting project for physicians interested in a pure water supply, is on the river at the northern extremity of the city. The plant is of recent construction and consequently represents the most modern ideas of serving a city with water.

STEAMBOAT TRAFFIC

The city, for two decades isolated from commercial interest in the river, now is making its way back. It has watched the singing darkies disappear from its levees, and the gangplanks they trod rot from disuse. Now, recognizing a mistake, it has begun to replace the sloping levees with modern docks and to summon back the tooting river whistles so that it can again send its goods seaward. The United States government is operating thirteen towboats and seventy steel barges of 2,000-ton capacity each on the river, the most modern freight operation on any river in the world. So the visitor at this time is not too late to see the vestiges of the romantic old days of the Mississippi but can observe also the new day, which has fully as much romance.

The new boats on the river, contrasted with the picturesque packet type, are low squat bulldogs, each capable of carrying five barges to the sea. These five barges can be loaded with 10,000 tons of freight, which is the equivalent of 300 freight carloads, or ten freight trains as freight trains now are made up. The average carrying capacity of the boats of the U. S. Shipping Board is 10,000 tons. Thus a towload at the St. Louis lock becomes a ship load at New Orleans, and St. Louis may be reckoned the newest seaport of the United States. This operation, unlike any other anywhere in the world by reason of the fact that both boats and barges are new construction of a type created for the river, is one of the most interesting sights of the modern St. Louis harbor. The towboats are tunnel-type, which is to say that screws which have heretofore been used only on the sea have been adapted to use on the Mississippi by encasing them in tunnels, which are recesses in the boat's hull. All the old river boats, and they may still be seen in use on the upper river, are of stern or side-wheel construction.

WASHINGTON UNIVERSITY

ST. LOUIS UNIVERSITY

BOTANICAL GARDENS

Another institution for which St. Louis is widely known and which brings visitors from all parts of the world is the Missouri Botanical Garden, the finest in the United States, and in the world second only to the famous Kew gardens in England. The gardens were the gift of Henry Shaw, an Englishman who lived here and who died in 1889. They have an area of 125 acres, and either outdoors or within the large display houses are to be seen most of the interesting plants of the world. For the visit of the members of the American Medical Association, the old Chelsea physic garden is being reproduced.

There are 11,000 species of plants in the garden. The finest collection of orchids in the United States is here. The palm house has 150 species. The economic house has a collection of tropical and subtropical plants of especial economic importance, including those which produce rubber, oils, perfumes, fiber, spices, drugs, woods, dyes, coffee, pepper, tea, jasmine, ginger and many other articles of commerce. The cycad house is arranged like a Japanese garden and displays forty species of cycads, including Kafir bread, a sago palm 300 years old, and countless other tropical evergreens. All forms of ferns are to be found in the fern house. There are eight other display houses, while out of doors are the rose garden, the perennial garden, the aquatic garden, the formal garden, the arboretum and countless plants which will be in bloom during the Association's meeting. The Missouri Botanical Garden is valued at $10,000,000. It is supported by an annual budget of about $150,000.

FOREST PARK

A third St. Louis institution notable because of its rank in comparison with others in larger American cities is Forest Park. No other American park has such a diversity of interest as Forest Park. Its west section is the site of the Louisiana Purchase Exposition of 1904 and many of the more beautiful features of the exposition have been made permanent. The topography, like that of the city, is undulating and the 1,400 acres are wooded with majestic oaks, one of the finest groves of that species in the middle west being preserved in its native state at the western extremity of the park. The location of the park is thirty minutes' street car ride from the downtown district and the surroundings are the better residential section, in addition to the private residence "places," famous for their magnificent homes.

A rapid enumeration of all that Forest Park holds would include the Museum of Fine Arts, the zoo, the Jefferson Memorial, the Municipal Theater, eighteen miles of automobile roads, twenty-six tennis courts, seventeen baseball diamonds, two handball courts, a cricket field, two golf courses, a seven-acre drill ground and several picnic grounds, as well as several ornamental shelter houses. Forest Park is the playground of St. Louis. It is a show place and a place for recreation and education.

The zoo frequently has been visited by commissions from other cities bent on copying the ideas being carried out. The most signal of these departures in zoo construction are the bear pits, in which the bears live in the open with no bars separating them from the gaze of the public. A moat concealed beneath a terraced embankment is the only thing that maintains their captivity. The dens are reproductions of rock formations along the bluffs of the Mississippi and are of great beauty. There are four of the pits, each with a frontage of sixty-five feet.

Art museums are different the world over. No two museums can possess the same masterpiece. The St. Louis Museum is the building used for the World's Fair display of art. It has a notable collection of works of famous artists, and houses the finest collection of American sculpture that has been gathered together.

Jefferson Memorial is the home of the Missouri Historical Society. Besides showing relics relating to the history of Missouri, and displaying the usual sectional museum collection, the Missouri Historical Society has gathered a rare collection of Indian relics—arrowheads, utensils, weapons, implements and examples of ceramic art which throw light on the character and habits of the Indians who were the forefathers of the Indians Miles Standish knew.

The Municipal Theater is the most unique theater in the United States. It is an out-of-door auditorium of singular acoustics, in which eight weeks of opera is presented each year. The theater has for a stage the grassy bank of the River Des Peres, a little stream that runs through the park. The proscenium is formed by two gigantic oak trees. The auditorium is the hillside. The properties of the theater were discoverer almost by chance. It was established as a municipal institution with an all-star production, in 1915, of "As You Like It," with Robert Mantell, Genevieve Hamper and Margaret Anglin. Since then, in summer, it has been in almost constant use for community gatherings, grand opera, band concerts, public speaking, and the municipal opera, the fame of which is percolating throughout the country. Other cities have begun to copy it.

The hillside has been transformed into a permanent auditorium with 9,270 seats, which usually are filled for five nights each week throughout the eight weeks of the opera season. The theater is surrounded on three sides by pergolas which shelter the crowd in time of rain. However, last season the opera went through its season without one postponement because of rain.

The opera company is recruited from stars of the light opera stage, and, at times, grand opera stars have been members. The chorus, usually of about eighty members, is trained through the winter months in the municipal opera school. The orchestra is composed of fifty of the eighty members of the St. Louis Symphony Orchestra.

OLIVE STREET CANYON

EDUCATIONAL FACILITIES

The educational facilities of the city are two major universities, numerous smaller colleges and private schools and a public school system with definite qualities to distinguish it from similar systems in other cities.

It is fortunate that the two major universities should be notable for their medical schools. Washington University's physical plant is one of the most noteworthy in the world, and the age and scholarly reputation of the St. Louis University School of Medicine needs no mention to physicians.

Washington University School of Medicine is separated from the other schools of the university by the length of Forest Park. The classic towers of the main university stand at one extremity, and the new buildings for the medical school are at the other. Barnes Hospital, an imposing group of buildings of much larger dimensions than the usual 250-bed hospital, is attached to the medical school as the teaching unit of the school and is connected with it by a tunnel. The medical school also has the professional administration of the St. Louis Children's Hospital, which is in the same group of buildings, and likewise will furnish the staff for the new Shriners' Hospital for crippled children which is soon to be erected on a site adjoining the medical plant. The fact that the St. Louis crippled children's hospital is to be the central unit of a series which the Shriners expect to spread over the United States and Canada will, it is expected, add to the prestige of Washington University as a center for clinical work among children. It already holds high rank in pediatrics and in orthopedic surgery by reason of its attachment to the children's hospital. The opportunity for inspection of the Washington University plant may be considered a major attraction of the May meeting.

St. Louis University is an ancient institution at the exact geographic center of the city. The university is the oldest organization for learning in the Louisiana purchase tract, having been established in 1818 by the Jesuit Order. The administration buildings on Grand Avenue between Lindell and West Pine Boulevards are several blocks from the school of medicine, which is at Grand Avenue and Caroline Street. The dental school is there also. The medical school has an attendance of about 300, and the dental school of 224. The school of medicine has a faculty of 143 men of attainment in their respective fields. The school provides clinical teaching in several of the larger hospitals, including the city hospital, for a division of which the school has accepted staff responsibility. The meeting places for the May assemblage are in proximity to St. Louis University and not at a great distance from the Washington University group.

COMMERCE AND INDUSTRY

Industrial St. Louis is greatly diversified. It is said that St. Louis feels the vicissitudes of business less than any other large city, both because of its traditional investment and banking conservatism and from the fact that no one industry is emphasized to the extent that the city's welfare is dependent on it.

One of the leading industries is the manufacture of chemicals, in which the city leads the country. The chemical and drugs sales for 1921 were in excess of $60,000,000. However, the largest single industry is the manufacture of shoes, and here are not only the largest shoe companies, with factories scattered throughout Missouri and Illinois, but also the largest single shoe plant in the world. The annual business of St. Louis shoe companies is in excess of $100,000,000.

MISSOURI ATHLETIC CLUB

An industrial giant of common interest is the plant of the St. Louis Coke and Chemical Co., a business based on a patented process of coking coals hitherto regarded as noncoking, an accomplishment that, it is asserted, will threaten the age-long supremacy of Pittsburgh in steel. Iron ore shipped from Minnesota by way of the Mississippi River will meet coke more cheaply in St. Louis than it does in Pittsburgh, and the consequence is cheaper pig iron in the middle west than the steel stronghold of the east.

The plant of the St. Louis Coke and Chemical Company is especially interesting because the huge blast furnace, the latest to be constructed in the United States, is the last word among those picturesque crucibles. The investment in the coke and steel plant is $10,000,000.

St. Louis lights are lit and St. Louis street cars are run by electricity generated by the Mississippi River at the Keokuk dam and brought to the city overland by a high voltage transmission system.

IMPORTANT BUILDINGS

Union Station in St. Louis long was pictured in the grade school geographies as the finest passenger station in the United States. Since the St. Louis station was built many cities have acquired stations of greater size, but constructed on various levels. Trains still come and go in St. Louis on thirty tracks, all on the same level. A survey of railroad engineers recently noted the fact that the station still is a remarkable one for the speedy movement of trains.

The Catholic cathedral of St. Louis is the finest church structure in America in point of size and outlay of money. Its interior, which is being wrought in elaborate mosaic, is not yet complete, but services are being held while work makes its careful, tedious progress. The cathedral has cost, so far, $4,000,000.

SHOPPING FACILITIES

The shopping facilities in St. Louis are grouped within a comparatively small area. There are three large department stores, each covering a block of ground to a height of eight, ten and twelve stories. The stores, being accustomed to large numbers of shoppers from out of the city, have provided multiple facilities for their comfort. For this reason, the families of members of the American Medical Association will find St. Louis an enjoyable place.

UNIVERSITY CLUB

TABLOID FACTS

St. Louis has the lowest infant death rate of all large cities in the country.

It supports nineteen municipal children's playgrounds and a municipal recreational program of a magnitude not approached in any other American city. St. Louis gave birth to the now fast spreading plan of the municipal fostering of athletic competition on a large scale.

The daily capacity of the Chain of Rocks water filtration plant is 160,000,000 gallons.

The Ranken School of Mechanical Trades is notable for its buildings and the scope of its instruction.

The public library system, consisting of a main building, six large branches and sixty stations, circulates 1,000 000 books annually. The main building is one of the outstanding architectural works of the city.

The architecture of the public school buildings is not approached in the United States.

The museum of natural history of the public school system is the only one of its kind in the United States.

Jefferson Barracks, the oldest military post in the west, is a short street car ride from St. Louis, on bluffs overlooking the Mississippi River.

There are eleven country clubs in St. Louis County, each having a golf course.

St. Louis County, which is a continuously populated area on the outskirts of St. Louis, has good automobile roads and many scenic spots.

St. Louis is remarked always by visitors for its large number of handsome residences. Many of these are on private streets called "places." The city has a large percentage of home owners, probably owing to the fact that only 13 per cent. of its population is foreign born.

Outdoor facilities publicly supported include twenty-one parks, twenty-three picnic grounds, thirty-four baseball grounds, eighteen soccer football fields, two outdoor swimming pools and fifteen wading pools.

Municipal athletic leagues in baseball, football, basket ball, tennis, golf and rowing are supervised by the city park department.

Christ Church Cathedral, the purest example of Gothic architecture in the west, was the first Protestant church founded west of the Mississippi River.

St. Louis is the "friendly city."

MOOLAH TEMPLE (Lindell Boulevard, near Vandeventer)
In this building will be the general headquarters, registration, postoffice, information bureau, and scientific and commercial exhibits.

TRANSPORTATION

Special Railroad Fares

The Southwestern Passenger Association serves points within the territory as indicated: from certain points in Illinois and Missouri, as well as from points in Arkansas, Colorado, Kansas, Louisiana, Nebraska, Oklahoma and Texas. This Association has authorized the sale of round trip tickets at a fare and a half, with a minimum excursion fare of $1 on the presentation of "Round Trip Identification Certificate." The dates of sale for these special tickets are May 16-24, inclusive, with the final return limit of June 1, 1922, for points in Missouri, Kansas, Arkansas, Louisiana and Oklahoma. The dates of sale will be May 15-23, inclusive, with final return limit of June 2, 1922, from points in Texas. These tickets may be secured from the local ticket agents of the Southwestern lines which are party to the reduced excursion fares announced.

The Southwestern Passenger Association has directed that the reduction can be secured only by those persons who are bona fide members of the American Medical Association, or of one of the other medical organizations approved by the Passenger Association, and holding a meeting in St. Louis just before or just following the Scientific Assembly of the American Medical Association.

The Central Passenger Association includes railroads operating in the states of Indiana and Ohio; the lower peninsula of Michigan; that portion of Illinois on and south of a line drawn from Chicago to Peoria, and thence to Burlington, Iowa, including Hannibal, Mo., and border portions of Kentucky and West Virginia extending from Evansville, Ind., to Louisville, Ky., thence to Kenova, and thence in a line leading to Pittsburgh. This association has authorized the sale of round trip tickets to St. Louis under the conditions authorized by the Southwestern Passenger Association, with dates of sale, May 16-24, inclusive, with final return limit of June 1, 1922.

The Trunk Line Association acts for railroads within New York State (east of and including Buffalo, Niagara, Suspension Bridge and Salamanaca), New Jersey, Pennsylvania (east of and including Erie, Oil City and Pittsburgh), Delaware, Maryland, District of Columbia, Virginia and West Virginia (east of and including Wheeling, Parkersburg, Kenova, Orange and Norfolk). This association has authorized the sale of excursion tickets in accordance with the conditions announced, the tickets to be on sale May 16-24, inclusive, with the final return limit of June 1, 1922.

The New England Passenger Association, which serves the New England States and certain territory on the eastern border of New York State, has also authorized the sale of excursion tickets in accordance with the announced conditions. These tickets will be on sale May 16-24, inclusive, with a final return date of June 1, 1922.

The Southeastern Passenger Association includes stations on lines in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia, including the gateway points—New Orleans, Baton Rouge, La., Vicksburg, Miss., Helena, Ark., Memphis, Tenn., Cairo, Ill., Evansville, Ind., Cincinnati and Washington, D. C. In accordance with the foregoing conditions, round trip excursion tickets may be bought from points in this territory, May 16-24, inclusive, with a final return limit of June 1.

The Western Passenger Association has announced that these special rate round trip tickets in accordance with the foregoing conditions may be purchased May 15-23, inclusive, with final return limit of June 2, 1922, from points in Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming, while from points in North Dakota the selling dates will be May 16-24, inclusive, and the final return limit June 1, 1922.

The Transcontinental Passenger Association has authorized the sale of the Round Trip Identification Certificates in accordance with the conditions announced as follows: The individual lines in California, Nevada, Oregon, Washington and Western British Columbia will sell tickets to St. Louis, May 12-19, inclusive, with the final return limit of June 5, 1922.

In every instance the return portion of the ticket must be validated by the ticket agent at St. Louis before the tickets will be good for return passage.

Through the courtesy of representatives of the Illinois Central Railroad Company, the following table has been prepared announcing railroad rates from various points:

		Fare	Lower	Upper	Drawing Room
Atlanta		$33.80	$6.75	$5.40	$24.00
Boston	Via Chicago	65.37	10.13*	8.10*	36.00*
Boston	Direct	65.37	12.00	9.60	42.00
Chicago		15.62	3.75	3.00	13.50
Denver		49.20	10.13	8.10	36.00
Los Angeles	Via New Orleans	120.21	22.50	18.00	79.50
Los Angeles	Direct	110.46	22.50	18.00	79.50
New Orleans		38.06	7.88	6.30	28.50
New York	Via Chicago	59.48	9.00*	7.20*	31.50*
New York	Direct	57.09	10.88	8.70	39.00
Philadelphia	Via Chicago	53.48	8.25*	6.60*	30.00*
Philadelphia	Direct	52.23	10.13	8.10	36.00
St. Paul	Direct	31.11	5.63	4.50	21 00
Washington	Direct	48.81	9.00	7.20	31.50

* To Chicago only.

Identification Certificates Necessary

The passenger associations direct that the Fellows and members of the American Medical Association have impressed on them that reduced fares cannot be obtained unless they present identification certificates to the ticket agent when purchasing their tickets. The passenger associations state that they have had occasion in the past where members have purchased one way tickets, thinking that reduced fares would be accorded on return trip. Failure to purchase round trip tickets on the presentation of identification certificates will mean a loss to the members. The passenger associations further direct that the reduced rate which has been authorized for the annual session of the Association can be secured only by those persons who are bona fide members of the American Medical Association, and of other specified medical organizations which will meet at St. Louis about the same time.

Members who desire to take advantage of these special railroad fares must secure "identification certificates," which are to be deposited with the ticket agent who sells the round trip ticket. These identification certificates will be forwarded promptly to those members who make requests for them from the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago. A self-addressed, stamped envelop should be enclosed with the request. Members who plan to take advantage of these fares should write at once for identification certificates. A failure to do this may make it impossible to forward the identification certificate in time so that the member may use it in purchasing his transportation to St. Louis.

Members who plan to go to St. Louis are urged to consult the local ticket agent in their home town for full information regarding available rates, extensions and stopover privileges. The tariff schedules on file at every ticket office will allow the local ticket agent to quote rates from that point. In addition to this, with the assistance of the agent, the physician can determine whether or not it is possible to arrange for side trips either going or coming. Moreover, it may be necessary for the local agent in smaller cities to secure a special form for the round trip ticket from a central distributing point.

REGISTRATION

The Bureau of Registration will be located in the Moolah Temple, Lindell Boulevard, near Vandeventer Street. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin*, which announces the names of visitors and other important convention items.

Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests only may register and take part in the work of any of the sections of the Scientific Assembly. Members of the organization, i. e., members in good standing in the constituent associations, are eligible to Fellowship in the Scientific Assembly. The Fellows of the Scientific Assembly are those members who have, on the prescribed form, applied for Fellowship, subscribed to The Journal, and paid their annual Fellowship dues for the current year. These annual Fellowship dues provide a subscription for The Journal for one year. In a word, members of component county medical societies are *ipso facto* members of their several constituent state associations and are eligible for Fellowship in the Scientific Assembly. Members should qualify as Fellows before they start for St. Louis, and receive a pocket card certifying to their Fellowship. This card will enable its holder to register at the St. Louis Session readily and without undue delay. Those who do not have pocket cards should secure them by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

ARRANGEMENTS FOR SECURING POCKET CARD

Arrangements will be made so that it will be possible for members of the organization to qualify as Fellows of the Scientific Assembly after they reach St. Louis; but it will require more time to register, and the delay will not only be a hardship to the physician who postpones qualifying as a Fellow, but also will be an inconvenience to others waiting their turn to register.

Register Early

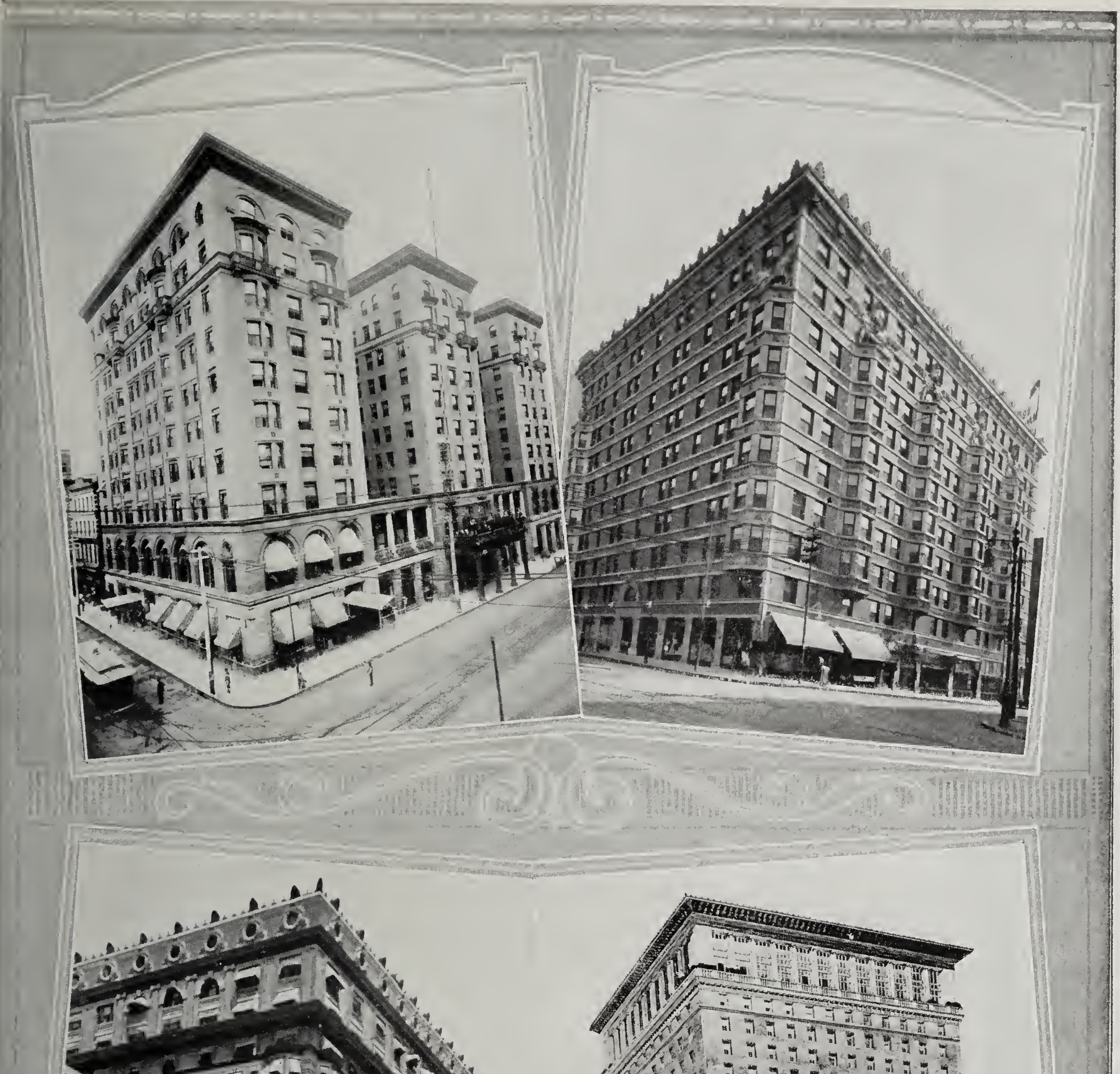
Physicians of St. Louis and Missouri, as well as other Fellows who are in St. Louis on Monday and Tuesday, should register as early as possible. It will be an accommodation to visiting physicians to find the names and addresses of the members of the St. Louis profession listed in the *Daily Bulletin* for Tuesday, May 23.

Suggestions Which Will Facilitate Registration

Every one who registers will fill out completely the spaces on both sections of the front of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window



SOME ST. LOUIS HOTELS

Upper left: Planters' Hotel, Headquarters Section on Ophthalmology. Upper right: Marquette Hotel, Headquarters Section on Laryngology, Otology and Rhinology. Lower left: Jefferson Hotel, Headquarters Section on Surgery and Orthopedic Surgery. Lower right: Hotel Statler, Headquarters Section on Practice of Medicine.

marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1922 dues are unpaid should present his filled in registration card with the amount of his Fellowship dues ($6) at one of the windows marked "Cash." Here, too, there will be some delay; but the work of registering will be conducted as promptly as possible.

4. As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 10. Any applications received later than May 10 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the St. Louis Session.

As already stated, it will be possible for members of the organization to qualify as Fellows at St. Louis. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the registration card and sign the formal application printed on the reverse side. It is suggested that those who apply for Fellowship at St. Louis shall provide themselves before leaving home with certificates signed by the secretary of their state association, attesting that they are members in good standing in the state and county branches of the organization. A state membership card for 1922 will be acceptable. The certificate or membership card should be presented along with the filled in registration card at the window in the registration booth marked "Applications for Fellowship and Invited Guests."

MEETING PLACES AND SECTION HEADQUARTERS

KEY TO MAP

American Hotel (3)
American Annex (2)
Claridge Hotel (10)
Jefferson Hotel (8)
Majestic Hotel (6)
Marquette Hotel (9)
Moolah Temple (A)
Musicians' Hall (H)
Odeon Theater (G)
Planters' Hotel (1)
Sheldon Memorial Hall (E)
St. Louis Medical Society Bldg. (I)
St. Louis University Law School Auditorium (C)
St. Peter's Parish House (B)
Statler Hotel (4)
Third Baptist Church (D)
Union Methodist Episcopal Church (F)
Warwick Hotel (7)

The following have been designated as section hotel headquarters and as meeting places * for the St. Louis Session—May 22 to 26:

House of Delegates: *St. Louis Medical Society Building* (I).

General Meeting: *Odeon Theater* (G).

Practice of Medicine: Statler (4). *Odeon Theater* (G).

Surgery, General and Abdominal: Jefferson (8). *Third Baptist Church* (D).

Obstetrics, Gynecology and Abdominal Surgery: Claridge (10). *Third Baptist Church* (D).

Ophthalmology: Planters (1). *Sheldon Memorial Hall* (E).

Laryngology, Otology and Rhinology: Marquette (9). *Sheldon Memorial Hall* (E).

Diseases of Children: American (3). *Odeon Theater* (G).

Pharmacology and Therapeutics: American Annex (2). *Odeon Theater* (G).

Pathology and Physiology: American Annex (2). *Odeon Theater* (G).

Stomatology: Warwick (7). *St. Peter's Episcopal Church Parish House* (B).

Nervous and Mental Diseases: Majestic (6). *St. Louis University Law School Auditorium* (C).

Dermatology and Syphilology: Majestic (6). *Union Methodist Episcopal Church* (F).

Preventive Medicine and Public Health: Warwick (7). *Musicians' Hall* (H).

Urology: Maryland (5). *Union Methodist Episcopal Church* (F).

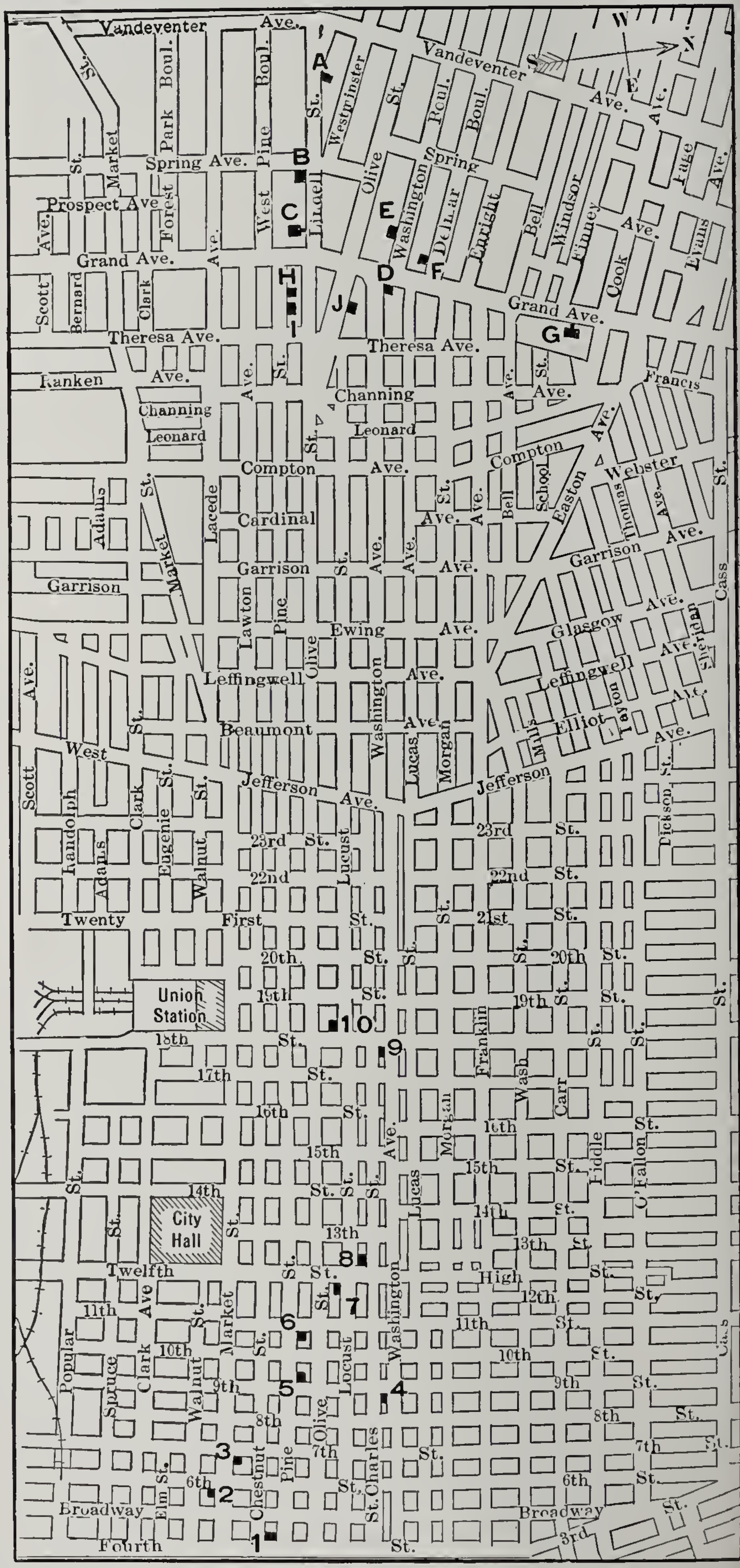
Orthopedic Surgery: Jefferson (8). *St. Louis University Law School Auditorium* (C).

Gastro-Enterology and Proctology: Maryland (5). *Musicians' Hall* (H).

Miscellaneous (Meeting on Anesthesia): *St. Peter's Episcopal Church Parish House* (B).

General Headquarter: Scientific Exhibit, Registration Bureau, Commercial Exhibit, Information Bureau and Branch Postoffice: *Moolah Temple* (A).

* Meeting places in italics.



POSTOFFICE

An Association Postoffice will be maintained in connection with the Registration Bureau in Moolah Temple, Lindell Boulevard and Vandeventer Avenue. Guests are requested to order mail addressed to them "Care American Medical Association, Moolah Temple, St. Louis, Mo.," or to their hotels, as preferred.

ST. LOUIS HOTELS

The accompanying table shows the daily rates and the accommodations available at a number of the leading hotels of St. Louis.

The Local Committee on Hotels is making arrangements so that visiting Fellows will be assisted in securing lodgings even though they have neglected to make reservations. All trains arrive in St. Louis at one station—the Union Station.

On Monday and Tuesday of the week of the annual session, trains will be met by members of the Committee on Registration and Information, who will render every possible assistance to incoming Fellows, directing them to the proper street car lines or to taxicabs, as desired, and giving them information relative to hotels and lodging quarters. In addition, through cooperation with the St. Louis Convention and Tourist Bureau, an information booth will be maintained in the center of the Union Station Midway. This booth will be readily visible from all exits from trains.

Any Fellow who, after writing to the hotel of his choice, fails to secure a reservation will be assisted in obtaining lodgings if he will write to the Chairman of the Local Committee on Hotels, stating just what accommodations he desires, when he expects to arrive in St. Louis, who constitute his party and how long they plan to remain in the city. In addition, the applicant should state what effort has previously been made to secure the desired lodgings. Communications for the attention of the Committee on Hotels should be addressed to Dr. Louis H. Behrens, 3525 Pine Street, St. Louis.

ST LOUIS' LEADING HOTELS (ALL EUROPEAN PLAN), THEIR LOCATION AND RATES

Hotel, with Number of Rooms *	Street Address	Without Bath Single	Without Bath Double	With Bath Single	With Bath Double
American, 275 *Diseases of Children*	7th and Market Streets	....	....	$2.50–3.00	$4.00– 6.00
American Annex, 225 *Pathology and Physiology* *Pharmacology and Therapeutics*	6th and Market Streets	....	....	2.00–3.00	3.00– 6.00
Beers, 114	Grand and Olive Streets	$1.50	$2.50	2.00–2.50	3.00– 3.50
Brevort, 50	4th and Pine Streets	....	....	2.00	3.00
Cabanne, 43	5545 Cabanne Street	....	....	12.00–37.50 †	
Claridge, 350 *Obstetrics, Gynecology and Abdominal Surgery*	18th and Locust Streets	....	....	2.50–4.00	4.00–10.00
Hamilton, 160	Hamilton and Maple Streets	....	....	2.00–2.50	3.50– 4.00
Jefferson, 400 *Surgery, General and Abdominal* *Orthopedic Surgery*	12th and Locust Streets	2.50–3.00	4.00	3.00–8.00	6.00–10.00
Laclede Hotel, 265	6th and Chestnut Streets	1.50–2.00	2.50–3.00	2.50–3.00	3.50– 4.00
Majestic, 200 *Dermatology and Syphilology* *Nervous and Mental Diseases*	11th and Pine Streets	....	....	2.50–3.00	3.50– 4.00
Marion Roe, 200	Broadway and Pine Streets	....	....	1.50–2.00	3.00– 4.00
Marquette, 400 *Laryngology, Otology and Rhinology*	18th and Washington Streets	2.00–2.50	3.00–3.50	3.00–3.50	4.00– 6.00
Maryland, 240 *Gastro-Enterology and Proctology* *Urology*	9th and Pine Streets	2.00	3.00	2.50–3.50	4.00– 5.00
Planters, 400 *Ophthalmology*	4th and Pine Streets	2.00–2.50	3.00–3.50	2.50–5.00	4.00– 8.00
Plaza, 200	3300 Olive Street	....	....	2.00–2.50	3.50– 5.00
Roselle, 100	4137 Lindell Boulevard	....	....	1.50–2.50	2.50– 3.50
St. Francis, 120	6th and Chestnut Streets	1.50–2.00	2.50–3.00	3.00–4.00	4.00– 5.00
Statler, 650 *Practice of Medicine*	9th and Washington Streets	....	....	3.00–7.00	5.50– 9.50
Stratford, 100	8th and Pine Streets	1.50	2.50	2.50	3.50
Terminal, 100	Union Station	1.50–2.00	3.00	3.00–3.50	5.00
Warwick, 200 *Stomatology* *Preventive Medicine and Public Health*	15th and Locust Streets	....	....	2.00–4.00	4.00– 6.00
Westgate, 125	Kingshighway and Delmar Streets	2.00	2.50	3.00	3.50

* Section notel headquarters indicated by name of section following hotel. † Weekly rates only.

MOTORING TO AND IN ST. LOUIS

Arrangements have been made with the Automobile Club of Missouri whereby automobiles will carry A. M. A. posters so that when a Fellow, his family or a guest sees one of these automobiles going in his direction the driver may be hailed and the visitor will be taken on his way as far as the car is going.

The standard taxicab rates of St. Louis are:

Yellow Cab Company: For the first mile, 50 cents and 20 cents for each additional mile thereafter, together with an additional cost of 20 cents for each extra passenger.

Columbia Taxi Company: For the first mile, 80 cents and 30 cents for each additional mile thereafter, with an additional cost of 20 cents for each extra passenger.

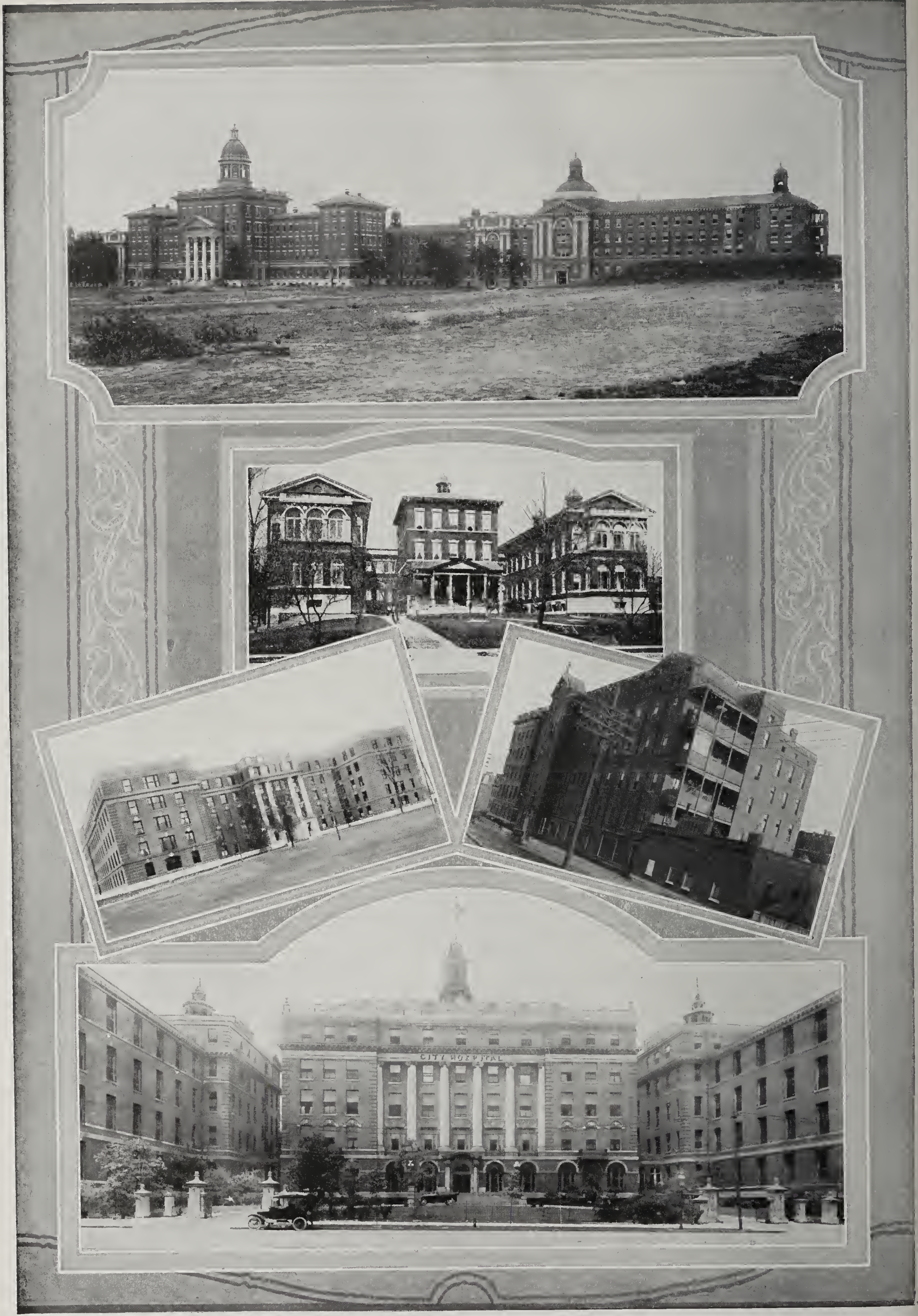
To St. Louis by Automobile

The splendid roads entering St. Louis through the neighboring states will undoubtedly tempt a number of physicians to motor to St. Louis for the annual session. The Fellows can obtain assistance and information through the different automobile organizations in which they hold membership or the Automobile Club of Missouri, which is located in St. Louis at 3230 Locust Street, on the corner of Channing Avenue, a short distance from the Registration Headquarters, at Moolah Temple.

Those desiring to tour will find that the roads from the North and East into St. Louis are in fine condition, especially through Illinois. The condition of the roads in the West and South depends on the weather. There is ample garage room in the downtown hotel district and the outlying districts are also well supplied.

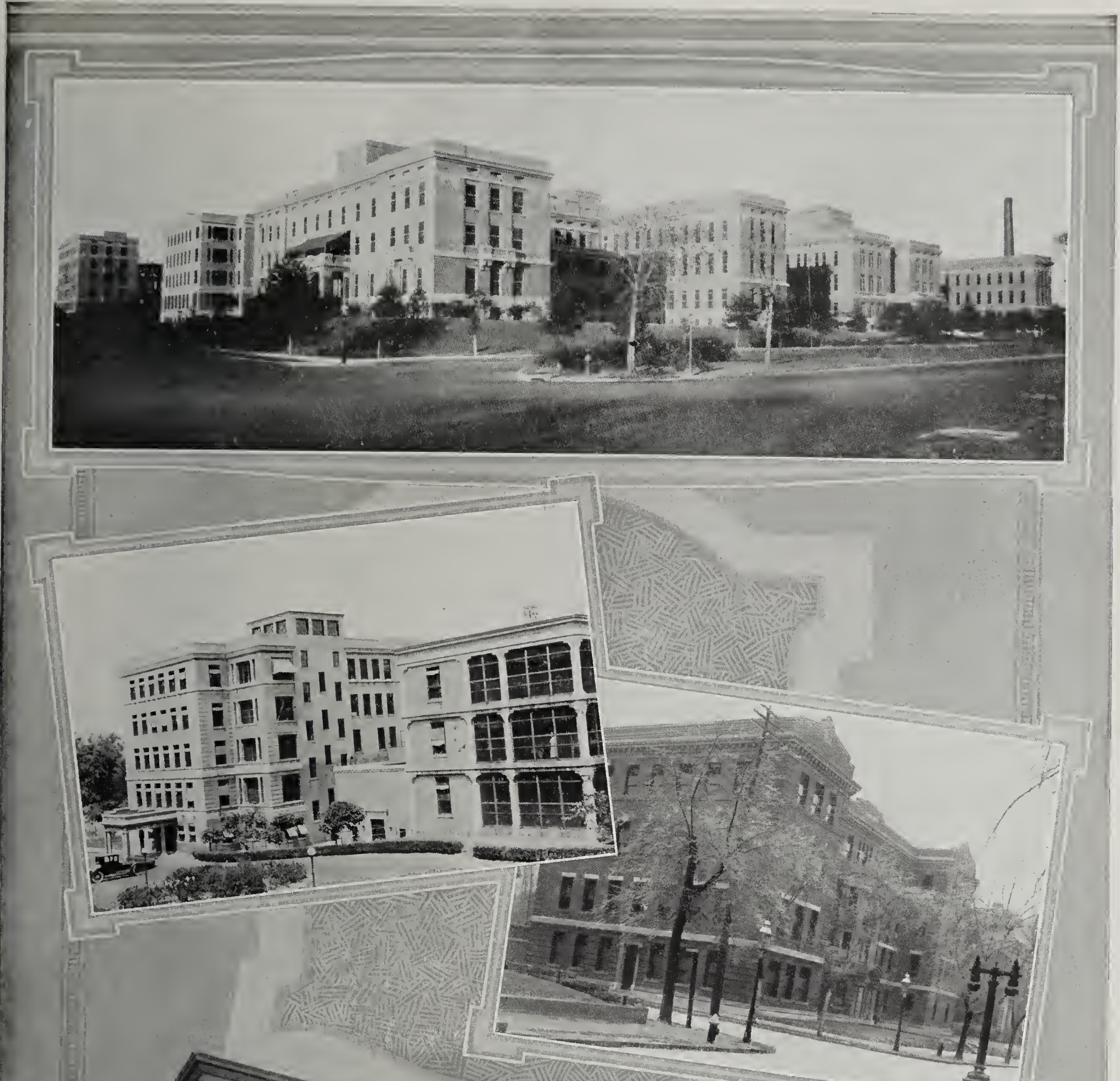
Directions for tourists who desire to motor to St. Louis will be given in detail by the Automobile Club of Missouri in a subsequent article. One of the facilities offered by St. Louis for Fellows who would enjoy camping during the meeting and who make the trip in autos is the use of the camping grounds in Forest Park. A section of the park is provided with excellent arrangements for camping, with shower baths and camp stoves, and excellent ground space for erecting tents. This portion of the park will be guarded during the meeting and all precautions taken to enable campers to take full advantage of this opportunity.

Those desiring to have camping space allotted to them should address Fred. W. Pape, Park Commissioner, City Hall, St. Louis, Mo.



SOME ST. LOUIS HOSPITALS

Above: City Sanitarium and Hospital for the Insane. Upper center: Jewish Hospital. Right center: St. Mary's Hospital and Infirmary. Left center: St. John's Hospital. Below: City Hospital.



SOME ST. LOUIS HOSPITALS

Above: Barnes Hospital. Left center: Children's Hospital. Right center: Barnard Free Skin and Cancer Hospital.
Below: St. Luke's Hospital.

ENTERTAINMENT

(Note.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The Scientific Assembly will open with the general meeting convening at 8:30 p. m., Tuesday, May 23, in the Odeon Theater.

The Local Committee of Arrangements announces the following entertainments:

Tuesday, May 23

At 4 p. m. there will be a roof garden tea at the Hotel Statler, to meet the ladies accompanying the officers of the American Medical Association.

Wednesday, May 24

At 2 p. m. the ladies will be taken for an automobile drive about the city and vicinity. From 4 to 6 p. m. there will be a reception at the City Art Museum, Forest Park.

During the evening there will be smokers and banquets of medical alumni, medical fraternities and a number of the sections. Provision will also be made for the entertainment of visiting ladies and others who are not engaged at the former functions for a moving picture show with special musical and other features, to be given at one of the motion picture theaters.

At 8 p. m., in the auditorium of the Washington University Medical School, Scott and Euclid Avenues, there will be a demonstration of modern pedagogic methods in the training of the deaf child, in which teachers and pupils of the Central Institute for the Deaf will take part. The demonstration will be of special interest to those interested in the Section on Laryngology, Otology and Rhinology, but all Fellows of the Association are invited.

Thursday, May 25

In the morning, through the courtesy of the director, Mr. George T. Moore, the ladies will be afforded an opportunity to visit the Missouri Botanical Gardens, and the Wednesday Club of St. Louis will present a play, "In a Chinese Garden," by Wilcox. Special trolley cars will be provided for the round trip.

In the afternoon the president and trustees of Washington University and the faculty of the Medical School will give a tea on the grounds of the Medical School and the associated hospitals.

The evening will be devoted to a reception to the President at Arcadia Hall.

Friday, May 26

From 10:30 a. m. until noon, the Morning Choral Club of St. Louis will present a musical in honor of the visiting ladies at the Scruggs, Vandervoort and Barney Music Hall.

From 2 to 5 p. m. there will be a boat trip on the Mississippi, with dancing and plantation melodies.

At 8 p. m., one of the chief entertainments of the week planned by the Local Committee will be given, when a special program for the entire Association will be presented by the Municipal Opera in St. Louis' open-air theater. This is located in the heart of Forest Park. Its special lighting effect on the natural foliage of the park is a unique sight for those who visit it at night. It is one of the features of St. Louis

BEAR PIT.—ST. LOUIS ZOO IN FOREST PARK

American Medical Golf Tournament

The eighth tournament of the American Medical Golfing Association will be held at Glen Echo, St. Louis, Monday, May 22, under the auspices of the Local Committee: Fred Bailey, chairman, Harry Unterberg and Harvey Mudd, and Harry Lyman, secretary, Carleton Building, St. Louis, Mo.

The events will take place both morning and afternoon. They consist of the "Association championship," thirty-six holes gross, "Frisco" trophy; "Association handicap," thirty-six holes, "Detroit" trophy; choice score handicap, thirty-six holes, "St. Louis" trophy; eighteen hole handicap, president's trophy, and the section team matches.

Any Fellow of the American Medical Association in good standing who has a degree of M.D. becomes automatically a member of the American Medical Golf Association, on acceptance of the by-laws and payment of the enrolment fee. The enrolment fee is $2, payment of which confers life membership. A fee of $2 is charged to enter.

All play will be in four ball matches, the Fellows arranging their own games. Players enter in the scientific section under which they register in the A. M. A., and the winning team carries the "section trophies" for the year.

Entries close May 10 for all events, except section teams. Late entrants will play in other matches.

The general secretary, Will Walter, 1414 Chicago Avenue, Evanston, Ill., will receive applications and entries.

CLINICS AT ST. LOUIS

The Local Committee of Arrangements reports that the medical profession of St. Louis has arranged a series of clinics to be held Thursday, May 18, to Tuesday, May 23, inclusive. These clinics will be conducted at the St. Louis and Washington Universities and at several of the private and public hospitals of the city. A preliminary schedule is announced. A definite program of these clinics will be published later.

CLINIC PROGRAM

BARNARD SKIN AND CANCER HOSPITAL.—From 9 a. m. to 5 p. m, Monday. Dermatologic, surgical and gynecologic clinics.

WASHINGTON UNIVERSITY MEDICAL SCHOOL, BARNES HOSPITAL.—Medical Department: From 9 a. m. to 12 m., Friday and Saturday. Medical clinics. Surgical Department: From 9 a. m., to 12 m., Thursday, Saturday, Monday and Tuesday. Surgical, gynecologic and obstetric Clinics.

CHILDREN'S HOSPITAL.—Pediatric Department: From 9 a. m. to 12 m., Thursday, Saturday, Monday and Tuesday. Pediatric clinic.

ST. LOUIS UNIVERSITY MEDICAL SCHOOL AND ASSOCIATED HOSPITALS.—St. Mary's Hospital: From 9 a. m. to 12 m., Thursday, Saturday and Monday. Surgical and medical clinics.

St. Anthony's Hospital: From 9 a. m. to 12 m., Saturday and Tuesday. General surgical clinic; maxillofacial and plastic surgical clinic; genito-urinary diagnostic and operative clinic; medical clinic: demonstration pathogenesis of pulmonary infection and animal experimentation.

St. John's Hospital: From 9 a. m. to 12 m., Thursday, Saturday and Tuesday. Surgical and medical clinics. From 2 p. m. to 5 p. m., Friday and Monday. Endocrine clinic, Drs. Engelbach and Tierney, conducted by Drs. Lewellys S. Barker, Baltimore; David Riesman, Philadelphia, and Nelson W. Janney, Los Angeles.

Alexian Brothers Hospital: From 9 a. m. to 12 m., Friday and Monday. Surgical, genito-urinary, urologic and medical clinics. From 2 p. m. to 5 p. m., Thursday and Saturday. Ear, nose and throat and ophthalmologic clinics.

St. Ann's Maternity Home: Infant feeding clinic; dates to be announced later.

FRISCO HOSPITAL.—From 9 a. m. to 12 m., Thursday and Saturday. Surgical clinic.

LUTHERAN HOSPITAL.—Surgical, medical and genito-urinary clinics; dates to be announced later.

MISSOURI BAPTIST SANITARIUM.—Surgical, orthopedic and gynecologic clinics; dates to be announced later.

JEWISH HOSPITAL.—Clinics to be announced later.

ST. LOUIS CITY HOSPITAL.—Daily clinics; schedules to be announced later.

Clinics will probably also be held at the following hospitals, dates and schedules to be announced later: St. Luke's, Deaconess, Mullanphy, Bethesda and St. Louis Baptist.

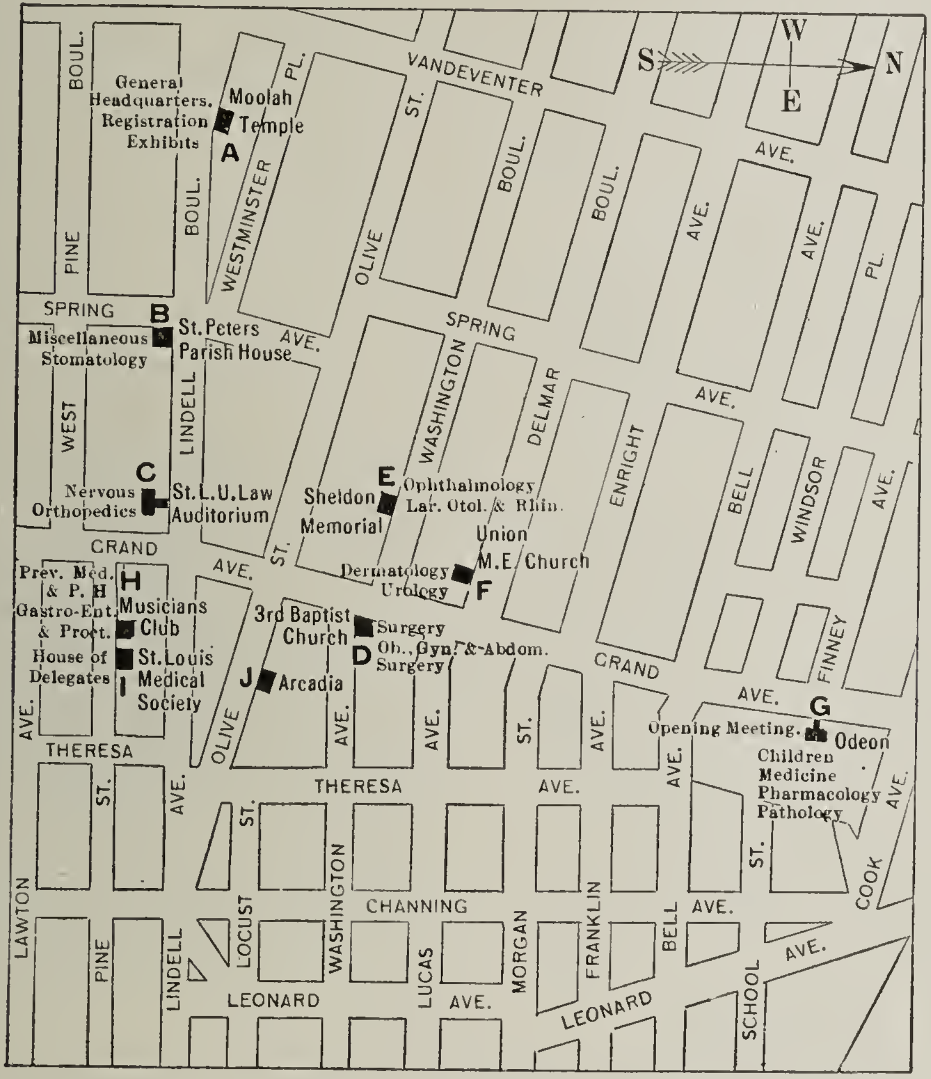


Diagram of central section of city showing headquarters and meeting places.

BROADCASTING THE GENERAL OPENING MEETING ADDRESS

Plans are being made to broadcast by radio the principal addresses, and probably the music, at the opening meeting on Tuesday evening. Two propositions are under consideration: one provides for a radius of 1,500 miles; the other for practically the whole country.

ALUMNI AND OTHER REUNIONS

The Local Committee on Arrangements is arranging that members of medical fraternities and other organizations may register their attendance at the St. Louis Session. Announcements of reunions may be inserted in the *Daily Bulletin* on request.

The Barnes-National Alumni will hold a banquet and entertainment at the Claridge Hotel, Eighteenth and Locust Streets, Wednesday, May 24, at 8 p. m. During the meeting a registry clerk will be stationed in the lobby of Hotel Claridge. Send communications to Dr. C. A. Vosburgh, secretary.

The Alumni Reunion of the Medical Department of Washington University will be held at the Hotel Jefferson, Wednesday, May 24, 6:30 p. m. Graduates of the Medical School of Washington University, of St. Louis Medical College and the old Missouri Medical College are urged to be present. Reservations may be made by addressing Dr. Edgar Allen, Chairman of Committee on Alumni Relations, Washington University, St. Louis.

Wednesday evening, May 24, the St. Louis members of the Phi Chi medical fraternity will informally entertain their visiting brothers with a smoker and luncheon at the Planters' Hotel, Parlor "A." A cordial invitation is extended to all the visiting brothers to attend this affair *en masse*. An evening worth while is assured to all. James P. Sharon, secretary Phi Rho chapter, 3966 Lindell Boulevard, St. Louis.

The Lloyd R. Boutwell Post of the American Legion will give a luncheon to the members of the American Medical Association who are members of the Legion, Wednesday, May 24. Further information may be obtained from Dr. William E. Leighton, Lister Building, St. Louis.

NONAFFILIATED ORGANIZATION

The following organizations have announced that they will hold meetings in St. Louis during the days immediately preceding or following those on which the Scientific Assembly of the American Medical Association will meet; the American Association for the Study of the Feebleminded; the American Association of Anesthetists; the American Association of Industrial Physicians and Surgeons; the American Proctologic Society; Association for the Study of Internal Secretions; the American Medical Library Association, and the Radiological Society of North America.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located in the Auditorium (second floor) of Moolah Temple. Applications received thus far include the following exhibitors. As the date set for assignments is May 1, the list must be considered tentative:

American Child Hygiene Association, Baltimore: Exhibit of charts showing various phases of care of children.

American National Red Cross, Washington, D. C.: Exhibit of posters on health, nursing, disaster activities and first aid.

American Society for the Control of Cancer, New York City: Exhibit showing work of the organization.

Association for Prevention and Relief of Heart Disease, New York: Exhibit showing the work of the organization.

Child Health Organization of America, New York: Exhibit on child health education.

Dr. E. E. Dodd, New York, and Dr. W. W. Cadbury, Cambridge, Mass.: Exhibit of charts and photographs showing medical conditions in China.

Dr. H. W. Loeb, St. Louis: Exhibit showing record filing system of the Jewish Hospital of St. Louis.

The Prudential Insurance Company of America, Newark, N. J.: Exhibit showing graphic charts on diseases; also demonstration of some improved methods of urinalysis.

United States Public Health Service, Washington, D. C.: Exhibit under direction of Dr. C. C. Pierce, Assistant Surgeon General, showing educational posters and charts on child hygiene and also on venereal disease control.

Barnard Free Skin and Cancer Hospital, St. Louis: Exhibit showing results of early and late treatment of cancer; also cancer and skin disease diagnosis.

Dr. Henry R. Cotton, New Jersey State Hospital, Trenton, N. J.: Exhibit of charts on focal infection; pathologic specimens of colon and teeth.

Dr. Rolla Henry, St. Louis Hospital, St. Louis: Exhibits from the roentgen-ray, pathologic and occupational therapy departments of the St. Louis Hospital.

Mr. Robert S. Hodges, Geological Survey of Alabama, University of Alabama: Exhibit of some ringworm fungi and affections common in the South; a study of certain culture medium characteristics.

Dr. Kenneth M. Lynch, Dallas, Texas: Exhibit showing cultivation and differentiation of flagellate protozoa.

Dr. Reuben Peterson, University of Michigan, Ann Arbor, Mich.: Exhibit on pelykography (pneumoperitoneal pelvic roentgenograms).

Dr. L. R. Sante, St. Louis Hospital, St. Louis: Exhibit showing roentgen-ray prints of unusual conditions.

Dr. Vilray Papin Blair, St. Louis: Exhibit of photographs and plaster casts, showing various types of face restoration.

Dr. Welcome B. Coley, New York: Exhibit of tables, photographs, photomicrographs dealing with sarcoma of long bones.

Dr. Thomas Evans Dental Institute, University of Pennsylvania, Philadelphia: Exhibit of roentgen-ray films showing abnormalities and diseases of upper jaw.

Dr. Alfred Baker Spalding, Lane Hospital San Francisco: Exhibit of photographs and roentgenograms from the division of obstetrics and gynecology, Leland Stanford Junior University School of Medicine.

Dr. Alfred Strauss, Chicago: Exhibit of drawings, slides and roentgenograms of gastro-intestinal surgery and brain surgery.

Dr. Leigh F. Watson, Chicago: Exhibit of charts and drawings of hernias.

Battle Creek Sanitarium, Battle Creek, Mich.: Exhibit of charts and apparatus illustrating the effects of physical agents on metabolism.

Dr. Louis Fougeres Bishop, New York: Exhibit of electrocardiograms.

Dr. J. R. Pennington, Chicago: Exhibit of charts showing action of radium on cancer of the rectum.

Dr. Louis W. Sauer, Evanston, Ill.: Exhibit based on observations of the nonsurgical treatment of pyloric stenosis.

Dr. S. Calvin Smith, Philadelphia: Exhibit of electrocardiograms.

Dr. James E. Talley, Philadelphia: Exhibit on electrocardiography (curves).

American Medical Association

Council on Medical Education and Hospitals: Exhibit of charts and maps showing statistics on medical school enrolment, graduation and licensure; also charts and maps showing results of survey of dispensaries, outpatient departments, group practice and clinics, their growth and distribution.

Council on Pharmacy and Chemistry: Cards and specimens illustrating the effort of the Council in the interests of scientific medicine and rational prescribing.

The American Medical Association Chemical Laboratory: Cards and specimens bearing on such subjects as the newer synthetics, comparative prices of proprietary and nonproprietary remedies and drug control.

Propaganda Department of The Journal of the American Medical Association: Exhibit of (1) a series of educational posters; (2) specimens of pamphlets published for the purpose of furnishing information easily and quickly to the public, and (3) the two volumes of "Nostrums and Quackery," the second one of which has but recently come from the press. There will also be (4) an automatic projection apparatus displaying the stereopticon slides that have been prepared by the department for the use of physicians who may wish to give talks on the nostrum evil.

Council on Health and Public Instruction: Exhibit of charts, posters, pamphlets and other material on public health, child welfare, health problems in education, etc.; prepared and issued by the Council for the public.

Moving Picture Theater

On the same floor as the Scientific Exhibit, will open at noon Monday and run continuously each day thereafter from 9 a. m. to 5:30 p. m., until noon on Friday. Each speaker will demonstrate the talk with either lantern slides or moving pictures. The program, as yet tentative, consists in part of the following (the final schedule will be made May 1):

American Red Cross, Washington, D. C.: First aid and relief work.

American Society for Control of Cancer, New York: Rockefeller cancer film.

Dr. William W. Cadbury, Cambridge, Mass.: Medical conditions in South China and native Chinese medical practices.

Dr. Arthur J. Cramp, Director of Propaganda Department, The Journal, American Medical Association: "Nostrums and Quackery."

Dr. Joseph L. De Courcy, Cincinnati: Moving pictures on two thyroidectomies and one herniotomy.

Dr. R. E. Farr, Minneapolis: Exhibit of clinical films.

Dr. I. Leon Meyers, Los Angeles: Slow motion picture of rotation process in the air of normal animals and of animals with experimental lesions of the cerebellum and labyrinth.

Dr. Fred J. Taussig, St. Louis: Cancer diagnosis.

Dr. Isaac L. Abt, Chicago: Care of premature children.

Dr. Lewellys F. Barker, Baltimore: Routine neurologic examination.

Dr. Joseph C. Bloodgood, Baltimore: Early diagnosis and treatment of cancer of the mouth and tongue.

Dr. W. E. Dandy, Baltimore: Early symptoms and diagnosis of tumor of the brain.

Dr. Joseph C. Beck, Chicago: Complications in infection in middle ear.

Dr. Henry S. Cotton, Trenton, N. J.: Relation of physical disorders to certain mental conditions.

Dr. Thomas L. Gilmer, Chicago: Pyorrhea and apical abscesses.

Dr. Carl H. Davis, Milwaukee: Uses of moving pictures in obstetric practice.

Dr. Harry Gradle, Chicago: Eye infections in contagious diseases.

Dr. Dean Lewis, Chicago: Early diagnosis and treatment of blastomycosis and actinomycosis.

Dr. E. W. Ryerson, Chicago: Deformities and gait affections resulting from infantile paralysis.

Dr. Francis E. Senear, Chicago: Ulcerative conditions of the skin.

Dr. Burt R. Shurly and Dr. Clift, Detroit: Differential diagnosis and treatment of sinus infections and common colds. Roentgen ray in diagnosis and treatment of diseases of sinuses and mastoid.

Dr. Willard J. Stone, Pasadena, Calif.: Lecture demonstration: Practical blood chemistry for the general practitioner.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

Tuesday, May 23—8:30 p. m.

Music.

Call to Order by the President, Hubert Work, Pueblo, Colo.

Invocation. The Right Reverend Daniel S. Tuttle.

Announcements. Robert E. Schlueter, Chairman of the Local Committee of Arrangements.

Address of Welcome. Hon. Henry W. Keil, Mayor of St. Louis.

Address of Welcome. William W. Graves, President, St. Louis Medical Society.

Music.

Introduction and Installation of President-Elect George E. de Schweinitz, Philadelphia.

Address. George E. de Schweinitz.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of St. Louis and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN ODEON THEATER

OFFICERS OF SECTION

Chairman—Lewellys F. Barker, Baltimore.
Vice Chairman—Willard J. Stone, Pasadena, Calif.
Secretary—Nellis B. Foster, New York.
Executive Committee—James S. McLester, Birmingham, Ala.; H. S. Plummer, Rochester, Minn.; Lewellys F. Barker, Baltimore.

Wednesday, May 24—2 p. m.

1. A Study of Hypotension.
Stewart R. Roberts, Atlanta.
2. A Clinical Study of Wassermann Reactions.
Lester J. Palmer, Seattle, Wash.
3. Observations on the Heart in Mothers and the New-Born.
S. Calvin Smith, Philadelphia.
4. Relation Between Migraine and Epilepsy.
John Phillips, Cleveland.
5. Quinidin Treatment of Auricular Fibrillation.
Walter W. Hamburger, Chicago.
6. Medical Technic. John W. Flinn, Prescott, Ariz.
7. Obesity, Its Cause and Rational Treatment.
C. Lee Graber, Cleveland.

Thursday, May 25—2 p. m.

Election of Officers

8. Syphilis of the Lung. Alfred Friedlander, Cincinnati.
9. The Treatment of Tetanus.
Willard J. Stone, Pasadena, Calif.
10. An Evaluation of Therapeutic Procedures and the Discussion of the Pathogenesis of Grave's Syndrome.
Leo Kessell, New York.
11. Relation of the Pulse Rate and Pulse Pressure to Basal Metabolism. J. Marion Read, San Francisco.
12. Myocarditis and Its Management.
William A. Jenkins, Louisville, Ky.
13. The Diagnostic Value of Blood Fibrin Determinations with Special Reference to Disease of the Liver.
James S. McLester, Birmingham, Ala.
14. Study of a Thousand Cases of Pneumonia in Bellevue Hospital.
Russell L. Cecil and N. P. Larsen, New York.

Friday, May 26—2 p. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON INTERNAL SECRETIONS

15. Chairman's Address: Endocrinology
Lewellys F. Barker, Baltimore.
16. Conditions Controlling Internal Secretion.
Walter B. Cannon, Boston.
17. Metabolic Effects of the Glands of Internal Secretion.
Joseph Aub, Boston.
18. Hypofunction and Hyperfunction of the Glands of Internal Secretion. A. J. Carlson, Chicago.
19. Principles of Endocrinology Applicable to Organotherapy.
R. G. Hoskins, Columbus, Ohio.

Discussion of papers 15, 16, 17, 18 and 19 to be opened by William Engelbach, St. Louis; L. G. Rowntree, Rochester, Minn.; Joseph C. Capps, Chicago, and H. S. Plummer, Rochester, Minn.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN THIRD BAPTIST CHURCH

OFFICERS OF SECTION

Chairman—Wallace I. Terry, San Francisco.
Vice Chairman—Daniel F. Jones, Boston.
Secretary—Urban Maes, New Orleans.
Executive Committee—Dean Lewis, Chicago; George P. Muller, Philadelphia; Wallace I. Terry, San Francisco.

Wednesday, May 24—9 a. m.

1. The Treatment of Recurrent Inoperable Carcinoma of the Breast by Means of Radium and Roentgen Ray (Lantern Demonstration). Burton J. Lee, New York.
2. The New Short Wave Length Roentgen-Ray Therapy.
James T. Case, Battle Creek, Mich.

Discussion of papers 1 and 2 to be opened by George E. Pfahler, Philadelphia; Thomas A. Groover, Washington, D. C., and Curtis F. Burnam, Baltimore.

3. The Treatment of Tuberculous Cervical Adenitis.
Richard H. Miller, Boston.

Discussion to be opened by R. H. Boggs, Pittsburgh, and Harry G. Sloan, Cleveland.

4. The Immediate Closure Without Drainage of the Usual Compound Fracture of the Leg.
T. Turner Thomas, Philadelphia.

Discussion to be opened by Fordyce B. St. John, New York, and Fred W. Bailey, St. Louis.

5. The Fate of the Necrosed Bone in Chronic Osteomyelitis.
Frederic W. Bancroft, New York.

Discussion to be opened by Dennis W. Crile, Chicago, and Barney Brooks, St. Louis.

6. The Surgical Relief of Intestinal Foci of Infection in Cases of Arthritis Deformans.
Rea Smith, Los Angeles.
Discussion to be opened by Ralph Pemberton, Philadelphia, and John W. Draper, New York.

Thursday, May 25—9 a. m.

Election of Officers

7. Chairman's Address. Wallace I. Terry, San Francisco.
8. The Treatment of Cancer of the Rectum.
Robert C. Coffey, Portland, Ore.
Discussion to be opened by Dan F. Jones, Boston, and J. Tate Mason, Seattle, Wash.
9. The Desperate Risk Goiter.
Martin B. Tinker, Ithaca, N. Y.
10. The Causes of Surgical Failure in Hyperthyroidism.
J. Earl Else, Portland, Ore.
Discussion of papers 9 and 10 to be opened by George W. Crile, Cleveland; Walter M. Boothby, Rochester, Minn., and Frank H. Lahey, Boston.
11. Results Following the Removal of Spinal Cord Tumors (Lantern Demonstration).
A. W. Adson, Rochester, Minn.
Discussion to be opened by Charles H. Frazier, Philadelphia, and Ernest Sachs, St. Louis.
12. Anesthesia; a Part-Time Specialty.
Moses Salzer, Cincinnati.
Discussion to be opened by F. H. McMechan, Avon Lake, Ohio, and A. E. Guedel, Indianapolis.
13. The Classification of Congenital Clefts of the Lip and Palate with Suggestions for Recording These Cases.
Harry P. Ritchie, St. Paul, and John Staige Davis, Baltimore.
Discussion to be opened by James E. Thompson, Galveston, Texas, and Vilray P. Blair, St. Louis.

Friday, May 26—9 a. m.

JOINT MEETING OF THE SECTIONS ON SURGERY, GENERAL AND ABDOMINAL, AND ON GASTRO-ENTEROLOGY AND PROCTOLOGY

SYMPOSIUM ON PEPTIC ULCER

14. The Relative Value of Medical and Surgical Treatment of Gastric and Duodenal Ulcer and the Indication for Each. Arthur Dean Bevan, Chicago.
15. The Relative Value of Medical and Surgical Treatment in Gastric and Duodenal Ulcer.
Bertram W. Sippy, Chicago.
16. Progress in the Handling of Peptic Ulcer.
W. J. Mayo, Rochester, Minn.
17. The Relative Rôles of Medical and Surgical Treatment in Gastric and Duodenal Ulcer.
Thomas R. Brown, Baltimore.
Discussion of papers 14, 15, 16 and 17 to be opened by J. M. T. Finney, Baltimore, and Charles G. Stockton, Buffalo.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN THIRD BAPTIST CHURCH

OFFICERS OF SECTION

Chairman—Sidney A. Chalfant, Pittsburgh.
Vice Chairman—Gordon K. Dickinson, Jersey City, N. J.
Secretary—Carl H. Davis, Milwaukee.
Executive Committee—Reuben Peterson, Ann Arbor, Mich.; John O. Polak, Brooklyn; Sidney A. Chalfant, Pittsburgh.

Wednesday, May 24—2 p. m.

1. Chairman's Address: Some Gynecologic Misdemeanors.
Sidney A. Chalfant, Pittsburgh.
2. Carbon Dioxid Inflation as Means of Determining Sterility in Women (Lantern Demonstration).
Roland S. Cron, Ann Arbor, Mich.
Discussion to be opened by I. C. Rubin, New York.
3. Hydatidiform Mole and Chorioepithelioma—A Clinical and Pathologic Study. Emil Novak, Baltimore.
Discussion to be opened by Fred Taussig, St. Louis.
4. A Series of Five Hundred Cases of Myoma Uteri and Myopathic Hemorrhage Treated by Irradiation.
John G. Clarke and Floyd E. Keene, Philadelphia.
Discussion to be opened by N. S. Heaney, Chicago.
5. The Treatment of Cystocele with Report of Cases (Lantern Demonstration). J. Craig Neel, San Francisco.
6. The Cause and Cure of High Rectocele (Lantern Demonstration). Alfred Baker Spalding, San Francisco.
7. The Technic of the Repair of Enterocele and Rectocele as an Entity and When Associated with Prolapse of the Uterus (Lantern Demonstration).
George Gray Ward, Jr., New York.
Discussion to be opened by T. J. Watkins, Chicago.
8. A Clinical and Roentgenologic Study of the Minor Forms of Embolism Following Abdominal Operations (Lantern Demonstration).
L. R. Warton and J. W. Pierson, Baltimore.

Thursday, May 25—2 p. m.

9. Perforating Ulcer of the Cecum.
G. K. Dickinson, Jersey City, N. J.
Discussion to be opened by Dean Lewis, Chicago.
10. Care of the Bladder During Pregnancy, Labor and the Puerperium. Harold W. Shutter, Milwaukee.
Discussion to be opened by Arthur H. Curtis, Chicago.
11. A Contribution to the Problem of Nephritis and Nephrosis in Pregnancy. Joseph L. Baer, Chicago.
12. The Conservative Treatment of Toxemias of Pregnancy.
George W. Kosmak, New York.
13. The Treatment of Toxemias During Pregnancy by Intravenous Injections of Glucose. Paul Titus, Pittsburgh.
Discussion to be opened by Charles Paddock, Chicago.
14. Results of the Low Cervical Cesarean Section (Laparotrachelotomy) in One Hundred and Twenty-Five Cases at the Chicago Lying-In Hospital (Lantern Demonstration). J. B. DeLee and E. L. Cornell, Chicago.
15. The End Results of Cesarean Section.
E. L. King, New Orleans.
Discussion opened by Rudolph W. Holmes, Chicago, and Hugo Ehrenfest, St. Louis.

Friday, May 26—2 p. m.

Election of Officers

16. Retroverted Uterus: Incidence and Symptoms.
Leda J. Stacy, Rochester, Minn.
17. Frequency and Clinical Significance of Uterine Displacements. Palmer Findley, Omaha.
18. So-Called Traumatic Uterine Displacements: Medicolegal Aspects of This Problem.
Harry E. Mock, Chicago.
Discussion to be opened by Harry S. Crossen, St. Louis, and John O. Polak, Broolyn.
19. Is Death in Acute Intestinal Obstruction Due to a Hepatic Insufficiency? Axel Werelius, Chicago.
20. The Cause and Relief of Acute Intestinal Obstruction.
C. H. Mayo, Rochester, Minn.
Discussion to be opened by Barney Brooks, St. Louis, and J. L. Yates, Milwaukee.
21. Hypermetrophy (Fibrosis) of the Uterus.
William E. Darnell, Atlantic City, N. J.
Discussion to be opened by George Gellhorn, St. Louis.

SECTION ON OPHTHALMOLOGY

MEETS IN SHELDON MEMORIAL HALL

OFFICERS OF SECTION

Chairman—Nelson Miles Black, Milwaukee.
Vice Chairman—A. E. Ewing, St. Louis.
Secretary—George S. Derby, Boston
Executive Committee—Allen Greenwood, Boston; James Bordley, Jr., Baltimore; Nelson Miles Black, Milwaukee.

Fellows are reminded that the meetings of the Section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to Fellows.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion (except in the case of five minute papers), and five minutes in which to close the discussion.

The Fellows appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1922. Copies of the Transactions may be obtained at $1.50 each, if subscriptions are sent to The Journal of the American Medical Association, 535 North Dearborn Street, Chicago, by June 1, 1922, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Fellows are requested to register in the Section registration book at the entrance. The full name and complete post-office address should be written plainly.

Wednesday, May 24—9: 00 a. m.

1. Chairman's Address.
Nelson Miles Black, Milwaukee, Wis.
2. A Further Note on Rapid Dilatation in the Radical Treatment of Lacrimonasal Disease.
S. Lewis Ziegler, Philadelphia.
3. The Retinitis of Hypertension Plus Nephritis.
William L. Benedict, Rochester, Minn.
Discussion to be opened by Walter B. Lancaster, Boston.
4. The Fundus Changes in Nephritis.
Joseph L. Behan, Brooklyn.
Discussion to be opened by George Slocum, Ann Arbor, Mich.
5 The Significance of Pathologic Changes in the Fundus in General Arterial and Kidney Diseases.
Martin Cohen, New York.
Discussion to be opened by Albert E. Bulson, Jr., Fort Wayne, Ind.
6. A Method of Examining Cases of Recurrent Hemorrhages into the Retina and Vitreous of Young Persons.
William C. Finnoff, Denver.
Discussion to be opened by William Zentmayer, Philadelphia.
7. Industrial Ophthalmology: A Survey of Twenty-Five Thousand Cases. V. E. Van Kirk, Pittsburgh.
Discussion to be opened by George H. Cross, Chester, Pa.
8. A Series of Ophthalmologic Cases Illustrating Various Methods in Plastic Surgery for Correction of Deformities Due to Injury with a Resulting Loss of Tissue (Lantern Demonstration).
Edmund B. Spaeth, Washington, D. C.
Discussion to be opened by Harold Gifford, Omaha, Neb.

Thursday, May 25—9 a. m.

DEMONSTRATION SESSION: EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

9. The Coefficient of Thermal Conductivity of the Eye and Orbit, Measured with Warm Applications.
Lucien Howe, Buffalo.
Discussion to be opened by William E. Shahan, St. Louis.
10. Vaccinia of the Eyelids by Homo-Inoculation.
James Moores Ball and Noxon Toomey, St. Louis.
11. Examination of the Eye by Direct Sunlight.
Edward Jackson, Denver.
Discussion to be opened by Marcus Feingold, New Orleans.
12. The Iris in Health and Disease as Seen with the Slit Lamp. Arthur J. Bedell, Albany, N. Y.
Discussion to be opened by Harry S. Gradle, Chicago.
13. Some Ophthalmologic Manifestations of Diseases of the Nervous System. Joseph P. Israel, Houston, Texas.
Discussion to be opened by George H. Bell, New York.
14. Intracapsular Operations for Cataract in North America (Lantern Demonstration).
John O. McReynolds, Dallas, Texas.
Discussion to be opened by Allen Greenwood, Boston.
15. Zonule Protection in Cataract Extraction.
A. E. Ewing, St. Louis.
16. Blindness in Missouri as Revealed bv Examinations Under the State Blind Pension Law of 1921.
H. D. Lamb, St. Louis.
Discussion to be opened by F. Park Lewis, Buffalo.

Friday, May 26—9 a. m.

Executive Session
Election of Officers
Reports of Committees

17. The Localization and Extraction of Intra-Ocular Foreign Bodies. James M. Patton, Omaha.
Discussion to be opened by Frank Burch, St. Paul.
18. An Unusual Orbital Tumor.
Walter Scott Franklin and Frederick C. Cordes, San Francisco.
19. Central Retinitis with Recovery of Normal Vision.
W. H. Luedde and J. F. Hardesty, St. Louis.
Discussion to be opened by Greenfield Sluder, St. Louis.
20. Focal Infection in the Tonsil Causing a Tuberculous Ophthalmia (Lantern Demonstration).
Cecil M. Jack, Decatur, Ill.
21. The Importance of Heterophoria Tests in Routine Refraction. H. H. Briggs, Asheville, N. C.
Discussion to be opened by G. C. Savage, Nashville, Tenn.
22. Spasm of the Accommodation with Report of Thirty Cases.
Avery D. Prangen, Rochester, Minn.
Discussion to be opened by Walter R. Parker, Detroit.
23. The Advantages of the Use of Minus Cylinders in Routine Refractions. Joseph D. Heitger, Louisville.
Discussion to be opened by John Green, Jr., St. Louis.
24. Present Day Status of Squint Surgery—a New Operative Technic. Oscar Wilkinson, Washington, D. C.
Discussion to be opened by M. M. Cullom, Nashville, Tenn.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN SHELDON MEMORIAL HALL

OFFICERS OF SECTION

Chairman—J. A. Stucky, Lexington, Ky.
Vice Chairman—Thomas E. Carmody, Denver.
Secretary—William B. Chamberlin, Cleveland.
Executive Committee—Joseph C. Beck, Chicago; Ross H. Skillern, Philadelphia, and J. A. Stucky, Lexington, Ky.

Wednesday, May 24—2 p. m.

1. Chairman's Address. J. A. Stucky, Lexington, Ky.
2. A Comparative Study of the Ethmoidal and Sphenoidal Operations (Lantern Demonstration).
John J. Shea, Memphis, Tenn.
Discussion to be opened by William V. Mullin, Colorado Springs, Colo.
3. The Nasopharyngeal Syndrome (Lantern Demonstration). Gordon B. New, Rochester, Minn.
Discussion to be opened by H. W. F. Woltman and W. L. Benedict, Rochester, Minn.
4. Observations on the Effects of Intratracheal Medication on Gas Burns of the Respiratory Tract.
Lafayette Page, Indianapolis.
Discussion to be opened by Ross Hall Skillern, Philadelphia.
5. An Experiment in Graduate Training in Otolaryngology.
George E. Shambaugh, Chicago.
Discussion to be opened by Joseph C. Beck, Chicago.
6. Pharyngeal Insufflation Anesthesia (Lantern Demonstration). Albert H. Miller, Providence, R. I.
Discussion to be opened by F. Nolton Bigelow, Providence, R. I.
7. Condensed and Accurate Charting of Examination and Diagnosis of Ear, Nose, Throat and Teeth (Lantern Demonstration). W. Perry Reaves, Greensboro, N. C.
Discussion to be opened by Joseph D. Heitger, Louisville, Ky.

Thursday, May 25—2 p. m.

8. The Future of the Blood Clot Dressing in Mastoid Surgery. George E. Davis, New York.
Discussion to be opened by George W. MacKenzie, Philadelphia.
9. The Practical Diagnostic Value of Tests of the Vestibular Mechanism (Lantern Demonstration).
Frank L. Dennis, Colorado Springs, Colo.
Discussion to be opened by Lewis Fisher, Philadelphia.
10. Determination of Disability as to Loss of Hearing and the Importance of Vertigo in Industrial Accident Cases.
Harold Fletcher, San Francisco.
Discussion to be opened by John F. Barnhill, Indianapolis.
11. Otalgia and Mastoidalgia Not Indications for the Mastoid Operation. H. I. Lillie, Rochester, Minn.
Discussion to be opened by Geo. M. Coates, Philadelphia.
12. Mastoiditis Hyperplastica Serosa.
J. W. Jervey, Greenville, S. C.
Discussion to be opened by R. C. Lynch, New Orleans.
13. Meningitis of Otitic Origin: A Statistical Study Based on Sixty-Three Cases Observed at Cook County Hospital During the Decade from 1911 to 1920, Inclusive.
C. F. Yerger, Chicago.
Discussion to be opened by Norval H. Pierce, Chicago.

Friday, May 26—2 p. m.

Election of Officers
Exhibition of New Instruments and Appliances
Report of Committees

Education of the Deaf Child.
C. W. Richardson, Washington, D. C., Chairman; Elmer E. Kenyon, Chicago; M. A. Goldstein, St. Louis.

Postgraduate Teaching.
Harris P. Mosher, Boston, Chairman; L. W. Dean, Iowa City; Robert Levy, Denver.

Necrology.
Emil Mayer, New York, Chairman; T. J. Harris, New York; William B. Chamberlin, Cleveland.

The Use of Caustic Alkalis.
Chevalier Jackson, Philadelphia, Chairman; George W. MacKenzie, Philadelphia; Fielding O. Lewis, Philadelphia.

14. Bronchoscopic Observations on the Cough-Reflex in Health and Disease (Lantern Demonstration).
Chevalier Jackson, Philadelphia.
Discussion to be opened by Samuel Iglauer, Cincinnati.

15. A Case of Optic Neuroretinitis Caused by Pressure in the Attic of the Nose and Cured by Relief of the Pressure.
Robert H. Cowley, Berea, Ky.
Discussion to be opened by H. H. Briggs, Asheville, N. C., and Murison Dunn, Richmond, Ky.

16. The Physiologic Basis for Certain Disturbances in the Action of the Larynx.
Elmer L. Kenyon, Chicago.
Discussion to be opened by Smiley Blanton, Madison, Wis.

17. The Need of Standards of Training for Specialists, General Practitioners and Teachers of Speech Correction (Moving Picture Demonstration).
Charles G. Stivers, Los Angeles.
Discussion to be opened by Burt R. Shurley, Detroit.

18. The Correction of External Deformities of the Nose Through the Intranasal Approach (Moving Picture Demonstration). Sidney Israel, Houston, Texas.
Discussion to be opened by Thomas E. Carmody, Denver.

SECTION ON DISEASES OF CHILDREN

MEETS IN ODEON THEATER

OFFICERS OF SECTION

Chairman—Emanuel C. Fleischner, San Francisco.
Vice Chairman—William A. Mulherin, Augusta, Ga.
Secretary—Edgar J. Huenekens, Minneapolis.
Executive Committee—Fritz B. Talbot, Boston; Frank C. Neff, Kansas City, Mo.; Emanuel C. Fleischner, San Francisco.

Wednesday, May 24—9 a. m.

1. Hyperacidity of the Stomach Contents in Children (Lantern).
Charles Gilmore Kerley and Edward J. Lorenze, Jr., New York.
Discussion to be opened by John Zahorsky, St. Louis.

2. Immunity Results Obtained with Mixture of Diphtheria Toxin-Antitoxin in the Public Schools of New York City (Manhattan and the Bronx and in various institutions). Abraham Zingher, New York.
Discussion to be opened by Frank C. Neff, Kansas City, and E. C. Fleischner, San Francisco.

3. Physical Unfitness in Children (with Slides).
William R. P. Emerson, Boston.
Discussion to be opened by W. H. O. Hoffmann, Chicago.

4. Effects of Tonsillectomy on General Health in Five Thousand Children. Albert D. Kaiser, Rochester, N. Y.
Discussion to be opened by Julius H. Hess, Chicago.

5. Neurosurgical Problems in Childhood.
Howard C. Naffziger, San Francisco.
Discussion to be opened by Alfred W. Adson, Rochester, Minn.

6. Diabetes Mellitus in Children Following Infection.
H. Leonard Bolen, Chicago.
Discussion to be opened by Charles G. Kerley, New York, and Fritz B. Talbot, Boston.

Thursday, May 25—9 a. m.

7. Chairman's Address. E. C. Fleischner, San Francisco.

8. An Analysis of Private Case Records with Reference to Certain Phases of Breast Feeding.
Henry Dietrich, Los Angeles.
Discussion to be opened by I. A. Abt, Chicago.

9. A Study of Milk Ingestion in Relation to Changes in the Body-Weight of New-Born Infants.
F. L. Adair and C. A. Stewart, Minneapolis.
Discussion to be opened by F. W. Schlutz, Minneapolis.

10. Gastric Findings in Children with Anorexia.
Louis W. Sauer, L. D. Minsk and W. G. Alexander, Evanston, Ill.
Discussion to be opened by B. S. Veeder, St. Louis.

11. A Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding: Report of Cases (Lantern Demonstration).
Harry Lowenburg, Philadelphia.
Discussion to be opened by I. A. Abt, Chicago.

12. A Study in an Asylum on the Physical and Mental Status of Its Inmates.
L. R. DeBuys and Maud Loeber, New Orleans.
Discussion to be opened by O. W. Rowe, Duluth.

Friday, May 26—9 a. m.

Election of Officers.

13. A Few Observations on Malaria in Infancy.
W. A. Mulherin and F. X. Mulherin, Augusta, Ga.
Discussion to be opened by William Weston, Columbia, S. C., and J. Ross Snyder, Birmingham, Ala.

14. Experimental Studies of the A Vitamin: Clinical and Anatomic Effects in Puppies and Rats.
C. Ulysses Moore, Portland, Ore.
Discussion to be opened by E. A. Park, New Haven, Conn.

15. The Use of Radiant—Heat—Light—in the Treatment of Otitis Media. H. J. Gerstenberger, Cleveland.

16. Drug Therapy in Pyelitis.
H. F. Helmholz, Rochester, Minn.
Discussion to be opened by W. McKim Marriott, St. Louis, and F. C. Rodda, Minneapolis.

17. Urologic Problems in Pediatrics.
Herman Kretschmer, Chicago.
Discussion to be opened by Clifford G. Grulee and Charles Schott, Chicago.

18. Observations on the Etiology and Pathology of Chorea in Childhood. Louis C. Schroeder, New York.
Discussion to be opened by H. F. Helmholz, Rochester, Minn.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN ODEON THEATER BUILDING

OFFICERS OF SECTION

Chairman—Carl Voegtlin, Washington, D. C.
Vice Chairman—Cary Eggleston, New York.
Secretary—Paul D. White, Boston.
Executive Committee—George W. McCoy, Washington, D. C.; Leonard G. Rowntree, Rochester, Minn.; Carl Voegtlin, Washington, D. C.

Wednesday, May 24—9 a. m.

1. Chairman's Address: Chemotherapy.
Carl Voegtlin, Washington, D. C.

2. The Therapeutic Use of Oxygen.
Alvan L. Barach, New York.

3. The Pharmacology of Mercury.
William Salant, Augusta, Ga.

4. The Treatment of Hypertension.
Nellis B. Foster, New York.

5. The Present Status of the Treatment of Tuberculosis.
F. M. Pottenger, Monrovia, Calif.

6. Optimal Food Mixtures for Diabetic Patients.
Russell M. Wilder, Rochester, Minn.

Thursday, May 25—9 a. m.

Election of Officers.

7. The Therapeutic Use of Dyes.
John W. Churchman, New York.

8. Quartz Light Therapy.
E. Lawrence Oliver, Boston.

9. Physiologic Chemistry of Iodids.
E. D. Osborne, Rochester, Minn.

10. Present Status of the Use of Drugs in Heart Disease, with Especial Reference to Quinidin.
PAUL D. WHITE, Boston.
11. The Present Status of Radiotherapy, with Particular Reference to Intensive Roentgen-Ray Treatment.
SAMUEL STERN, New York.
12. Clinical and Laboratory Investigations of the Effect of Drugs on the Involuntary Nervous System.
C. C. LIEB and H. T. HYMAN, New York.

Friday, May 26—2 p. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON INTERNAL SECRETIONS

13. Endocrinology.
LEWELLYS F. BARKER, Baltimore.
14. Conditions Controlling Internal Secretion.
WALTER B. CANNON, Boston.
15. Metabolic Effects of the Glands of Internal Secretion.
JOSEPH C. AUB, Boston.
16. Hypofunction and Hyperfunction of the Glands of Internal Secretion. A. J. CARLSON, Chicago.
17. Principles of Endocrinology Applicable to Organotherapy.
R. G. HOSKINS, Columbus, Ohio.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN ODEON THEATER BUILDING

OFFICERS OF SECTION

Chairman—JOHN A. KOLMER, Philadelphia.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—HOWARD T. KARSNER, Cleveland; EDWIN R. LECOUNT, Chicago; JOHN A. KOLMER, Philadelphia.

Wednesday, May 24—2 p. m.

1. Chairman's Address: State Licensure Applied to Technicians, JOHN A. KOLMER, Philadelphia.
2. Standardization of Diagnostic Laboratories.
JOSIAH J. MOORE, Chicago.
3. Intestinal Rate and the Form of the Feces.
FRANCIS LOWELL BURNETT, Boston.
4. Does Cancer Arise in Gastric Ulcer?
WILLIAM CARPENTER MACCARTY, Rochester, Minn.
5. Acute Dilatation of Stomach.
LESTER DRAGSTEDT, Chicago.
6. Pulmonary Aspiration of Particular Matter Normally and During Anesthesia. HARRY J. CORPER, Denver.
7. A Study on the Relation of the Thyroid to the Pancreatic Diabetes in Dogs.
G. A. FRIEDMAN and JULIUS GOTTESMAN, New York.

Thursday, May 25—2 p. m.

Election of Officers.

8. The Production of Arteriosclerosis in Rabbits Caused by Feeding Diets Rich in Animal Proteins.
L. H. NEWBURGH, Ann Arbor, Mich.
9. The Congenital Factor in Chronic Renal Disease.
EDWARD WEISS, Philadelphia.
10. Discussion of Secondary Hemorrhages in the Brain.
EDWIN R. LECOUNT, Chicago.
11. Diagnosis and Pathologic Physiology of Beginning Myocardial Inefficiency.
M. A. MORTENSEN, Battle Creek, Mich.
12. Cultivation of Trichomonas and the Question of Specific Differentiation. KENNETH M. LYNCH, Dallas, Texas.
13. Recent Additions to the Knowledge of Ascariasis.
B. H. RANSOM, Washington, D. C.
14. Pneumococcus Antibody Solutions Specific Against Types I, II and III.
F. M. HUNTOON, Glenolden, Pa.

Friday, May 26—2 p. m.

JOINT MEETING OF THE SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON INTERNAL SECRETIONS

15. Endocrinology. LEWELLYS F. BARKER, Baltimore.
16. Conditions Controlling Internal Secretion.
WALTER B. CANNON, Boston.
17. Metabolic Effects of the Glands of Internal Secretion.
JOSEPH C. AUB, Boston.
18. Hypofunction and Hyperfunction of the Glands of Internal Secretion. A. J. CARLSON, Chicago.
19. Principles of Endocrinology Applicable to Organotherapy.
R. G. HOSKINS, Columbus, Ohio.

Discussion to be opened by WILLIAM ENGELBACH, St. Louis; L. G. ROWNTREE, Rochester, Minn.; DAVID L. EDSALL and J. HOWARD MEANS, Boston; JOSEPH A. CAPPS, Chicago, and GEORGE DRAPER, New York.

SECTION ON STOMATOLOGY

MEETS IN PARISH HOUSE, ST. PETER'S EPISCOPAL CHURCH

OFFICERS OF SECTION

Chairman—HERBERT A. POTTS, Chicago.
Vice Chairman—ROBERT H. IVY, Philadelphia.
Secretary—GEORGE V. I. BROWN, Milwaukee.
Delegate—EUGENE S. TALBOT, Chicago.
Executive Committee—VILRAY P. BLAIR, St. Louis; HENRY S. DUNNING, New York; HERBERT A. POTTS, Chicago.
(Reporter—MISS MARGARET MALONEY)

Wednesday, May 24—2 p. m.

1. What Teeth Should Be Extracted?
ARTHUR D. BLACK, Chicago.
2. Orthodontia. Six-Year-Old Molar. Early Recognition of Maleruption. Sequela.
FREDERICK B. NOYES, Chicago.
3. Infections and Inflammation of the Investing Tissues of the Teeth-Gingivae, Peridental Membrane, Cementum and Alveolar Process. HERBERT A. POTTS, Chicago.
4. Studies on Decalcification of the Teeth and Bones and Regeneration of Bone Through the Diet.
PERCY R. HOWE, Boston.
5. The Effect of Improperly Balanced Diet.
E. V. MCCOLLUM, Baltimore.
6. The Effect of Defective Diets and Teeth on the Calcium Phosphorus and Organic Factors Balance Carriers Like Attaching Tissue and Maxillary Defects.
CLARENCE J. GRIEVES, Baltimore.
7. Structure of Bone in Relation to Diet: The Calcium Phosphorus and Organic Factors Balance in Rickets and Relative Conditions.
PAUL G. SHIPLEY, Baltimore.

Thursday, May 25—2 p. m.

8. Studies on the Habitat and Pathogenicity of B. Fusiformis.
D. J. DAVIS and ISADORE PILOT, Chicago.
9. Observation of Fractures of the Mandible.
ROBERT H. IVY, Philadelphia.
10. The Treatment of Nonunion of Fractures of the Mandible by Free Bone Grafts (Lantern Demonstration).
FULTON RISDON, Toronto, Canada.
11. Anatomic and Prosthetic Factors Involved in the Development and Correction of Extensive Cysts of the Maxilla (Lantern Demonstration).
HUGH W. MACMILLAN, Cincinnati.
12. Syphilis of the Mouth.
WILLIAM ALLEN PUSEY, Chicago.
13. The Pathologic Significance of the More Frequent Tumors of the Mouth and Jaws (Lantern Demonstration).
MORRIS I. SCHAMBERG, New York.

Friday, May 26—2 p. m.

Election of Officers

14. Prophylaxis of Malignant Growths of the Mouth, Face and Jaws. JOSEPH RILUS EASTMAN, Indianapolis.
15. Cancer of the Tongue: Some Pitfalls in Diagnosis and Treatment.
WILLIAM SEAMAN BAINBRIDGE, U. S. Navy, New York.
16. Atypical Operation for Tumors of Mouth and Jaw.
LEWIS L. MCARTHUR, Chicago.
17. Electrocoagulation of Malignant Tumors of the Mouth and Oropharynx and the Effect of This Procedure upon Large Adjacent Blood Vessels and Nerves.
F. J. NOVAK, Chicago.

Discussion on Papers 14, 15, 16 and 17 to be opened by ALBERT J. OCHSNER, Chicago; JOSEPH BLOODGOOD, Baltimore; GORDON NEW, Rochester, Minn., and THOMAS L. GILMER, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN ST. LOUIS UNIVERSITY LAW SCHOOL AUDITORIUM

OFFICERS OF SECTION

Chairman—Peter Bassoe, Chicago.
Vice Chairman—Walter F. Schaller, San Francisco.
Secretary—James B. Ayer, Boston.
Executive Committee—Archibald Church, Chicago; Arthur S. Hamilton, Minneapolis; Peter Bassoe, Chicago.

Wednesday, May 24—9 a. m.

1. Chairman's Address. Peter Bassoe, Chicago.
2. Work and Plans of the National Committee for Mental Hygiene. Frankwood E. Williams, New York.
3. A Study in Constitutional Psychopathic Inferiority.
   John W. Visher, Waukesha, Wis.
4. The Rôle of So-Called Physical Therapeutics in Nervous and Mental Disease.
   J. Madison Taylor, Philadelphia.
5. The Diagnosis of Epilepsy.
   Hugh T. Patrick and David M. Levy, Chicago.
6. Further Experiences with Luminal in Epilepsy.
   Julius Grinker, Chicago.
7. Methyl Alcohol Intoxication.
   A. L. Skoog, Kansas City, Mo.

Thursday, May 25—9 a. m.

8. Magnus and de Kleijn Phenomena in Brain Lesions of Man. I. Leon Meyers, Los Angeles.
9. Experimental Vestibular Tremors.
   C. L. Woolsey, Boston.
10. The Localization of Brain Tumors.
    Walter E. Dandy, Baltimore.
11. Mixed-Cell Sarcoma of the Brain, with Recovery Following Third Operative Interference.
    Leo M. Crafts, Minneapolis.
12. Glioma of the Cerebral Hemispheres. A Comparative Study of Two Cases.
    Tom B. Throckmorton, Des Moines, Iowa.
13. Malignant Tumors of the Nasopharynx with Extension to the Nervous System.
    Henry W. Woltman, Rochester, Minn.
14. Review of a Series of Operable Tumors of the Spinal Cord from the Standpoint of Diagnosis and Technic.
    Charles H. Frazier, Philadelphia.
15. Some Experimental Data Concerning the Circulation of the Cerebrospinal Fluid.
    H. C. Solomon and Lloyd J. Thompson, Boston.

Friday, May 26—9 a. m.

Election of Officers

16. What Adavantages Are to Be Gained by Adding to Our Present Conception of Muscular Movements Some Terminology Indicating Their Embryologic Grouping and Nerve Supply?
    Walter M. Kraus, New York.
17. Accessory Muscle Movements in Deltoid Paralysis.
    Lewis J. Pollock, Chicago.
18. Results of Experimental Study in the Etiology of Epidemic Encephalitis.
    E. C. Rosenow, Rochester, Minn.
19. The Sequelae of Epidemic Encephalitis.
    William House, Portland, Ore.
20. Psychoses Associated with Sydenham's Chorea.
    E. M. Hammes, St. Paul.
21. Heart and Arch in Neurosyphilis.
    Charles A. McDonald, Providence, R. I.
22. The Midbrain in Neurosyphilis.
    George M. Eckel, Hot Springs, Ark.
23. Pellagra: A Neuropathologic Study.
    Lawson G. Lowrey, Iowa City.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN UNION METHODIST EPISCOPAL CHURCH

OFFICERS OF SECTION

Chairman—Ernest Dwight Chipman, San Francisco.
Vice Chairman—Harry G. Irvine, Minneapolis.
Secretary—Harold Newton Cole, Cleveland.
Executive Committee—Oliver S. Ormsby, Chicago; Walter J. Highman, New York; Ernest Dwight Chipman, San Francisco.

Wednesday, May 24—9 a. m.

SYMPOSIUM ON SYPHILIS

1. Chairman's Address.
   Ernest Dwight Chipman, San Francisco.
2. A Statistical Report on the Examination of 460 Cases with Genital Lesions. James R. Driver, Cleveland.
3. The Kahn Precipitin Test in the Diagnosis of Syphilis.
   H. L. Keim and Udo J. Wile, Ann Arbor, Mich.
4. Studies in Asymptomatic Neurosyphilis. IV. The Apparant Rôle of Immunity in the Genesis of Neurosyphilis.
   Albert Keidel, Baltimore.
5. A New Mercurial for the Intravenous Treatment of Syphilis: First Report of Chemical, Animal, and Clinical Experiments and Results.
   E. C. White, J. H. Hill, J. E. Moore, and H. H. Young, Baltimore.
   Discussion to be opened by Martin F. Engman, St. Louis; Mihran B. Parounagian, New York, and Richard L. Sutton, Kansas City, Mo.
6. Ulcerating Granuloma (Granuloma Inguinale) (Lantern Demonstration). Herman Goodman, New York.
   Discussion to be opened by Joseph Grindon, St. Louis.
7. Sporotrichoses. Frank W. Cregor, Indianapolis.
8. Pityriasis Rubra Pilaris—Familial Type.
   Erwin P. Zeisler, Chicago.

Thursday, May 25—9 a. m.

9. Lupus Erythematosus Acutus Disseminatus Hemorrhagicus. Moses Scholtz, Los Angeles.
10. Leukoplakia (Lantern Demonstration).
    H. H. Hazen and F. J. Eichenlaub, Washington, D. C.
11. Local Blastomycosis.
    Marcus Haase, Clement H. Marshall and E. R. Hall, Memphis, Tenn.
    Discussion to be opened by M. L. Graves, Galveston, Texas, and Francis E. Senear, Chicago.
12. Experience with Chaulmoogra Oil Derivatives in the Treatment of Leprosy at San Francisco.
    Howard I. Morrow, Ernest L. Walker and Hiram E. Miller, San Francisco.
    Discussion to be opened by William T. Corlett, Cleveland.
13. The Physical Principles Underlying the Development of High Voltage Roentgen-Ray Apparatus.
    C. N. Moore, Schenectady, N. Y.
14. Industrial Dermatoses at the Massachusetts General Hospital. C. Guy Lane, Boston.
15. A Peculiar Discoloration of the Skin Probably Resulting from Mercurial Compounds (Calomel) in Proprietary Face Creams.
    W. H. Goeckerman, Rochester, Minn.

Friday, May 26—9 a. m.

Election of Officers.

SYMPOSIUM ON MALIGNANCY

16. The Tissue Reaction in Malignant Epitheliomas of the Skin: Its Value in Diagnosis and in Prognosis (Lantern Demonstration).
    Howard James Parkhurst, Toledo, Ohio.
17. Expectancy in Roentgen Treatment of Skin Lesions from the Pathologic Standpoint.
    Walter James Highman and Ray H. Rulison, New York.
18. Carcinoma of the Tongue and Its Treatment with Radium.
    Laurence Taussig, San Francisco.
19. Surgical Treatment of Cancer of the Lip (Lantern Demonstration).
    Joseph C. Bloodgood, Baltimore.
20. Treatment of Cancer of the Lip by Electrocoagulation (Lantern Demonstration).
    G. E. Pfahler, Philadelphia.
21. The Treatment of Cancer of the Lip by Radiotherapy.
    Everett S. Lain, Oklahoma City.
    Discussion to be opened by William Allen Pusey, Chicago; Douglass A. Quick, New York, and William H. Mook, St. Louis.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN MUSICIANS' HALL

OFFICERS OF SECTION

Chairman—S. W. Welch, Montgomery, Ala.
Vice Chairman—Bernard W. Carey, Boston.
Secretary—Waller S. Leathers, University, Miss.
Executive Committee—James A. Hayne, Columbia, S. C.; John D. McLean, Philadelphia; S. W. Welch, Montgomery, Ala.

Wednesday, May 24—9 a. m.

1. Chairman's Address: Training in Sociology and Public Health an Essential in Medical Education.
S. W. Welch, Montgomery, Ala.
2. The County as a Health Unit.
A. J. Warren, Topeka, Kan.
3. Obligations of Preventive Medicine.
John D. McLean, Harrisburg, Pa.
4. The Attitude of the General Practitioner Toward Established and Progressive Health Policies.
W. A. Dearman, Long Beach, Miss.
5. The Mutual Interest of Profession and Public.
W. S. Rankin, Raleigh, N. C.
6. Politics and the Health Officer.
Matthias Nicoll, Albany, N. Y.
7. Some Reflections on the Recent Education of Health Officers' Conference. Otto Geier, Cincinnati.

Thursday, May 25—9 a. m.

8. Community Health Fundamentals.
John Dill Robertson, Chicago.
9. Tuberculosis Among the ex-Service Men, with Special Reference to Its Bearing on Public Health.
H. S. Cumming, Washington, D. C.
10. The Contribution of University Health Services to Public Health. J. Howard Beard, Urbana, Ill.
11. Legal Status of Physicians and Sectarians.
Frederick R. Green, Chicago.
12. Immunization Against Diphtheria and the Use of Toxin-Antitoxin. William H. Park, New York.
13. Seasonal Distributions of Deaths and Some Conclusions Based Thereon. W. A. Evans, Chicago.
14. Study of Ancylostomiasis on Brazilian Coffee Fazendas.
Wilson G. Smillie, São Paulo, Brazil.
15. Detection of Typhoid Carriers with Report of Four Outbreaks. Joseph N. Gehlen, Minneapolis.

Friday, May 26—9 a. m.

Election of Officers.

16. A Discussion of Malaria Control Operations in the Ultimate Suppression of the Disease.
C. C. Bass, New Orleans.
17. Health Work of the League of Nations.
Wickliffe Rose, New York.
18. Nutrition of the Schoolchild.
Taliaferro Clark, Washington, D. C.
19. The Sheppard-Towner Act in Relation to Public Health.
Anna E. Rude, Washington, D. C.
20. Some Notes on the Effectiveness of the Venereal Disease Program. Harry Garfield Irvine, Minneapolis.
21. Health Centers of the Massachusetts-Halifax Health Commission.
B. Franklin Royer, Halifax, Nova Scotia.
22. Acclimatization and Mortality Problems of the South American Tropics.
Frederick L. Hoffman, Newark, N. J.

SECTION ON UROLOGY

MEETS IN UNION METHODIST EPISCOPAL CHURCH

OFFICERS OF SECTION

Chairman—James A. Gardner, Buffalo.
Vice Chairman—A. J. Crowell, Charlotte, N. C.
Secretary—Herman L. Kretschmer, Chicago.
Executive Committee—William E. Lower, Cleveland; Richard F. O'Neil, Boston; James A. Gardner, Buffalo.

Wednesday, May 24—2 p. m.

1. The Nitrogen Retention in Bright's Disease: Its Significance for Diagnosis and Prognosis.
Hilding Beglund, Stockholm, Sweden.
2. Present Status of Blood Chemistry in Surgical Lesions of the Kidney.
John R. Caulk and William Olmsted, St. Louis.
3. The Significance of Chemical Blood Findings in Urologic and Allied Conditions.
J. Bentley Squier, New York.
4. The Value of the Estimation of the Blood Content of Urea, Nonprotein Nitrogen, Creatinin and Carbon Dioxid as an Index of Renal Function.
J. T. Geraghty and William A. Frontz, Baltimore.
5. The Relative Value of Indigocarmin as a Functional Kidney Test and Blood Chemistry in Urological Surgery.
B. A. Thomas, Philadelphia.
Discussion on Papers 1, 2, 3, 4 and 5 to be opened by L. G. Rowntree, Rochester, Minn.; William Engelbach, St. Louis; Hugh Cabot, Ann Arbor, Mich., and Victor C. Meyers, New York.
6. The Treatment of Urinary Incontinence in the Female.
Edward L. Young, Jr., Boston.
Discussion to be opened by Hugh Cabot, Ann Arbor, Mich.
7. Hematurias of Obscure Origin.
A. Raymond Stevens, New York.
Discussion to be opened by Herman L. Kretschmer, Chicago.

Thursday, May 25—2 p. m.

8. Chairman's Address: Socialistic Tendencies in Medicine.
James A. Gardner, Buffalo.
9. Intravesical Management of Obstructions in the Ureter, with Special Reference to Stone and Stricture.
H. W. E. Walther, New Orleans.
Discussion to be opened by L. R. Wharton, Baltimore, and George R. Livermore, Memphis, Tenn.
10. Abdominal Pain Due to Ureteral Obstruction and Its Treatment (Lantern Demonstration).
A. J. Crowell, Charlotte, N. C.
Discussion to be opened by Bransford Lewis, St. Louis, and E. G. Ballenger, Atlanta, Ga.
11. Ureteral Transplantation. Its Indications, Routes and an Experimental Study of Duodenal Reabsorption.
Frank Hinman, San Francisco.
Discussion to be opened by William E. Lower, Cleveland, and George G. Smith, Boston.
12. Standard Kidney Operations, with Renal Function Studies: A Consideration of Reversible and Irreversible Metabolism in Dogs.
H. W. Plaggemeyer and R. E. Cummings, Detroit.
Discussion to be opened by John R. Caulk, St. Louis.
13. Surgical Indications with Fused (Horseshoe) Kidney.
E. S. Judd, William F. Braasch and A. J. Scholl, Rochester, Minn.
Discussion to be opened by Henry G. Bugbee, New York.
14. Urography as a Method of Diagnosis (Lantern Demonstration). J. H. Morrissey, New York.
Discussion to be opened by O. S. Lowsley, New York.

Friday, May 26—2 p. m.

Election of Officers.

15. A Technic for Doing Perineal Prostatectomy (Lantern Demonstration). Arthur B. Cecil, Los Angeles.
Discussion to be opened by Hugh H. Young, Baltimore.
16. Spinal Anesthesia in Prostatectomy.
Arthur L. Chute, Boston.
Discussion to be opened by George G. Smith, Boston.
17. Carcinoma of the Prostate.
Robert H. Herbst and Alvin Thompson, Chicago.
Discussion to be opened by Henry G. Bugbee, New York.
18. The Tabetic Bladder—from the Standpoint of the Urologist.
Budd C. Corbus and Vincent J. O'Conor, Chicago.
Discussion to be opened by H. W. Plaggemeyer, Detroit.
19. Bladder Carcinoma. Statistics of Radium Removal versus Surgical Removal.
Benjamin S. Barringer, New York.
20. Urology and the General Surgeon.
Clinton K. Smith, Kansas City, Mo.
Discussion to be opened by John Caulk, St. Louis.
21. Prostatic Massage: A Practical and Theoretical Discussion. George F. Farnam, Santa Barbara, Calif.
Discussion to be opened by Bransford Lewis, St. Louis.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ST. LOUIS UNIVERSITY LAW SCHOOL AUDITORIUM

OFFICERS OF SECTION

Chairman—H. Winnett Orr, Lincoln, Neb.
Vice Chairman—Willis C. Campbell, Memphis, Tenn.
Secretary—H. B. Thomas, Chicago.
Executive Committee—George W. Hawley, New York; Melvin S. Henderson, Rochester, Minn.; H. Winnett Orr, Lincoln, Neb.

Wednesday, May 24—2 p. m.

1. The Pathogenesis and Management of Certain Dyskinesias Irremediable by Operative or Prothetic Measures. Tom A. Williams, Washington, D. C.
2. An Apparatus for Fixation of Fractures of the Femur. Case Reports (Lantern Demonstration). Charles S. Venable, San Antonio, Texas.
3. Indication for Operation on Fractured Femur. Frederick C. Kidner, Detroit.
4. Poor Functional Results in the Treatment of Fractures. William O'Neill Sherman, Pittsburgh.
5. Treatment of Industrial Accidents of the Knee. R. Wallace Billington, Nashville, Tenn.
6. The Present State of Arthroplasties. William S. Baer, Baltimore.
7. Teaching of the Fundamentals of Surgery from the Point of View of the Graduate School. Louis B. Wilson, Rochester, Minn.

Thursday, May 25—2 p. m.

8. The Results of Ankylosing Operations in Tuberculosis of the Spine (Lantern Demonstration). Arthur L. Fisher, San Francisco.
9. Bony Bridging in Tuberculosis of the Spine. Robert B. Cofield, Cincinnati.
10. Chairman's Address: The Fundamental Principles of Orthopedic Reconstruction and Industrial Surgery; The Real Lessons of the Great War. H. Winnett Orr, Lincoln, Neb.
11. Surgery of the Hand (Lantern Demonstration). Allen B. Kanavel, Chicago.
12. Standardizing the End-Results in Traumatic Surgery. John J. Moorhead, New York.
13. Bone Lesions of Twenty Different Conditions (Lantern Demonstration). Stewart L. McCurdy, Pittsburgh.
14. The Application of the Stabilizing Operation to the Surgical Treatment of Paralytic Flatfoot. Michael Hoke, Atlanta, Ga.

Friday, May 26—2 p. m.

Election of Officers.

15. A Report of the Year's Work on Crippled Children in Ohio. B. G. Chollett, Toledo, Ohio.
16. Pseudohypertrophic Muscular Paralysis: Report of Twelve Cases. Philip Lewin, Chicago.
17. Premature Infants: Conditions of the Nervous, Osseous and Muscular Systems Peculiar to Them (Lantern Demonstration). Julius H. Hess, Chicago.
18. Fractures of the Carpal Scaphoid. A. F. Tyler, Omaha.
19. The Importance of Prevention and Early Treatment in Disabilities Due to Injuries of the Lower Back. Harold R. Conn, Akron, Ohio.
20. Functional Aspects of Birth Injuries of the Central Nervous System. Frank R. Ober and Bronson Crothers, Boston.
21. After-Care of Infantile Paralysis. Charlton Wallace, New York.
22. Remarks on the Treatment of Early Infantile Paralysis. Henry O. Feiss, Cleveland.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN MUSICIANS' HALL

OFFICERS OF SECTION

Chairman—H. W. Soper, St. Louis.
Vice Chairman—J. Rawson Pennington, Chicago.
Secretary—Franklin W. White, Boston.
Executive Committee—Frank Smithies, Chicago; Louis J. Hirschman, Detroit; H. W. Soper, St. Louis.

Wednesday, May 24—2 p. m.

1. Chairman's Address. Horace W. Soper, St. Louis.
2. A Consideration of Chronic Appendicitis. John A. Lichty, Pittsburgh.
3. Enteroparesis. W. Howard Barber, New York.
4. The Value of Entero-Antigens in Gastro-Intestinal Disorders. G. R. Satterlee, New York.
5. The Value of Temporary Colostomy. Louis J. Hirschman, Detroit.
6. Age and Site Incidence of Carcinoma of the Rectum and Pelvic Colon. J. Rawson Pennington, Chicago.

Thursday, May 25—2 p. m.

Election of Officers.

SYMPOSIUM ON PEPTIC ULCER

7. Gastroptosis: A Study of Five Hundred Cases. Seale Harris, Birmingham, Ala.
8. New Methods of Studying Gastro-Intestinal Peristalsis. Walter C. Alvarez, San Francisco.
9. The Value and Limitations of Roentgen-Ray Diagnosis in Digestive Diseases. E. H. Gaither, Baltimore.
10. Achylia Gastrica. Joseph Sailer, Philadelphia.
11. Nonsurgical Quadrant Treatment of Internal Hemorrhoids and Prolapse of the Rectum. Charles Aaron, Detroit.
12. A Suggested Classification for Anorectal Prolapse. Collier F. Martin, Philadelphia.

Friday, May 26—2 p. m.

JOINT MEETING OF THE SECTIONS ON SURGERY, GENERAL AND ABDOMINAL, AND ON GASTRO-ENTEROLOGY AND PATHOLOGY

13. The Relative Value of Medical and Surgical Treatment of Gastric and Duodenal Ulcer and the Indication for Each. Arthur Dean Bevan, Chicago.
14. The Relative Value of Medical and Surgical Treatment in Gastric and Duodenal Ulcer. Bertram W. Sippy, Chicago.
15. Progress in the Handling of Peptic Ulcer. W. J. Mayo, Rochester, Minn.
16. The Relative Rôles of Medical and Surgical Treatment in Gastric and Duodenal Ulcer. Thomas R. Brown, Baltimore.

SECTION ON MISCELLANEOUS TOPICS

MEETS IN PARISH HOUSE, ST. PETER'S EPISCOPAL CHURCH

OFFICERS OF MEETING ON ANESTHESIA

Chairman—Isabella C. Herb, Chicago.
Vice Chairman—David E. Hoag, Pueblo, Colo.
Secretary—F. H. McMechan, Avon Lake, Ohio.

Wednesday, May 24—9 a. m.

1. Chairman's Address: Postoperative Lung Complications. Isabella C. Herb, Chicago.
2. Relation of the Anesthetic to Pulmonary Abscess Following Nose and Throat Surgery. Cline N. Chipman, Washington, D. C.
   Discussion to be opened by A. H. Miller, Providence, R. I.; R. Stuart Adams, San Antonio, Texas, and Frances E. Haines, Chicago.
3. Clinical and Experimental Studies on the Cerebrospinal Tension in Relation to Surgical and Anesthetic Risk. Harry Jackson, Chicago.
   Discussion to be opened by E. I. McKesson, Toledo, Ohio, and F. H. McMechan, Avon Lake, Ohio.
4. An Experimental Study of the Epinephrin Content of the Suprarenal Gland Under Anesthesia and in Shock. J. F. Corbett, Minneapolis.
   Discussion to be opened by Nettie Klein, Texarkana, Texas; Ansel M. Caine, New Orleans, and A. E. Rives, East St. Louis, Ill.
5. Synergistic Analgesia: Clinical Observations. J. M. Rector, Jersey City, N. J.
   Discussion to be opened by J. T. Gwathmey, New York, and Thomas J. Collier, Atlanta, Ga.
6. The Effects of the Repeated Administration of Anesthetics on Blood Catalase. W. E. Burge, Urbana, Ill.
   Discussion to be opened by David E. Hoag, Pueblo, Colo., and Morris H. Clark, Kansas City, Mo.

COMMERCIAL EXHIBITS

A PRACTICAL EDUCATIONAL FEATURE

In the good old days when the "ethical proprietary" was the principal feature of the commercial exhibit, the exhibitor who was most generous with his samples was usually most popular: Some firms would even attempt a more spiritual, if less ethical appeal by giving a handy bottle of spiritus frumenti.

But times change and so do customs. While business firms exhibit at the Convention now, as in the past, essentially to promote sales to physicians, their salesmanship is of a different quality. It is based on the more modern idea of service and helpfulness. Many a time the "salesman," in the exhibits as now conducted, is found to be a highly trained scientist, inventor or research student.

The visitor to Exhibit Hall this year will thus meet in one building a large group of experts or men specially trained in the various medical manufacturing lines; he will also find there perhaps the largest and most varied collection of articles for physicians' use assembled anywhere in one place. In addition he will have opportunity to actually inspect most of the new and important developments in the armamentarium of the profession. For example: a few hours spent in visiting the book publishers' exhibits will enable one to examine practically all of the new medical works and new editions that have been issued during the past year. Some exhibitors will even be prepared to give out advance pages of forthcoming works. In instruments and apparatus, important developments have been made and each exhibitor will prominently feature the new types which he is now prepared to furnish. Physicians can not only see these devices, but can secure much valuable information on their uses. The same may be said of pharmaceutical and biologic preparations. Many products recently accepted by the Council on Pharmacy and Chemistry will be on display and their uses and advantages explained. The X-ray exhibits also promise many new devices and improvements which, by saving time or money or by bringing better results, will make a strong appeal to the roentgenologist. In all there will be representatives from more than one hundred firms. The opportunity of meeting these men with so little effort and under such favorable circumstances makes it well worth while for every physician to *take the exhibits seriously*.

Visitors should not enter Exhibit Hall with the feeling that it is a sales room. It is rather a place for securing information and seeing demonstrations. Physicians may feel free to examine any objects in which they are interested without fear of being beguiled or coerced into making purchases.

Following is a list of firms that will exhibit, as well as a description of what a number of them will have to show. It is unfortunate that descriptions of all the exhibits were not secured, but enough are given here to indicate that it is well worth one's while to spend considerable time in Exhibit Hall. One should not attempt to view all the exhibits at a single visit. The hall will be open for visiting physicians from Monday noon to Friday noon. Regular daily opening hour will be 8 a. m.; closing 6 p. m. Frequent visits to Exhibit Hall will be time well spent; the exhibits will really have many educational features. Moolah Temple is also the General Headquarters for the Annual Session.

APPARATUS

W. A. Baum Co., Inc., 100 Fifth Avenue, New York. Physicians who have often been perplexed by blood pressure readings which could not be reconciled with the patient's other symptoms should not fail to visit Space 22. There will be shown the origin of many such inconsistencies and how to eliminate them. It will be well worth while to see this interesting demonstration and receive a free copy of a booklet on the subject, prepared by the American Institute of Medicine.

The Wilmot Castle exhibit will feature in Space 69 an electric sterilizer with a new automatic shutoff that has withstood over 500 tests for overheating. This new automatic heat control employs no fuse pin, neither is there any thermostatic metal. The current is broken while there is still water in the sterilizer, so that both instruments and the sterilizer are protected. Physicians will also find on display all the other models of Castle Sterilizers.

DeVilbiss Nose and Throat Sprays, as in the many years past, will be exhibited in an interesting and creditable manner. There will be a full showing of these well-known sprays, both for professional use and prescription purposes. And it goes without saying, that every doctor attending the St. Louis gathering will be cordially welcomed at the DeVilbiss Booth 136.

The Foregger Company will show in Space 111 new anesthetic appliances as designed by Drs. Rives, East St. Louis; Richardson, Boston; Oden-Foshee, Chicago and New York, and Sanford and Gwathmey, New York.

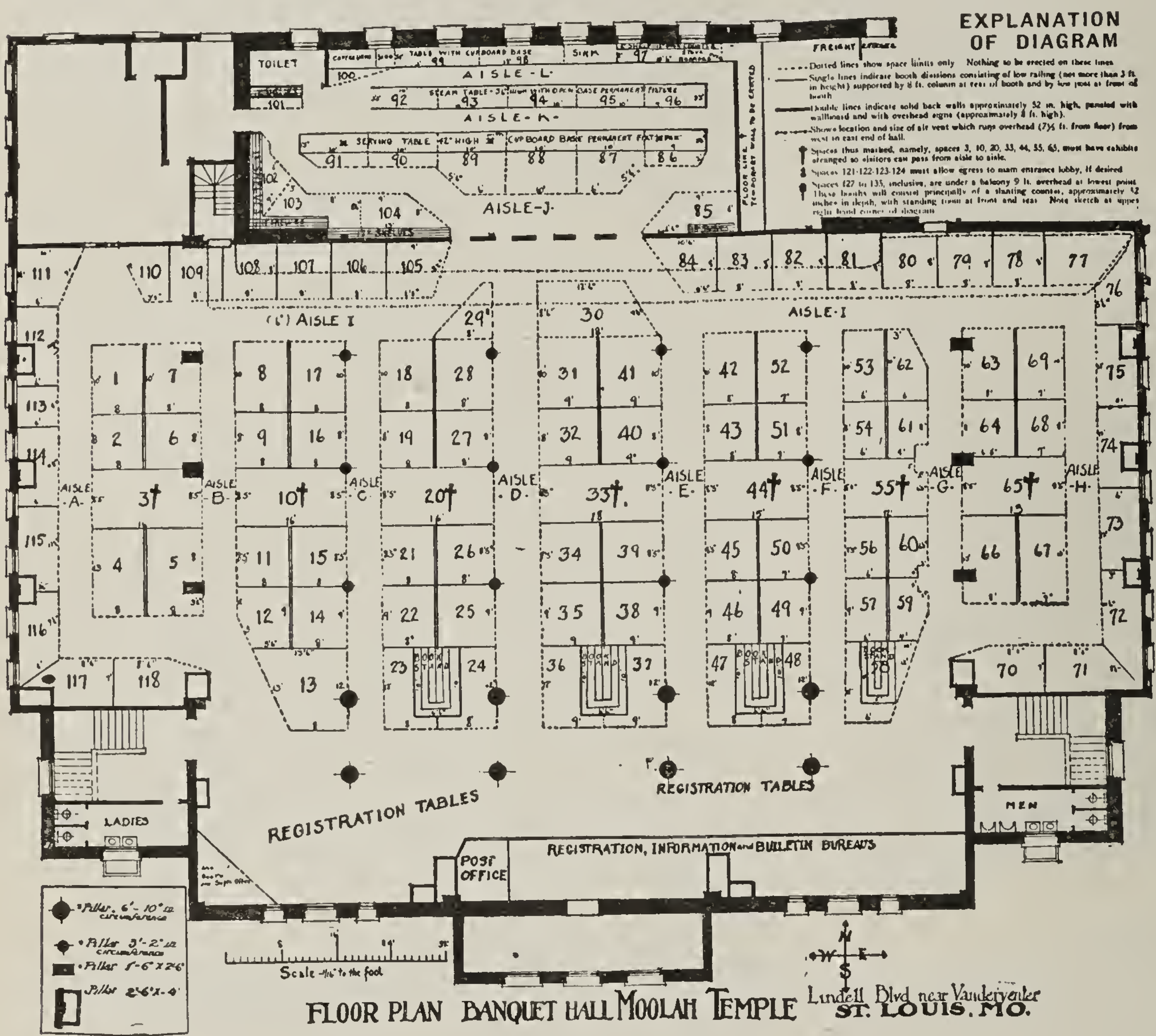
The Hanovia Chemical & Mfg. Co. will exhibit in Booths 150-155 two powerful, maximum producers of ultra-violet rays, the Kromayer and Alpine Sun Lamps, used as a modality in treating many different diseases. These lamps may be seen in actual operation during the exhibit, and it will be well worth one's time to see and hear what actually can be accomplished in using these lamps.

The exhibit of E. Leitz, Inc., in Booths 11 and 15 will include two new apparatuses, the Dr. MacKenzie Ink Polygraph, Dressler Modification and the Sphygmomanograph jointly developed by Messrs. Dressler & Leitz. The latter will be demonstrated by Mr. Dressler in person. The work of the Sphygmomanograph in showing the blood pressure on paper by ink will be clearly explained. Other apparatus of interest will be the new Leitz Combination Microscope A. D. M., a new blood counter, new series of research eyepieces and new oil immersion objectives.

The Lungmotor Company of Boston, in Space 61, will make a feature of ten-minute talks on resuscitation. These will be accompanied by appropriate lantern-slide views. Charts and statistics of lives saved through use of a Lungmotor and an actual demonstration of the apparatus on sheep lungs will be given.

Middle West Laboratories Company's exhibit will feature the Metabolimeter and accessories for making basal metabolic rate determinations. Demonstrations will be made on normal subjects whose rate of metabolism is a known constant, and the complete test followed through to the final result to show that normal subjects actually register normal rates by the Metabolimeter. Each visitor will be shown just how the test is made without calculation of any kind, and how barometric corrections are made automatically by the instrument itself. The completed test requires less than five minutes' time. Space 14.

The Sanborn Company, Spaces 12 and 13, will have qualified technicians on hand to demonstrate the latest technic in determining the basal metabolic rate with the Sanborn Benedict and the Sanborn Handy Metabolism Apparatus. The Sanborn Pulse Wave Recorder, a convenient, well-functioning polygraph of American manufacture, will make actual tracings from the brachial artery and the jugular vein of a variety of subjects. Interested physicians will be given opportunity to operate the instrument. The well-known Sanborn Blood Pressure Outfit will also be demonstrated, as well as the Sanborn Vital Capacity Spirometer.


EXPLANATION OF DIAGRAM
Dotted lines show space limits only. Nothing to be erected on these lines.
Single lines indicate booth divisions consisting of low railing (not more than 3 ft. in height) supported by 8 ft. column at rear of booth and by low post at front of booth
Double lines indicate solid back walls approximately 52 in. high, paneled with wallboard and with overhead signs (approximately 8 ft. high).
Shows location and size of air vent which runs overhead (7½ ft. from floor) from west to east end of hall.
Spaces thus marked, namely, spaces 3, 10, 20, 33, 44, 55, 65, must have exhibits arranged so visitors can pass from aisle to aisle.
Spaces 121-122-123-124 must allow egress to main entrance lobby, if desired
Spaces 127 to 135, inclusive, are under a balcony 9 ft. overhead at lowest point. These booths will consist principally of a slanting counter, approximately 42 inches in depth, with standing room at front and rear. Note sketch at upper right hand corner of diagram
FREIGHT ENTRANCE
FLOOR LINE TEMPORARY WALL TO BE ERECTED
TOILET
AISLE-L
AISLE-K
AISLE-J
AISLE-I
AISLE-A
AISLE-B
AISLE-C
AISLE-D
AISLE-E
AISLE-F
AISLE-G
AISLE-H
REGISTRATION TABLES
REGISTRATION TABLES
REGISTRATION, INFORMATION and BULLETIN BUREAUS
POST OFFICE
LADIES
MEN
Pillar 6'-10" circumference
Pillar 3'-2" circumference
Pillar 1'-6"×2'-6"
Pillar 2'-6"×4'
Scale 1/16" to the foot
N

FLOOR PLAN BANQUET HALL MOOLAH TEMPLE Lindell Blvd near Vandeventer ST. LOUIS, MO.

C. M. Sorenson Co., Inc., will show in Booths 53 and 54 the Bailey outfit for basal metabolism estimations complete in all its details. The method employed in the use of this apparatus is the gasometer or open circuit type, and no doubt will greatly appeal to the scientific and research man as well as to the clinician. The new booklet, featuring complete outfits for the chemical analysis of blood, urine and gastric contents, will also be ready for distribution from this booth.

Toledo Technical Appliance Co. of Toledo, Ohio, showing McKesson Anesthetic and other appliances, will feature a device for oxygen administration in pneumonia, arthritis, tuberculosis, etc., which will be of special interest to the internist and general physician. They will also show the Metabolor with its new device for the estimation of the respiration per minute, that is, the minute volume as well as vital capacity and basal metabolism. A full line of McKesson Anesthetic Appliances will also be found here at Booth 43.

BOOKS

The American Institute of Medicine, Inc., Space 27, has perfected an international organization which abstracts the original articles appearing in all the important medical periodicals of the world. These abstracts are translated and gathered into sections, each of which covers a special field in medicine, and is supplied monthly to the members of the Institute. The service will be clearly explained by competent representatives.

D. Appleton & Company's exhibit will be seen in Space 3. They will show new editions, some of them entirely reset, of many standard medical publications. They will also display a number of new things, among which their series of Gynecological and Obstetrical Monographs will be a prominent feature. Of the greatest interest and importance is the new clinical presentation of Endocrinology and Metabolism, edited by Drs. Llewellys F. Barker, R. J. Hoskins and Herman O. Mosenthal.

P. Blakiston's Son & Company, Publishers, will occupy Space 50. Among their new books and new editions to be shown are: Schaeffer, Nose, Paranasal Sinuses, Nasolacrimal Passageways and Olfactory Organ in Man; Morris, Human Anatomy, Sixth Edition, edited by Jackson; Berkely & Bonney, Difficulties and Emergencies of Obstetric Practice, Third Edition; Binnie, Operative Surgery, Eighth Edition; Deaver and Ashhurst, Surgery of the Upper Abdomen, Second Edition; Stoddard, Mind and Its Disorders; and Collis and Greenwood, Health of Industrial Worker.

Chicago Medical Book Company, Space 23, will exhibit a complete assortment of the latest American and English Medical Books of all publishers, in all branches of medicine and surgery. Here, too, in one exhibit, will be found a very complete collection of the new medical monographs. Many special volumes will be shown. This exhibit will be directly opposite the registration tables.

F. A. Davis Company, Booth 38, will have as outstanding features Martinet's Clinical Diagnosis in two volumes, a very complete and fundamentally important work; Fischer's new work on pediatrics, "Diseases of Infancy and Childhood," now in two volumes; Bassler's extensive work covering the whole digestive system, newly and carefully revised; Faught's "Essentials of Laboratory Diagnosis," thoroughly revised. Another carefully revised edition—the tenth—of Sajous' work on The Internal Secretions is also to be seen.

The Hospital Social Service Magazine, occupying table space on the auditorium floor, will be represented by N. F. Cummings, R.N. Physicians interested in the broader aspect of community service and hospital extension movement will find it well worth while to stop here and learn something of the purposes and work of this magazine.

Lea & Febiger, in Space 36, will feature a number of new editions and entirely new works. Among the latter are Volume IV of Ochsner's "Surgical Diagnosis and Treatment"; Cummer's "Clinical Diagnosis"; Scheppegrell's "Hay Fever"; McFarland's "Pathological Anatomy"; Thom's "Syphilis"; Vaughan's "Minor Surgery"; Hawes' "Tuberculosis"; Craig's "Nervous Exhaustion"; Tallant's "Obstetrical Nursing." New editions to be featured are Hare's "Therapeutics"; Crotti's "Thyroid and Thymus" and Wharton's "Minor Surgery."

J. B. Lippincott will have a special exhibit in Booths 71 and 72. A full line of practical medical, surgical, chemical and pharmaceutical and nursing books will be presented. In addition, there will be a display of the well-known Piersol Anatomical Charts, showing every muscle, nerve, vein and artery with beautiful accuracy. New works on pediatrics, the endocrines, tuberculosis, surgery and internal medicine will be on display.

The Macmillan Company's exhibit of books in Booth 105 will be characterized briefly by breadth and scope as to subject matter and emphasis on monographs rather than bulky systems of medicine. Adherents of protein therapy will find its doctrines championed in Peterson's new book, while endocrinologists will welcome Berman's synthesis of the material in their field. These are but two of the many subjects to be featured. Visit Booth 105.

L. S. Matthews & Co., St. Louis, will have on display the newest works of the various medical publishers. They will also show many curious and rare volumes, long out of print: for example, Beaumont, Frost, MacEuen, Englemann, Ireland, Haabs, Mueller. They will feature a number of special bargains in reference sets. Space 6.

The C. V. Mosby Company, Space 58, Publishers of Medical, Surgical, Nursing and Dental Books and Journals, will show their complete line of standard books. Among the new books shown will be Simpson on Radium Therapy; Potter on Version; Porter and Carter on Management of Sick Infant; Fitzgerald on Preventive Medicine; Hertzler on Goiter; Beck on Pathology of Nose, Throat and Ear Diseases, and Haden on Laboratory Methods. A new edition by Pottenger on Symptoms of Visceral Disease will be featured. A large staff of representatives will be present.

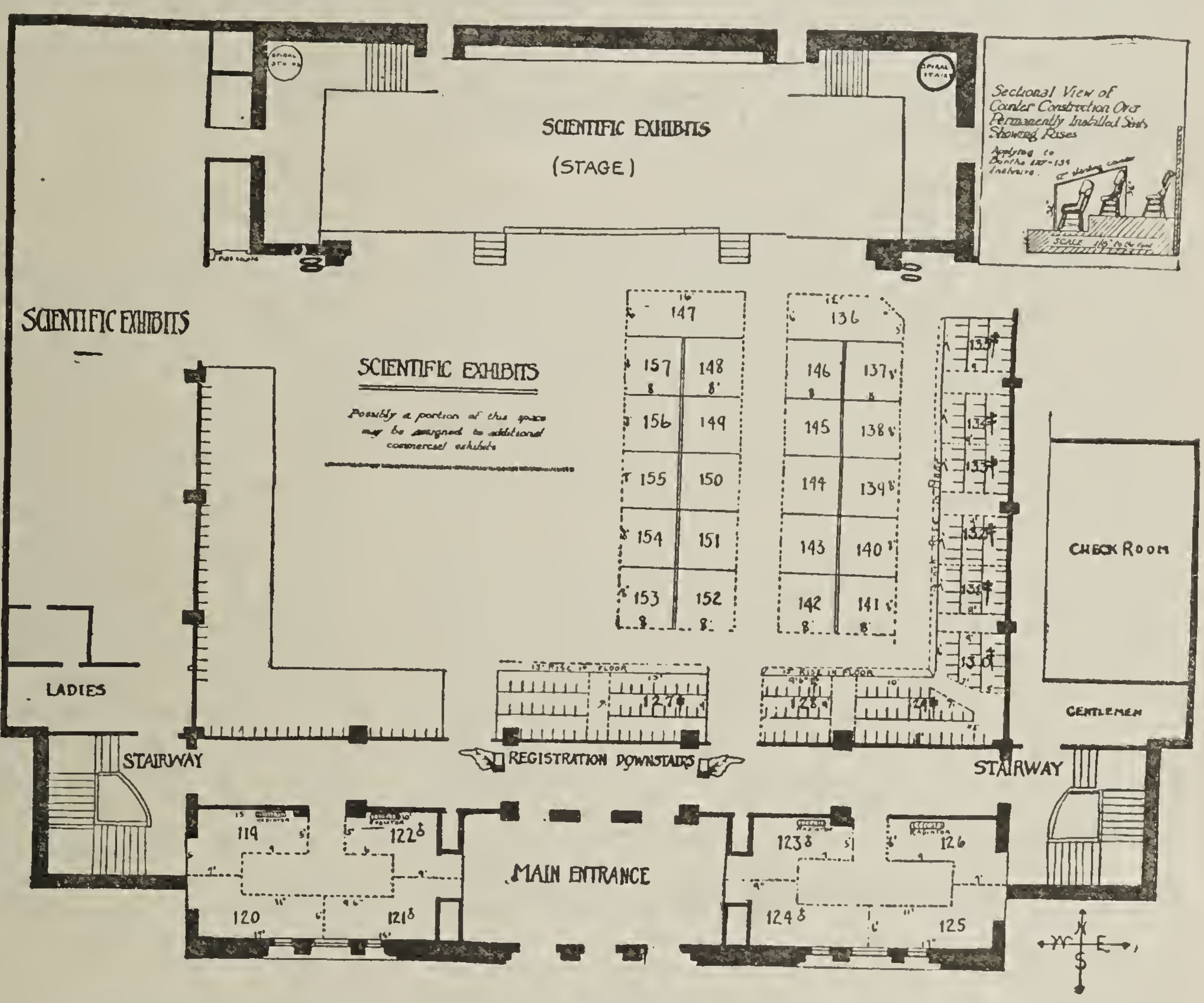
The W. F. Prior Company, Inc., Hagerstown, Md., will exhibit in Booth 24 their ten-volume set of Tice's Practice of Medicine in such a way as to illustrate the scope and efficiency of their supplementary Prior Service Unit which includes: (1) The International Medical Digest; (2) the Research Service, and (3) the new pages which keep Tice up to date. A complete representation of Tice and the Prior Unit Service Unit will be on display for the inspection of visiting physicians.

W. B. Saunders, Booths 47 and 48, will exhibit new books and new editions, including Stookey's Surgical and Mechanical Treatment of Peripheral Nerves; the current issues of the Surgical Clinics of North America and the Medical Clinics of North America; the Thyroid Gland by George W. Crile and his associates; a Clinical Medicine by Lewellys F. Barker; the first volume of Abt's Pediatrics; Einhorn's Lectures on Dietetics; Stevens' Comprehensive Practice of Medicine; Thomas' The Successful Physician; new edition of Scudder's Treatment of Fractures, and others. In addition, there will be advance sheets of a number of publications actively preparing.

William Wood & Company of New York will have in Space 39 an attractive assortment of new books. Physicians will be interested to talk with representatives here regarding prices on the Wood books, which are said to be less than 25 per cent. greater than those of 1914. Visitors should feel free to ask for latest information regarding books on their special subjects of interest. Time here can be very profitably spent.

FOODS AND BEVERAGES

Apollinaris Agency Company, 503 Fifth Avenue, New York, will exhibit in Space 21 Apollinaris, a mild alkaline-acidulated table water bottled only with its own natural gas; and "Apenta," natural aperient water.



The Borcherdt Malt Extract Co.'s exhibit will occupy Space 62. Malt Soup, prepared according to the Keller formula, will be exhibited; also Malt Sugar and the two new Borcherdt Malt Products, Malt Cod Liver Oil and Phosphorus, and Malt Cod Liver Oil and Iron Iodide. Physicians are cordially invited to see these products and learn their manufacture in detail.

The Horlick's Malted Milk Company, Racine, Wis., will occupy Spaces 59 and 60. The long and favorably known "Horlick's" products will be interestingly featured. The "X-Ray" advantages of "Horlick's," the Original Malted Milk, will be in evidence, as well as special literature for the physician.

Mead Johnson & Company will exhibit their full line of infant diet materials in Booths 16 and 17. The representatives will be glad to demonstrate diets for well children, for children who do not gain, for babies with diarrhea, for marasmic infants, for constipated infants and other types of difficult feeding encountered in practice. Each physician will be presented with a handsome Index Box containing "Corrective Diets" for infants, and literature describing various infant feeding materials to suit the food requirements of individual infants. The aim is to make this demonstration truly educational and helpful.

Mellin's Food Company, Spaces 142 and 143. No argument is needed to emphasize the advantage to the physician of a thorough knowledge of any product that he deems worthy of frequent or only occasional use in the work of his profession, and representatives of this company will make a special effort to bring out clearly everything that has a bearing upon the source, nature and amount of the nutritive elements present in Mellin's Food in order that physicians who are not perfectly familiar with Mellin's Food may have an opportunity to acquire this information.

Merrell-Soule Sales Corporation will have on exhibit Klim Brand Powdered Milk and Merrell-Soule Powdered Protein Milk. Klim Brand Powdered Milk will be served, the method being to mix it up in small quantities to show how readily it goes into solution. Every means will be used in enabling visiting physicians to ascertain its natural taste and its perfect solubility. Opportunity will also be given to sample Powdered Protein Milk, and scientific literature on the subject will be available. Space 87.

The Welch Grape Juice folks will be present again. Space 109. Steady, please—the lines form on the right. The drinks are free, of course.

INSTRUMENTS

The A. S. Aloe Company of St. Louis will exhibit a complete line of surgical apparatus, instruments and specialties in Booths 56 and 57, near the Registration Tables. Featured in the exhibit will be their new Portable Electro-Therapeutic Cabinet; also a large line of high quality surgical instruments just received from their buyer in Germany. The Aloe Company invites all A. M. A. members, while in St. Louis, to make their headquarters at their store and offices at 513 Olive Street, where writing rooms and free stenographic service will be provided.

The Bard-Parker Company will introduce at Booth 55 at the meeting a new model blade for their well-known knife. This new blade, to be known as No. 23, will be of interest to those who prefer a linear blade knife, or who have wanted a sharp-pointed, lancet type blade for dissection, one larger than their No. 11 Bistoury. C. R. Bard will also display here a very complete line of Eynard Urological goods, including Ureteral Catheters, both regular and X-Ray; Soft Rubber and Woven Urethral Catheters; Suprapubic and Perineal Drains and Bougies; also several interesting specialties.

Cameron's Electro-Diagnostic and Surgical Specialties will be exhibited at Booth 70. A number of new and improved instruments developed during the past year will have their first demonstration to the general profession during the meeting. Among the specialties to be demonstrated are Cameron's Electro-Cautery for major surgery; Cameron's Surgiroll; Cameron's Surgilites, and Cameron's improved Electro Diagnostoset.

F. A. Hardy & Company of Chicago will exhibit in Space 33 a full line of eye, ear, nose and throat surgical instruments, ophthalmological equipment, office furniture and compressed air outfits. The Hardy Company extends a cordial invitation to those attending the meeting to visit Space 33 and inspect the Hardy line.

The Kloman Instrument Company of Washington will exhibit several new instruments at St. Louis. Chief among them will be a new ophthalmic bracket which must be seen to be appreciated. Their exhibit will be attended by Mr. W. C. Kloman and Mr. Thomas Schweinhart in Space 44.

At Booth 73, the MacGregor Instrument Company will demonstrate Dr. Dunn's apparatus for local anesthesia in major surgery. As the trend of the times is toward local anesthesia, and as the Dunn apparatus is inexpensive and has proved very efficient, this exhibit will be of much practical value. Other interesting devices displayed will be the Alder Automatic Two-Way Valve for Intravenous Injections and the Vim Schick outfit.

E. B. Meyrowitz, Incorporated, will have something of pertinent interest to the physician who is obliged or prefers to remove tonsils and adenoids without assistants—the Wolf Mouth Gag and Tongue Depressor. See demonstration of this instrument in Spaces 1 and 2. General practitioners as well as specialists will find it worth while to visit this exhibit.

V. Mueller & Company, Chicago, will occupy Spaces 115-116-117-118. This firm always has an interesting exhibit of surgical instruments and equipment, but never before have so many new items been developed by them for American surgeons as during the past year. These new instruments, as well as many standard types, will be exhibited. Of particular interest are Shahan's Operating Lamp, a number of new laryngeal and esophageal instruments, and the Lewis Turnbuckle.

William A. Phillips Company's exhibit will show John R. Caulk's prostatic punch; Bransford Lewis' urological instruments; cautery heaters and instruments; nerve blocking local anesthesia detector by electric current; J. J. Singer's lung-testing apparatus; universal head lamp; also condenser using standard lamps; portable ear, nose and throat battery-lighted instruments which can be carried in a satchel. Space 91.

OPTICAL INSTRUMENTS

Bausch & Lomb Optical Company of Rochester, N. Y., will have on display their complete line of ophthalmic instruments, including the Visual Acuity Test Apparatus, the Precision and Simplified Ophthalmic Test Frames, Ophthalmic Test Lenses, Gullstrand Ophthalmoscope, Corneal Microscope with Slit Lamp Attachment, Interpupillary Gauge, Prentice Phoria Indicator, Binocular Magnifier, Stereo Campimeter, Exophthalmometer and Keratometer. Microscopical equipment is to be represented by model FFS, for the use of the physician; the Dark-Ground Illuminator and the new Convertible Substage Lamp for use in dark-field microscopy and also oil immersion work. Space 144-145.

Harold M. Bennett, New York City, American agent for Carl Zeiss instruments, will exhibit in Booths 140-141. The exhibit will include: a representative line of the Zeiss microscopes; photomicrographic equipment which operates with hitherto unattained ease and precision; new and improved dark field equipment; a new system of operating lamps; irradiating apparatus for gynecologists and for treatment of tuberculosis, and numerous new instruments for microscopy of the living eye.

Woolf Instrument Corporation, Booth 20, will show a model refracting room for specialists. This will include several pieces of steel equipment, four distinct models of Trial Lens Cabinets; a new all-steel specialist's chair with head-rest adjusted by clamping of a lever. They will also show new models in test leather cabinets having acid-etched letters which are illuminated with unusual brilliancy.

ORTHOPEDIC APPLIANCES

Carnes Artificial Limb Co. will give practical demonstrations in Booth 7 of the usefulness and natural appearance of the Carnes Arm, as shown by men wearing the arm, and doing the things other people do every day. One of the Carnes traveling salesmen, wearing two Carnes Arms, will show how easily he takes care of himself on the road, in the office or at home; how he writes, ties his cravat and handles his work generally.

The Ambulatory Pneumatic Splint Mfg. Co., Chicago, will demonstrate in Space 114 the scientific, practical values of the Ambulatory Pneumatic Splint for the closed or open reduction of fractures of the hip, femur, knee, leg, ankle and the treatment of hip and knee joint disease. This is an air-cushioned splint and provides comfort, safety and freedom of movement both in and out of bed. This company will also demonstrate their "Ambumatic" Washable Abdominal Supporters and Adjustable Binders and other surgical and orthopedic specialties of direct interest to the practitioner and specialist.

PHARMACEUTICALS

In the exhibit of The Abbott Laboratories in the Scientific Section you will find shown their latest synthetic medicinal chemicals, including Butyn, the new local anesthetic, Acriflavine, Cinchophen, Neo-Cinchophen, Argyn, Barbital, Procaine and other Council passed products of the Abbott Laboratories. Your interest in this exhibit will indicate your preference for American named and manufactured medicinal chemicals, for the American medical profession. Space 127.

P. Astier Laboratories, Paris, France, will occupy Space 52 and exhibit their Arheol, a pure oil of Santal preparation, and Riodine, an iodized compound of ricinolcic acid, which in suitable cases has the advantage of practical freedom from iodism and a slow and even absorption and elimination of the iodine. Mr. Albert Thouin, with assistants, will receive visitors and supply samples and literature.

B. B. Culture Laboratory, Inc., Yonkers, N. Y., Space 32. This laboratory as a specialist in this work has kept fully abreast of the advances in both means and methods in the field of lactic cultures. At St. Louis the various uses of B. B. Culture will be suggested for consideration and new forms of issue will be shown. The pediatrician and general practitioner will find this exhibit of unusual interest.

H. A. Metz Laboratories will exhibit their Salvarsans, Novocain and Pyramidon in Space 24. Physicians skilled in the use of these drugs will be present to explain the various methods of preparation and administration, and visiting physicians will be afforded the most ample opportunity for getting new ideas on the use of these products. In addition, the Laboratories will exhibit Albargin, antigonorrheic; Amphotropin, urinary antiseptic; Anaesthesin and Orthoform, anesthetics for use on abraded surfaces, and L-Suprarenin Synthetic, vasoconstrictor.

E. R. Squibb & Sons will occupy Spaces 147-148 and 157, facing the Scientific Exhibit. The manufacture of Arsphenamine is to be shown in a graphic way, from the crude material to its present high form of development—Solution of Arsphenamine-Squibb. The production of Thyroxin is also shown graphically, beginning with the thyroid glands as taken from the animal, and ending with the tiny crystal of Thyroxin representing the therapeutic activity of this gland. They will also show the later development of the Allergens.

Upsher Smith (Digitalis), Inc., Minneapolis, Minn., will exhibit photographs and specimens illustrating the careful method of cultivating Digitalis at Fox Glove Farm. Physicians will have the opportunity of seeing growing plants of several varieties of Digitalis, including Digitalis lutea, and those who desire specimens of "Upsher Smith" Digitalis products for clinical trial should register at Space 156.

The Wilson Laboratories, Booth 28, will have an instructive exhibit of the various animal glands and methods of preparing them for medicinal purposes. Representatives will be present to explain and demonstrate as fully as possible the manufacture of the various glandular derivatives.

RADIUM

The W. L. Cummings Chemical Company of Philadelphia, Pa., will exhibit and demonstrate a number of new and improved Radium Applicators for the treatment of malignant conditions of the uterus and rectum, together with their Patented Detachable Point Needle Applicators. This company will also have on exhibit a tube of Pure Radium Salt refined from U. S. carnotite. Space 78.

The Radium Chemical Company of Pittsburgh will have technical experts in attendance who will be glad to explain new instruments designed during the past year for handling radium and to discuss new ideas on technique. Radium workers and prospective purchasers can secure much practical information on radium methods in this exhibit. Spaces 123-124.

The United States Radium Corporation will exhibit in Space 120. Among the noteworthy developments during the past year are the very small platinum needles to contain radium element. Dr. Victor F. Hess, formerly of the Vienna Radium Institute, now head of the Physical Research Department of the United States Radium Corporation, will be at their exhibit during the convention, and will be very glad to talk with any members of the profession regarding the physics of radium.

X-RAY

George W. Brady Company will exhibit in Space 51 the new model Potter Bucky Diaphragm with electric signal attachment. It has been developed as an aid in radiographing kidneys, spine or pelvis. They will also exhibit a novel Portable Bedside X-Ray Apparatus that can be attached to any electric light socket; also a wide line of desirable x-ray accessories. There will also be a collection of interesting radiographs.

The Eastman Kodak Company, medical division, will have an exhibit consisting of two displays—one showing the present standardized photographic material and accessories developed for x-ray use, and the other showing the possibilities of photography as an aid in clinical records. The x-ray exhibit will consist mainly of a number of pathologically interesting negatives made on Dupli-Tized X-Ray Films. A simple photographic unit comprising camera and illuminating flood-lights for clinical photography will be one of the features of the exhibit. Spaces 75-76.

The Engeln Electric Company of Cleveland, Booth 153, will exhibit the new Engeln Protective X-Ray Combination—"a real X-Ray Unit." The Bucky, Table and Tube Stand are combined into one unit for easy operation.—New and interesting accessories will also be on display here.

The High Tension Transformer and Equipment Co., will demonstrate "The Intermediate X-Ray Unit." This machine is a mobile unit claimed to be of sufficient capacity for applying all the usual x-ray therapy at the bedside. The newly developed Electro-Scalpel will also be displayed here. This device makes a clean incision not by pressure as with the ordinary scalpel but by means of a specially attuned oscillatory current which divides the tissues ahead of the blade. A unique instrument worthy of careful investigation. Space 68.

The International X-Ray Corporation, Space 67, will exhibit their new Precision X-Ray Apparatus which is designed for constant rectification without the production of corona, by using the sphere theory and incorporating the highest grade of mechanical construction. This apparatus is especially adapted for all classes of x-ray work, including radiography, fluoroscopy, stereoscopy and deep therapy.

Liebel-Flarsheim Company will exhibit in Spaces 88-89 a model of a complete x-ray installation. In addition they will show the new model F Dynelectron which gives practically all of the physiotherapy modalities used today in one single popular priced cabinet, including electrocoagulation, diathermy, oudin current for vacuum electrodes, auto condensation, tankless compressed air for spray atomizers, etc., and suction and vibra massage.

Standard X-Ray Co. exhibit, Spaces 121 and 122, will feature x-ray equipment of new and novel design, never before shown. The exhibit will include combination tilt table, rigid and sturdy, tilting both ways, an easily accessible Trendelenberg position, and an angular tube head with stereoscopic shift and opaque lead glass shield for horizontal and vertical stereoscopy. Also a wall-mounted "Type D" transformer with self-starting motor, and a remote control on which is mounted auto transformer and Coolidge tube control. Mr. Wm. G. Hettich will be in personal charge.

The Victor X-Ray Corporation, Spaces 30-31, will offer opportunity to personally inspect the new Deep Therapy Outfit, now in use in a number of laboratories throughout the country; the Potter Bucky Diaphragm Table, a distinct convenience in radiographic work where the diaphragm is used; the new Model 9 Roentgen Table; and the new Stabilized Radiographic and Fluoroscopic Unit. The new Victor Film will prove of universal interest.

The Wappler Electric Company, Spaces 125-126, will show a new development—the Wappler Composite X-Ray Unit. This is a complete x-ray plant capable of horizontal and vertical fluoroscopy and radiography. It requires but a very small amount of floor space and is reasonably priced. The exhibit will also include the Wappler Portable Teletherm and the Excel High Frequency Machine as well as electrically lighted diagnostic instruments.

MISCELLANEOUS

The Illinois Post Graduate Medical School will have representatives at Booth 108. As this institution has been one of the pioneers in making Chicago an important medical center, convention visitors can profit by learning of the facilities it offers in the way of individual instruction and actual work under personal supervision of its staff.

The Laboratory of Surgical Technique of Chicago, Booth 113, will give full information concerning its courses in Surgical Technique. Dr. Emmet A. Printy will be present to answer questions concerning the nature of the work and to assist prospective students in arranging for special courses. Lantern slides will demonstrate various phases of technique. Each visitor will receive interesting literature concerning teaching plan, operations covered in the course, etc.

The A. E. Little Shoe Co. of New York City will exhibit in Space 139. The A. E. Little Shoe will doubtless appeal to every physician interested in foot hygiene. It was developed in collaboration with eminent orthopedic surgeons, but is in appearance a smart, stylish piece of footwear quite in keeping with the demands of the man or woman of today. Skilled shoe men will be present to explain the advantages of the Little Shoe, and how it overcomes the usual objections to sensible footwear.

The representatives of the Medical Protective Company of Fort Wayne will be on hand to explain the service which this company renders to the practitioner of medicine. No doubt many physicians have not had an opportunity to inspect the protective policy issued by this firm nor to become acquainted with the details of this form of protection. Here will be an opportunity to talk personally with representatives and to get complete information on this specialized service. Space 128.

The Thoro Corporation cordially invite all conventionists to Space 100 whenever they feel the urge to "wash up." Ample supplies of Thoro Skin Cleanser, running water and individual towels will be available. Mr. Wolters, president of the Thoro Corporation, and assistants will be on hand to explain the bland cleansing action of Thoro and its special usefulness to physicians and surgeons.

Vanta Baby Garments, Space 110, will have their tenth annual appearance at the convention this year. Without mother demand—merely depending upon the approval of physicians, nurses and hospitals—this business has developed to the point that it would require 450,000 mothers, each purchasing three of these garments each year, to take the product of the factory. The Vanta Garments dress the baby complete without a pin or button, without turning the child once to put on a complete outfit. Be sure to see this exhibit and have the attending nurse send our Gift Box to some of your patients.

Wallace's Linen Mesh Underwear—a fabric of linen thread knit by special machinery, and providing in addition to the natural cellular structures of the flax fiber, myriads of artificial air cells will be exhibited in Space 138. Physicians will have here an opportunity to inspect all the various style shirts, drawers and unionsuits made of this special fabric.

List of Exhibitors

Name—	Aisle and Space No.
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Acme X-Ray Co., Chicago	G 65-66
Aloe Co., A. S., St. Louis	F 56-57
Allison Co., W. D., Indianapolis	I 82
Amb. Pneu. Sp. Mfg. Co., Chicago	A 114
Amer. Inst. of Med., N. Y.	D 27
Anatomik Footwear Co., N. Y.	Audit. 134
Apollinaris Agency Co., N. Y.	C 21
Appleton & Co., D., N. Y.	B East half 3
Armour & Company, Chicago	F 49
Astier Lab., P., N. Y.	F 52
Bard-Parker Co., N. Y.	F-G 55
Baum Co., W. A., Inc., N. Y.	C 22
Bausch & Lomb, Rochester, N.Y.	Audit. 144-155
B.B. Culture Lab., Inc., Yonkers, N. Y.	D 32
Becton-Dickinson, Rutherford, N.J.	Aud. 137-146
Bennett, Harold M., N. Y.	Audit. 140-141
Berger Bros. Co., The, New Haven, Conn.	D 35
Bethlehem Lab., Inc., Pittsburgh	I 80
Betz Co., Frank S., Hammond, Ind.	C 18-19
Blakiston's Son & Co., P., Philadelphia	F 50
Borcherdt Malt Extract Co., Chicago	G 62
Brady & Co., Geo. W., Chicago	F 51
Buck-X-Ograph Co., St. Louis	B-W ½ 110
Cameron's Surgical Spec. Co., Chicago	G 70
Carnes Artif'l Limb Co., Kansas City, Mo.	B 7
Castle Co., Wilmot, Rochester, N. Y.	H 69
Chicago Medical Book Co., Chicago	C 23
Collins, Warren E., Boston	Auditorium 119
Cummings Chemical Co., Philadelphia	I 78
Davis Co., F. A., Philadelphia	E 38
DeVilbiss Mfg. Co., The, Toledo	Audit. W ½ 136
Dry Milk Co., The, New York	A 112
Earnshaw Knitting Co., Chicago	I 110
Eastman Kodak Co., Rochester, N. Y.	H 75-76
Electro Surg. Inst. Co., Rochester, N. Y.	I 84
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Engeln Electric Co., Cleveland	Audit. 153
Fischer & Co., H. G., Chicago	D 26
Foregger Co., Inc., The, New York	A 111
Guerber & Co., F.S., White Plains, N.Y.	H So. ½ 74
Hanovia Ch. & Mf. Co., Newark, N.J.	Aud. 150-155
Hardy & Co., F. A., Chicago	D-E 33
Harris Laboratories, Tuckahoe, N. Y.	J 90
High Tension Tr. & Eq. Co., Hoboken, N.J.	H 68
Hindle, Charles F., Ossining, N. Y.	I 81
Hoeber, Paul B., New York	E 37
Horlick's Malted Milk Co., Racine Wis.	G 59-60
Hospital Social Service, N. York	Table sp. Audit.
Hynson, Westcott & Dunning, Baltimore	E 45-46
Illinois Post-Grad. Med. Sch., Chicago	I 108
International X-Ray Corp., New York	H 67
Jaeckh Mfg. Co., Cincinnati	Audit. S. half 156
Johnson & Co., Mead, Evansville, Ind.	C 16-17
Kansas City Oxyg. Gas Co., K. C., Mo.	Audit. 130
Kelley-Koett Mfg. Co., Covington	Audit. 151-154
Kloman Instrument Co., Washington, D.C.	E-F 44
Kolynos Co., The, New Haven, Conn.	E 40-41
Laboratory Products Co., Cleveland	I 107
Lab. of Surgical Technique, Chicago	A 113
Lea & Febiger, Philadelphia	D 36
Leitz, Inc., E., New York	B-C 11-15
Liebel-Flarsheim Co., The, Cincinnati	J 88-89
Linen Underwear Co., Greenwich, N.Y.	Aud. 138
Lippincott Co., J. B., Philadelphia	H 71-72
A. E. Little Co., Lynn, Mass.	Audit. 139
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MacGregor Inst. Co., Boston	H 73
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Spencer Lens Co., Buffalo, N. Y.	Audit. 135
Squibb & Sons, E. R., N. Y.	Audit. 147-148-157
Standard X-Ray Co., Chicago	Audit. 121-122
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Taylor Instrument Cos., Rochester, N. Y.	B 8-9
Thompson Plaster Co., Leesburg, Va.	D 25
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Toledo Technical Appliance Co., Toledo	E 43
U. S. Radium Corp., New York	Audit. 120
Victor X-Ray Corp., Chgo.	C-D E ½ 10 & 30-31
Wappler Elec. Co., Long Isl., N.Y.	Audit. 125-126
Weissfeld Bros., New York	K 92
Welch Grape Juice Co., The, Westfield, N.Y.	I 109
Willard Laboratory, Greensboro, N. C.	L 97
Wilson Laboratories, The, Chicago	D 28
Wood & Co., Wm., New York	E 39
Woolf Istrument Co., New York	C-D 20
Yawman & Erbe, Rochester, N. Y.	Audit. 149
Year Book Publishers, Chicago	D 29

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RESEARCH IN CHEMISTRY AS RELATED TO MEDICINE

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The last fifty years has been an era of great scientific activity, an era in which nearly all forms of scientific knowledge have made great advances. It has been an age of electricity, and is coming to be, if it is not already, an age of chemistry. In all things biologic, whether physiologic or pathologic, the ultimate solution rests on some physical or chemical factor; the ultimate explanation in most cases involves some chemical reaction. The recognition of this fact has led to increasing interest in biochemistry, and the development of this branch of science has gone forward by leaps and bounds. The applications of biochemistry are so far-reaching, so broadly extended, that there seems almost no limit to the possibilities it offers in furnishing aid in the prevention and cure of disease. No branch of applied science is more promising to suffering humanity than biochemistry; it opens the gateway of understanding to many obscure phenomena which puzzle both physiologists and practitioners of medicine, and it promises the final solution of many of the great problems of biology and medicine.

This is now self-evident, but it took centuries for man to learn even the fundamental principles of chemistry and physics and to comprehend their bearing on the processes of life. Today, in a general way, we refer all the phenomena of life to the laws of chemistry and physics, understanding that life is the most complex expression of the transformation of matter and energy. Hence, we turn to all branches of chemistry, as well as of physics, for aid in the solution of the many and diverse problems that confront the student of biology and medicine. The worker of today has at his command many resources heretofore greatly limited. Synthetic chemistry has developed so far that many of the substances occurring in the body, and that play an important part in life processes, are thoroughly understood; their chemical structure is known; their synthesis is possible, and consequently their origin, genetic relationships and ultimate fate can be determined. Chemical structure takes us beyond the boundaries of microscopic structure; chemistry offers us a form of minute analysis in which molecules and atoms are the ultimate units.

In all this progress, the dominant note is the advancement of biologic science and medicine, and not the accumulation of wealth; truth, and not personal gain. Wisdom is more than gold. Service to mankind is the watchword. Humanity is to be relieved of some of its suffering. Comfort and human happiness are to be increased. Just as advancement in the knowledge of electricity and its applications have brought increased comfort and happiness to mankind, so, and in far greater degree, advancement in the knowledge of chemistry and its applications to the processes of life, bids fair to bring a large measure of relief to human suffering. An unselfish desire to enlarge the welfare of mankind has been a powerful stimulus to the ablest men, and will continue to draw a large corps of active workers into this promising field. If I name the discoveries of anesthetics and antiseptics, of epinephrin and thyroxin, of antitoxins and vitamins, you will be reminded that science repays with ample interest the advances made to her account.

CHEMISTRY AS AN AID IN STUDYING BODY PROCESSES

If I seem to lay stress on "the processes of life," rather than on medicine, it is merely to emphasize the fact that we must thoroughly understand the normal, healthy condition of the body and its normal working before we can hope to comprehend the abnormal. Physiology must precede pathology, and, if we are to cope successfully with deviations from the normal, there must be full knowledge of the processes that belong to health. Medicine cannot apply intelligent methods of treatment unless there is full understanding of how and to what extent the diseased condition differs from the normal.

Chemistry offers aid in the understanding of normal and abnormal function as well as in treatment, and can often aid in prevention as well. Today physiologic chemistry, or biochemistry, is our main reliance in the study of a large number of the processes of the body. If it be a study of digestion, of nutrition in the broader sense of the term, of metabolism, normal or abnormal, of internal secretions, of excretion, of gaseous exchange, it is to chemistry that we turn for aid. If it is the pharmacologic action of a given drug, or the physiologic action of a group of antipyretics, for example, it is to their chemical constitution that we look for an adequate explanation of the effects they produce. If it is a fuller knowledge of the cell, of the nuclear protoplasm, of the chromosomes, we turn for aid to microchemistry, which brings to our eye a picture of differentiation that can be obtained in no other way. If it is a question of the equilibrium reaction of the body, or the maintenance of neutrality in the tissues and fluids, chemistry offers an answer.

NATURE OF THE CELL

As already said, understanding of the normal, natural processes of the body is a necessary prelude to an intelligent comprehension of the abnormal or diseased condition. We can hardly hope to prevent or cure the latter without a full knowledge of the normal, and here there remains much to be done. In spite of all the efforts that have been expended we have only a limited knowledge of the chemical and physical nature of the structures of the body. We need first of all a more intimate knowledge of the cell and of the intracellular changes characteristic of life. The cell is the biologic unit, and we must know more of the primary and secondary constituents if we are to understand the nature of the transformations that occur within the cell wall. Tissues and glandular organs are merely composites, and we must acquire accurate knowledge of the chemical nature of the cell constituents and of the changes they undergo, if we are to understand the gross changes that take place in these tissues and glands.

Likewise, we need to know how the cell constituents react on one another under changed conditions, such, for example, as those produced by alterations in environment, for therein may lie the secret of many pathologic changes. This knowledge is of fundamental importance, and it bears as directly on medicine as it does on biology and physiology. Who can foretell what the facts that may be disclosed by a careful study of cell composition may lead to? As a recent writer has put it, scientific research is like "an army advancing into an unknown country, in which it is not possible to see more than a step or two ahead; and the difficulties are such that only certain lines of advance are reasonably practicable. Progress is made step by step along these lines, one discovery leading to another. New roads can only be made as branches from the old. Those who now march forward can but follow the way as it opens out before them; they have no idea whither they are being led. Were it otherwise, research could not be so fascinating. It is in this way that knowledge accumulates, and there is no other way. It is not until it has been acquired that it becomes possible to consider whether or not anything can be done with it."

A study of cell composition is certain to give facts of importance. Just how important, we cannot say; but I venture to prohesy that in this great and unexplored field will be found many interesting and suggestive facts of grave significance in health and disease, if we are able to organize adequate lines of systematic research. Think of the gradual evolution of ideas regarding the thyroid gland, of what has eventually developed from the primary discoveries of Baumann, that in the cells of this gland iodin is present. At first, interest centered in the mere fact that iodin is contained in the cells of the animal body. It was something new, but what did it mean? It took some time to ascertain, but one observation led to another, and the chemist soon found that he was dealing apparently with some iodin complex, and the names of iodothyrin and thyroidin were coined to designate the internal secretion or substance produced by and contained in the thyroid cells. Next came the astounding fact that this substance had some connection with growth, and shortly we were shown the relationship of the thyroid gland to cretinism, to acromegaly, to myxedema, to exophthalmic goiter. The thyroid gland is a tiny structure, yet the internal secretion it produces is absolutely necessary for the smooth running of the bodily machinery, and, conversely, too much of the secretion is as harmful as too little. If in infancy the secretion is too scanty, the body fails to grow normally and the result is the cretin, a creature hardly resembling human kind. If the thyroid loses its activity later in life and the secretion becomes subnormal in quantity, then there results loss of intellectual power, and a condition of myxedema sets in. With hyperactivity on the part of the gland there results great excitability of the nervous system, irritability, a rapid, bounding pulse, and a general stimulation of metabolic activity, a pathologic condition known as exophthalmic goiter. Here is knowledge of a most practical and significant kind, and it centers around a single chemical substance now called thyroxin. We may be proud of the fact that its exact chemical nature and, indeed, its synthesis, have been made clear by the work of an American investigator.

Further, think of the gradual accumulation of knowledge concerning the cells of the suprarenal glands, glands seemingly too small and insignificant to possess much, if any, physiologic importance. I happened to be in London in 1894 when Schaefer, then at University College, was working on the physiologic action of extracts of the glands, and I frequently witnessed in his laboratory those early experiments which did so much to prove the wonderful power of these extracts on blood pressure. At that date all that was known was that something could be extracted from the gland by water which, injected into the blood, produced this marked rise of pressure. Later it was found that this something was soluble in alcohol. I recall a conversation with Professor Schaefer in which, after discussing the remarkable physiologic effects of even very weak extracts of the gland, he exclaimed, "How can we ever find out what it is in the gland that produces these effects?" Chemistry has come to the aid of physiology, and largely through the work of an American investigator the actual chemical substance contained in the secretion and wholly responsible for its remarkable action has been separated from the gland cells, its constitution determined, its synthesis accomplished, and its production for medical purposes carried on effectively. Now, under the name epinephrin, it is available for various physiologic needs, and the physician has the great advantage of employing a pure substance, instead of a crude extract of uncertain strength.

It is hardly proper to dismiss the suprarenals without a word more, for the secretion which emanates from the cells of these tiny glands is typical of many other internal secretions on which the body depends for proper physiologic adjustment. These internal secretions are vital necessities; without them the body cannot even live. If the glands are extirpated in their entirety, death follows, thus showing how essential their internal secretions are. Can we not picture for ourselves the effect on medical thought and practice of such facts as these? It is easy to realize the disadvantages which a practitioner of medicine labored under in attempting to treat disease when in ignorance of the foregoing facts, and yet these facts were discovered only a few short years ago.

Knowledge leads to a rational basis in treatment. When disease brings about a shortage of some substance normally produced by the body, if that fact is recognized, the missing substance may be supplied and thus the abnormal condition remedied. The treatment of cretinism by feeding thyroid glands of sheep, even before there was definite knowledge of the true nature of the chemical substance formed in the gland, affords a good illustration, for, as the early pioneers in this field found, the results were truly magical.

THE VITAMINS AND DEFICIENCY DISEASES

What do we know about vitamins in either animals or plants? It is only a short time that we have been cognizant of even their existence, but today we are very conscious of what their presence or absence may mean in relation to growth and to health. We have on record a vast quantity of data bearing on feeding experiments especially with rats, most suggestive and important in their medical bearing, but as yet we have no definite knowledge as to what vitamins really are. They must be chemical substances, and we need to know of what sort; medicine needs that knowledge, for purposes both of prevention and of cure. It surely can be obtained, and some lucky accident will eventually provide the key, provided we keep working at the problem so as to give opportunity for the accident to occur.

We need more definite knowledge regarding the nature and distribution of the vitamins in our daily food, in green vegetables and leaves, and more especially that knowledge which chemistry alone can give as to the nature of these substances apparently so essential to our well being. It is not enough to know that certain things are essential to growth or to health, but we must know what these substances are and how they act.

Consider what chemistry has done in bringing about some understanding at least of the various diseases which we now associate with dietary deficiencies, such as scurvy, beriberi and pellagra. For centuries people suffered from these diseases without much remedial aid. Pellagra, for example, has been known for nearly two centuries, being endemic in certain sections of Europe, Mexico, West Indies and the United States. In this country, it was recognized as an endemic disease about 1908, and during the following four years 30,000 cases were recorded with a fatality of 40 per cent. Theory after theory has been put forward to explain the cause of this disease, the most popular for many years being the theory advanced by an Italian investigator that pellagra is due to the consumption of a diet largely composed of corn. Later, this was supplanted by the view that the real cause of the disease was to be found in poisonous substances present in "spoiled" corn formed through the agency of fungi, a view that has persisted until recent years. Work in this country, however, has shown that there is no causal relationship between corn and pellagra, but that there may be a relationship between a narrow vegetable diet and the disease, since it has been found that a liberal mixed diet has a marked effect in inducing recovery. But the question arises at once, What is the nature of the defect of the vegetable diet which can be held responsible for the causation of the disease? Is it, as in the case of beriberi and xerophthalmia, due to the absence of an antineuritic or of a fat-soluble vitamin? Or is it caused by a lack of proteins of a proper composition, or by a lack of proper proportions of calcium or sodium in the diet, or is some infectious agent primarily responsible for the disease? Chemistry will ultimately solve the problem and thus pave the way for the complete eradication of this death-dealing disease.

Physiology and chemistry are doing much to make clear the true inwardness of many diseases of nutrition, or more specifically diseases of metabolism, such as diabetes, rheumatism, gout and arteriosclerosis, but there remains much to be done for the future service of medicine, and chemistry can surely help in the solution of these problems, as well as throw light on the general questions bearing on the chemistry of living tissues.

THE PROTEINS

Think what the recent gain in knowledge of the chemical constitution of protein matter has done to clarify our understanding of the processes of digestion, of growth, with its construction of new tissues, of metabolism, both physiologic and pathologic. Many things heretofore obscure or wholly misunderstood are looked at today from a totally different point of view, solely because of the facts that chemistry has brought to light. We see that digestion of protein foods, for example, contrary to the old view, is a breaking down of the molecules into their constituent amino-acids; that out of these amino-acids, or building stones, the body cells can select the appropriate groups to build up their own peculiar units, by the union of which larger structures may be formed according to a determined plan or architectural idea. We have learned that proteins are composed of building stones of many kinds, united in very different ways, and we see that the multiplicity of the proteins is determined through differences in the nature of the constituent building stones or amino-acids, and through differences in the manner of their arrangement. As Kossel has said:

> The number of building stones which may take part in the formation of the proteins is about as large as the number of letters in the alphabet. When we consider that through the combination of letters an infinitely large number of thoughts may be expressed, we can understand how vast a number of the properties of the organism may be recorded in the small space which is occupied by the protein molecules. It enables us to understand how it is possible for the proteins of the sex-cells to contain, to a certain extent, a complete description of the species and even of the individual.

Chemistry has led us to see that certain of these building stones are contained in all living cells capable of development, and that these recur in practically unchanged form throughout the animal world. These obviously have a fundamental biologic importance in contrast to others which appear only in certain groups or species. We have come to realize more fully how the body works in building up its own tissue proteins from food proteins which may be quite foreign in nature: a form of synthesis dependent on selective action. If, however, there is a deficit in the food material of some one or more of the essential building stones, then trouble ensues at once, since a complete framework for the new structure is lacking, and there is nothing on which to build. Here lies the probable explanation of abnormalities which occur in connection with the taking of certain foods; i. e., a lack of certain chemical groups or amino-acids, essential for the upbuilding of the tissues.

NATURE OF IMMUNITY

Turn for a moment to the question of immunity, more particularly the natural immunity which gives to the human body a certain resistance to disease germs. What is the nature of these immune factors present in the blood and lymph and possibly in the tissue cells, which are so effective in preventing disease? Are they protein substances or are they of a totally different chemical nature? As we well know, pathogenic bacteria cause trouble not by their mere presence in the fluids and tissues of the body, but because they produce poisons of various kinds, toxins as they are termed. These poisons lead to some kind of reaction with the tissues or fluids of the body, by which is produced a substance endowed with the ability to neutralize the toxin or to kill the bacteria; and, if the body can produce this substance rapidly enough, the disease may be averted. We should have fuller knowledge of these protective substances, and know their chemical nature, to be able to aid the body when disease threatens by increasing the amount of this protection.

How frequently a chance observation, a side result of some specific investigation, leads to far-reaching results in some remote branch of science! The boldest imagination would hardly have ventured the suggestion that Pasteur's original observations on crystallography would open the way for the discovery that the deep-seated chemical changes occurring in fermentation are due to the presence and action of micro-organisms, that such organisms do not originate spontaneously, but are derived from some "infection," and that many of the so-called infectious diseases are the result of micro-organisms of various kinds which give rise to chemical products of great toxicity. Pasteur's original observation showed that certain crystalline substances, as tartaric acid, which exist in two distinct forms identical in all their properties save that one rotates the plane of polarized light to the right and the other to the left, may in solution have no action on a ray of light, the two forms neutralizing each other. Such a solution—the acid (tartaric) being in the racemic form—if allowed to stand long enough to grow moldy undergoes change; one form of the acid disappears, the other does not. Pasteur asked the question why? Out of the attempt to answer that question came an understanding of the broad subject of fermentation, the relationship of micro-organisms to disease, and, in the hands of Lister, its application to surgery, through which the lives of a countless multitude have been saved.

ENCOURAGEMENT OF RESEARCH

It is singular that, while man is ever ready to take advantage of the teachings of applied science in industry, ever ready to follow up any suggestion that promises to increase efficiency or economy in running his industrial plant, or to prolong the life of his machinery, he is slow to give heed to those teachings of science that bear directly on the welfare of his own bodily machinery and that of his children. The people of America should be alive to the possibilities that lie before them in this unprecedented development of chemistry with its promise for a better understanding of the laws of health and a better understanding of possible methods of prevention and cure when disease threatens. The chemists and biologists of the country, however, with their equipment of special knowledge are unquestionably alive to the possibilities before them. As a nation we are in better condition than ever before in the matter of equipment for chemical work and chemical discoveries. Until recent years we as a people were far behind our European co-workers in chemistry, the biologic sciences and medicine. During the last twenty-five years, however, all this has changed and, at present, through our well equipped university laboratories, research institutions, governmental establishments, and especially through our many trained research workers, we are in a position to accomplish much in the various fields of chemical and biologic investigation that bears upon health and disease. It would be an invidious distinction to mention laboratories or investigators by name, but a glance through the journals of the various American societies and research institutions shows quite clearly the character and amount of the work which is being done and the results obtained. But much more is possible, and much more is desirable. America should be, and there is no valid reason why it cannot be, the foremost place for research in all branches of chemistry. Given the proper encouragement and adequate support, research in chemistry can be so developed that the eyes of the scientific world will turn to this country for that advance in knowledge which formerly was looked for only on the other side of the Atlantic.

Just what kind of encouragement is needed? Just what kind of support should be given to bring about this ideal condition? First of all, the right type of man should be encouraged to enter research work, not as a side issue, something to be played with in spare moments, but as a life work. This means that we have to dignify the position of research worker, so that men will come to look on it as a position worth striving for, a position in which the rewards will be commensurate with the importance of the results sought. Too many of the bright young minds of today are deterred from entering on a career which their natural aptitude and their training fit them for simply because they see no assurance of either a livelihood or a position which carries standing in the community. It is said, and probably with more or less truth, that successful investigators are born, and not made; but education and training count for much, and the larger the number of promising young men who can be induced to enter the field, the larger the number of competent research workers shall we have. Further, the larger the number of research workers, the more likelihood of something being discovered that will develop into a valuable find; for we have to remember that many important discoveries have been the result of accident. As has been said, one has to be looking for something to find anything.

Again, we must acquire the habit of encouraging the young worker to become independent and self-reliant. Too many men are spoiled for life, their enthusiasm checked and their initiative destroyed by being kept for years doing the routine work—under the name of research—which some superior lays out for them. In time, such men cease even to think for themselves, and eventually they become an obstacle to progress. As laboratory helpers they have their place, but as research workers they are of negative value and even a menace, since they belittle the title. We must also recognize the fact that the business of research cannot be run as an ordinary manufacturing concern, in which output is calculated on the basis of the number of machines in operation, and any falling off in production calls for immediate scrutiny. The secrets of nature cannot be uncovered at any definite rate of speed, the time element does not admit of mathematical computation, and research workers must not be judged, or their efficiency estimated, on the basis of their daily production. I pity the man who is held to account for a definite number of pages in the society or research journal each year. He may turn out the expected number, but how about the quality of the work described and the importance of the results obtained? Research does not lend itself to forced production, and the young worker, if he is to develop into the right type, must not be trained under a system which demands so many definite results per week or month. On the contrary, there must be freedom in the house, freedom for consecutive thinking, freedom for adequate planning, and time to test experimentally the theory which careful thinking leads to. Given adequate time, results, positive or negative, will come and the young worker can then be judged by the character of his program, the way in which he carries it out, and the ultimate results obtained. Give him every opportunity to prove his worth, unhampered by needless restrictions.

Finally, there must be adequate facilities in library and laboratory for meeting the needs that will arise in connection with almost any piece of research. In America, today, conditions are greatly improved, but not in all quarters where research is carried on are the facilities fully adequate to meet the daily needs. It is expensive, I admit, but the stakes are large, and if we are to win we must see that the research worker is provided with all that is necessary; otherwise he is handicapped at the start and how, under such conditions, can he be blamed for paucity of results?

But again, I would emphasize that what is needed is something more even than adequate facilities. As an English physiologist, writing in behalf of research in medicine, has well said, "It is not financial assistance alone, however, which the nation should provide for the investigator. This is not even the most important stimulus that the nation can provide for him. Recognition and proper standing in the body politic are his due, and these should be at last forthcoming."

BENEFITS OF COOPERATION

It is clear that there is an infinite amount to be done before all that is obscure about the nature of disease and its treatment can be made clear. Much has been accomplished but much remains to be done, and chemistry in its present state of development can do much to aid in the acquiring of that broad and thorough knowledge which is essential. But, as Lord Moulton has expressed it in his introduction to "Science and the Nation," "we can no longer wait for the slow results of casual discovery. The aim of those who would encourage research is to advance our knowledge of the world around us by the only way in which swift and assured progress can be made, namely, by experimental investigation in the hands of men who are concentrating their attention on the problems on which they are engaged. By the use of these means we may confidently count upon success." Organized movement may indeed prove the only satisfactory way of bringing about the solution of the important and large problems in medicine which are confronting the world today.

Cooperation is certainly called for in many cases in which chemists, physiologists, bacteriologists, clinicians and hospital interns can work together with a common end in view. Such combined efforts may yield results of broad application of the highest value, and it is in this way that organization of research promises to be most helpful. It needs no argument to convince one that many biologic and medical problems call for the combined wisdom of different minds, endowed by training and experience in their own particular fields, with broad judgment, which should enable them to contribute much toward the solution of a given inquiry. Again, many problems must be approached through different channels in order to gain some suggestion as to which path promises most fruitful results, so that from every point of view there is advantage, in many cases at least, in drawing on the wisdom of a group of investigators working in closely allied fields. It is true that organization, no matter how effective, cannot and should not attempt to displace entirely the lone investigator who frequently works at his best only when he holds in his own hands all the threads that enter into the woof; for genius is sometimes erratic, and the exceptional mind frequently requires an environment entirely of its own making. But, broadly speaking, organized effort promises speedier results, and results of wider value.

The experiences of the great war have shown quite conclusively how organized effort, properly and wisely directed, can bring results, and there is no reason why in peace the same methods cannot prevail. We have to recognize, as a recent writer in *Science* has said, that "the big problems in biology are too large for individual attack. We must have biologists, chemists, geneticists, statisticians, bacteriologists, pathologists—all working together to solve them—and how much more rapidly science would advance if we could secure such cooperation! A specialist for every phase rather than a 'Jack of all sciences' attacking the problem alone." And what is true of biology is true of medicine and, indeed, of every science when large questions confront us. We have to remember that individual workers, theorists and experimentalists all have their own peculiarities of thought and action, and it is in their united effort that the greatest strength lies. The individual worker, no matter how well rounded, cannot, as a rule, equal the combined capabilities of a group of cooperating workers. The day of systematic research is here, and the opportunities it offers should not be neglected. Large problems must be attacked by large methods. The isolated worker, with his limitations of time and facilities, obviously cannot accomplish the results desired. Cooperation is the key to the difficulty. Many minds, each with its own special equipment and the varied facilities needed, are an absolute requirement for success. When this conception of research is put into practice on the scale required, advance is sure to come.

The very growth of science will, I think, soon compel cooperation as the only effective way in which the larger questions in medicine can be answered. Science, in all its branches, is moving forward at such a rapid pace, accumulating such vast stores of knowledge, that we are all tending to become specialists in very narrow fields of work. This is inevitable; and, if we are successful in the study of our individual problems, we become lords over our special domains, and there we reign supreme. This tends to beget a kind of selfishness, and we are very prone to resent any intrusion on what we are inclined to consider our own preserves. The field may be ours by right of discovery, but the great problems in medicine today are not to be solved by the specialist with that attitude of mind. In the future, if not today, the big problems will be attacked by a group of workers, each perhaps a specialist in his own field, each contributing something the other has not, all working together for the advance of knowledge of that particular problem, putting into the common pool all their skill, experience, individuality and selfishness, actuated solely by the desire to win a solution of the problem. Is this utopian? I think not. On the contrary, it seems to me simply good common sense. To be sure the world has not witnessed much of this kind of cooperation in medicine, but that is no reason why the plan cannot become effective. We are all familiar with the classical work of Bidder and Schmidt, of Pettenkofer and Voit, and of Liebig and Wöhler. Each of these men was a giant intellectually, each no doubt had his own way of thinking and working, yet each pair worked together for years and turned out results of great physiologic importance. To be sure, cooperation as we see it today is on a much larger scale, but the principle is the same, only instead of two minds there may be five or ten.

Just here there is one point that perhaps needs additional emphasis, viz., that cooperation in this case should mean the working together of a group of investigators, each of whom is a master in his own particular field, and not a group of subordinates controlled by one mind. It is like a scientific exploration of an unknown country in which geologist, mineralogist, zoologist, botanist and ethnologist work together with a common interest in the knowledge to be obtained.

Medicine is rapidly changing from an art to a science, and in the accomplishment of this much desired transformation with all it implies in the prevention and cure of disease, chemistry is destined to play an important part.

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OUTBREAK OF BOTULISM AT CAMBRIDGE, IDAHO

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CAMBRIDGE, IDAHO

Sunday noon, Jan. 22, 1922, a birthday dinner was served at the home of C. T., to seven members of the family and two guests. The meal consisted of pot-roast of beef, mashed potatoes, home canned greens (beet and turnip tops), home canned tomatoes with a salad made of vinegar, mustard, eggs and sugar, mince pie made of home canned mince-meat, tea and water.

The persons partaking of this meal were C. T., a man, aged 65; H. T., a woman, aged 25; T., a girl aged 14; E. T., a man, aged 30; R. T., a man 20; B. T., a man, aged 24; R .T., a boy, aged 16; B. C., a girl, aged 14, and N. T., a girl, aged 13, each one of whom partook also of the evening meal, which consisted of home canned cherries, cake and tea. No description of the meals of the preceding day was obtainable. During the next week, six of those at the dinner died, two others were severely ill, and only one showed no symptoms.

C. T., the father, became nauseated about 9:30 Sunday evening, and vomited copiously, but slept well during the night and was apparently normal until Monday noon. While the symptoms in every case were practically identical, two types were noted, one in which the vomiting was marked and the duration of illness shorter, and one in which prostration appeared to be the predominating symptom. For brevity, only two of the most typical cases will be discussed.

H. T., schoolteacher, aged 25, consulted me, Monday morning at 10 o'clock, stating that she had awakened feeling very much fatigued, and complained of dizziness and blurring of vision: she had eaten no breakfast and very little supper. She was agitated, crying nervously at times, and seemed to have difficulty in breathing and swallowing; her temperature and respiration were normal, and the pulse rate was 90; the pupils were dilated and reacted very sluggishly to light and accommodation. Rest in bed, 2 ounces (60 c.c.) of castor oil every two hours for four doses, and strychnin sulphate, 1/30 grain (0.002 gm.), every three hours was recommended. Her gait on leaving the office was unsteady, and she complained of a peculiar numbness of the arms and legs.

A 2 p. m. she was worse. Breathing had become more difficult, vomiting appeared, and bilateral blepharoptosis was pronounced; swallowing became very difficult and later impossible; the mouth became dry, and efforts to expectorate stringy mucus were distressing; weakness of the arm, leg and neck muscles was marked, and vomiting became almost incessant and intractable; perspiration was free, prostration rapidly increased, and death occurred at 5:30 p. m., about thirty hours after the Sunday meal and twelve hours after the onset of the first symptoms. Consciousness was retained until half an hour before death. No involuntary passage of urine or feces was noted in any of these cases. Obstinate constipation and scanty urine amounting almost to suppression were noted in all the cases; death apparently resulted from respiratory paralysis.

C. T., carpenter, aged 65, ate heartily of the Sunday meal, taking more of the greens than any other person present, and sprinkling them liberally with vinegar. He vomited copiously Sunday evening, and Monday noon complained of much fatigue; bilateral ptosis of the lids was noted and this symptom gradually became very marked. He complained of a stuffy feeling in his throat, and his speech was thick; his pulse rate was from 90 to 100, of fairly good quality, and his temperature and respiration were normal; the neck muscles became very weak, making it necessary to support his head when changing his position in bed; the stools were dark and foul, and the urine was scanty, but negative on examination. Vomiting was not noted later, and prostration steadily increased until his death at 5:30 a. m., January 26.

The cases of R. T., aged 16, and B. C., aged 14, are worthy of mention, as both showed unmistakable signs of poisoning, four and five days, respectively, after the Sunday meal; each one merely tasted the greens, and each showed decided weakness of the arms, legs and neck, slight ptosis of the lids, and slight dysphagia at this time. Two months after onset of the symptoms, B. C. has fully recovered, though R. T. is not sufficiently strong to mount a horse unassisted.

Blepharoptosis, paresthesias in the extremities, weakness of arm, leg and especially neck muscles, dyspnea, dysphagia and aphonia were noted in each fatal case: dilatation of the pupils with sluggishness of the light reflex and Babinski's sign were present, and the knee-jerks were exaggerated. Necropsies were refused by the families.

Nerve stimulation, and elimination were instituted; cracked ice was given when swallowing became difficult, and physiologic sodium chlorid solution was given subcutaneously and by rectal drip.

In the case of the survivors, free elimination, with magnesium sulphate, one-half ounce (15 gm.) four times daily; potassium permanganate, 1 grain (0.065 gm.) 6 ounces (200 c.c.) of water, internally four times daily, and sodium bicarbonate, 1 dram (4 gm.) internally four times daily, were used.

No specimen of the suspected food or the container could be obtained for examination. Surviving members of the party state that they ate freely of the Sunday meal and the evening lunch, excepting the canned greens, and gave as their reason for refusing them that they had a peculiar musty smell and an unpleasant taste which they were unable to describe: of seven cans of food prepared at the same time and under the same conditions as the suspected greens, five showed evidence of spoilage, though the laboratory findings were negative for *B. botulinus.*

Whether or not the course of the disease in the case of the survivors was influenced by the treatment administered is problematic. Good results have apparently been obtained in avian botulism by such treatment in this vicinity, and further experiments along these lines would be interesting.

PULMONARY ABSCESS

AN ANALYSIS OF TWO HUNDRED AND TWO CASES FOLLOWING OPERATIVE WORK ABOUT THE UPPER RESPIRATORY PASSAGES *

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Of the reported number of cases of lung abscesses to date following tonsillectomy, opinion is divided as to their causation among three modes of transmission of the infective material: by (1) blood stream; (2) lymphatic extension, and (3) direct aspiration. This work was undertaken in order to establish, if possible, the mode of transmission of infected material.

Two points bearing directly on this question were considered of fundamental importance: (1) the time of onset of symptoms after operation, because we believed a blood stream infection would develop early, and a lymphatic extension would give an abscess in a longer time, and (2) the lobe of the lung affected.

It was hoped that definite answers from a large number of men doing this work would bring out cases which, in the usual course of events, would not find their way into literature, and so give a basis from which we could draw definite conclusions. A questionnaire was sent to 1,020 laryngologists in this country and Canada, asking:

1. How many cases of lung abscess have you seen following operations about the nasopharynx or buccal cavity?
2. Were these operations performed with the patient in the sitting or the recumbent position, and what anesthetic was used?
3. In which lobe was the abscess localized?
4. How soon following operation did the symptoms develop?
5. Was there any question as to a previous pulmonary tuberculous or other lesion? If so, what lesion?
6. Mortality from lung condition in (*a*) cases in which operation was performed, and (*b*) cases in which operation was not performed.
7. Type of tonsils. Did the crypt débris come out in noticeable quantity at operation, and was suction used?
8. Was any attempt made to empty crypts before operation?

Replies have been received from 508 men, 364 reporting no lung abscesses following operations, and 144 reporting a total of 202 cases. Therefore, about 50 per cent. received prompt attention, and the replies are noted in the accompanying tabular analysis. The tabulated results follow in the same order as the eight queries, and are noted in percentages under "Lobe of Lung," and "Mortality," but otherwise only the number of cases are tabulated. Every endeavor has been made to secure each man's individual cases, and to exclude those from institutions as far as possible, in order to avoid the same case being reported more than once. Cases that did not fall within this category, or in which data were indefinite, were excluded; thus, about seventy-five were not analyzed.

POINTS OF IMPORTANCE

Elapsed Time Before Development of Symptoms.—It is a question whether or not those abscesses occurring weeks and months after operation can always be traced to this procedure; but, for obvious reasons, these have been included in averaging the time at which the symptoms developed.

ANALYSIS, BASED ON REPORT OF TWO HUNDRED AND TWO CASES

Position	Anesthetic	Crypt Débris		Crypts Emptied Before Operation		Suction Used		Lobe of Lung	Preexisting Pulmonary Lesion	Mortality		Symptoms Developed
		Yes	No	Yes	No	Yes	No			Operative	Not Operative	
Upright, 64 Recumbent, 134	Ether, 151* Local, 39 Gas, 8	103	38	12	144	72	93	Right: Upper, 13%+ Middle, 9%+ Lower, 41%+ Left: Upper, 10%+ Lower, 19% No definite lobe given: Right, 12 Left, 14 Right or left not given: Lower, 2 Multiple, 5 Not stated, 58	Tuberculosis, 33 Other, 6	33 16%	16 7.9%	Average, 9½ days (Where tuberculous lesion had previously been diagnosed, 6½ days)

Cases Considered Under Upright Position	Semirecumbent (anesthetic, ether)	25
	Local (cocain and procain used)	31
	Local (procain only)	3
	Local (cocain, 0.1 per cent.; epinephrin 1:10,000)	1
	Local (cocain only)	4

Fifteen cases occurred after a lapse of a considerable period; namely, from twenty-one to 150 days. Excluding these, the average date of onset of symptoms would be lessened to six days; for those complicated with previously diagnosed pulmonary tuberculosis, five days.

Of fifteen cases occurring within the first forty-eight hours, two were multiple, and the rest were equally divided among all lobes, the lower lobes having an equal percentage with the others.

Of the thirty-nine local anesthesia cases, five developed within the first twenty-four hours, but the other thirty-four bear the same relation in development as for cases in which operation was performed under general anesthesia.

Position of Patient.—Under the upright position was included the semirecumbent position, in which gas and ether were used as an anesthetic. The relative number of cases which have followed operations in the semirecumbent or the upright position is interesting, and will be commented on later. Considerable significance should be given to a verbal report which we have received from a Canadian hospital in which four lung abscesses occurred in rapid succession following the use of a new mouth gag which held the tongue firmly depressed at the base. Easy entrance of air is attained by drawing the lower jaws forward or pulling on the tongue. The trained anesthetist is well acquainted with this fact and uses it repeatedly. Some tongue depressors accomplish the same result and open the glottis freely.

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*From the Bronchoscopic Clinic, Jefferson Hospital.

Anesthesia.—For general anesthesia, gas and ether were used in every case. No other anesthetic was mentioned. The method of administration has evidently not been considered of importance as a causative factor. The point was not discussed, although many others not included in the questionnaire were. For local anesthesia, cocain applied locally and procain injected were used with but few exceptions. The strength of solution was not mentioned.

Crypt Débris.—The number of cases in which crypt débris was present in noticeable quantity at the time of operation shows how keen operators have been to note a condition which they believed presented a menace to satisfactory results.

Crypts Emptied Before Operation.—In only a small number of cases was any attempt made to cleanse or prepare the field before undertaking the operation. One must conclude that either this has been tried and proved an unsatisfactory procedure, or that no general serious thought has been given to the question.

The Use of Suction.—In a relatively large number of cases, no suction was used, although it must be borne in mind in this connection that some of these cases antedated the general use of suction machines (even though this number is not large).

Localization.—In 60 per cent. of the reported cases, the abscess was localized in either the right or the left lower lobe (right lower, 41 per cent.; left lower, 19 per cent.). This closely approximates the percentages of Jackson, given for inspired foreign bodies in the lungs.[1]

Pulmonary Lesion.—It is interesting to note that a previously diagnosed tuberculous lesion has shortened the time of the onset of symptoms after operation.

Mortality.—The mortality from pulmonary abscess following operations about the upper respiratory passages is much lower than that generally given for pulmonary abscess from all causes. In some cases a subsequent operation was performed to relieve the disease. Some were not operated on. Cases of bronchoscopic evacuation of lung abscess are considered under nonoperative, when they have been reported.

One derives little comfort, however, from this mortality figure. Not a few cases are still under treatment, and when one considers the awful catastrophe which has overtaken these patients, certainly any suggestions relative to their etiology which will eventually lead to their prevention should command at once our closest scrutiny.

The largest number for any one section has come from the vicinity of eastern Massachusetts, where most patients are operated on in a sitting or semirecumbent position under general anesthesia.

The total number of records received of tonsillectomies has been about 450,000. The data are not accurate enough to fix the incidence. Obviously, it is impossible to obtain records of every operation throughout the country. From available data, pulmonary abscess occurs once in from 2,500 to 3,000 tonsillectomies. I am aware that this average may not be accurate, but it seems reasonable, and is based entirely on the answers to this questionnaire.

Fourteen cases followed other operations about the upper respiratory tract: extraction of teeth, five; washing out abscess in antrum, one; opening peritonsillar abscess, one; removal of adenoids, two; operation on hard palate, one; nasal deformity correction, four.

Only four pulmonary abscesses had been previously reported following local anesthesia. These thirty-nine cases show that more occur than have been suspected.

The lobes involved show that infection takes place in the same relative percentage as with general anesthesia.

Only one case presents a clear clinical picture of lymphatic extension.

COMMENT

The replies to these queries have been most interesting and instructive. Many have taken not a little time to send information which they considered might be helpful in establishing the mode of infection. With few exceptions, the inspiratory mode of transmission of infected material seems to be thought the most usual.

In explanation of the relatively large number of cases in which operation is performed with the patient in the upright position under local anesthesia, namely, cocain applied locally and procain injected, where heretofore, because of the presumed presence of the bechic reflex, we had thought the inspiration of infected material reduced to a minimum, Dr. Chevalier Jackson of Philadelphia writes:

> I have ceased the local use of cocain solution in operations on the adult larynx because I have found the larynx to be completely anesthetized by an application of an 8 per cent. solution of cocain to the lower part of the pharynx, taking care only to get it deep enough to reach the superior laryngeal nerve. This gives a complete and perfect anesthesia of the larynx without the disadvantage of irritating the laryngeal mucosa, as by the local application with swabs. The reflexes are totally abolished, so that the vocal cords can be operated on without exciting either cough or reflex movements. Apparently this is due to the anesthetizing of the superior-laryngeal nerve through the mucosa of the laryngeal pharynx.

This may clarify the situation and establish the sequence. The point is, Does the application of cocain before operation in these "local" cases have an inhibitory effect on the cough reflex by acting on the superior laryngeal nerve and thus remove a safeguard against infection?

PROPHYLAXIS

From suggestions received, it would seem that there is a real necessity for a standardization of this work throughout the country, with one end in view; namely, a prevention of entrance of infected material into the lungs through the air passages. The pulmonary condition should be ascertained before operation. The field of operation should be prepared by getting rid of the débris as far as possible, and using antiseptics locally in the crypts. The operation should be performed with the patient in the supine position, with the head slightly lowered. No opiates should be given before operation. There should be no profound anesthesia, on account of the effect on the pharyngeal reflexes during and immediately after operation. As Jackson has so often pointed out, "the bechic reflex is the watchdog of the lungs. Don't drug it unnecessarily." The escaping of infected material into the larynx should be guarded against by any of the many means which have been suggested in answers to the query. In my own work I have found the tonsillectomy sump[2] of great aid in confining and removing débris before it has a chance to be inspired. The patient should be returned to bed in a prone position, with the head to the side, and no pillow allowed for twelve hours.

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[1] Jackson, Chevalier: Peroral Endoscopy, Laryngoscope Company, 1914.

CONCLUSIONS

1. The vast majority of cases are of inspiratory origin because of (*a*) time of development and (*b*) involvement of the lower lobes of the lung in 60 per cent. of the cases (right lower, 41 per cent.; left lower, 19 per cent.), being almost the same relative incidence as in cases of inspired foreign bodies.
2. Pulmonary abscess occurs once in from 2,500 to 3,000 tonsillectomies.
3. Blood stream transmission of infected material, causing pulmonary abscess, occurs, but in a relatively small number of cases.
4. Lymphatic extension is a rare mode of infection.
5. The semirecumbent and upright positions are not as free from this complication as has been heretofore supposed.

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DIAGNOSIS OF GALLBLADDER DISEASE *

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Twenty years ago, the appendix held first place in medical esteem as a source of abdominal symptoms. Today its claim to supremacy is rivaled by that of the gallbladder; for gradually the conviction has been reached, based on the experience of many observers, that this organ is frequently diseased and that its importance must constantly be borne in mind in considering the meaning of complaints referred to the abdomen.

What causes the gallbladder to become diseased so often? Nearly all its pathology can be traced primarily to infection. Micro-organisms enter it constantly, directly carried to it by the blood, or indirectly by the bile, or by way of the common duct from the bowel. Careful investigation seems to make it certain that the most frequent road of entrance is from above, not from below, the gallbladder. In any general infection, such as typhoid fever or pneumonia; and in any localized infection, from a focus in tonsils, tooth sockets, sinuses or elsewhere in the body, germs may be carried in the blood stream to the gallbladder's walls or in the bile to its interior. To the clinician, the importance of this fact lies in the relation that the patient's previous history bears to the recognition of gallbladder disease. An attack of typhoid fever, years before, or of tonsillitis or of abscess in the middle ear, or of chronic nasal discharge, or of various other general or localized infections, is of value in the clinical history when suspicion of gallbladder disease has been aroused, because it affords a clue as to how the latter may have been produced.

But not all germs that enter the gallbladder lead to its infection. Some other factors must exist to determine when micro-organisms shall colonize there, to induce a pathologic condition, or when, on the other hand, they shall remain as harmless visitors or else be promptly destroyed. Such factors are apparently those that lead to stasis of the bile in the gallbladder. Thus, lack of exercise, a sedentary life, overindulgence in food, obesity and sluggishness of body have long been looked on as predisposing to gallbladder disease, and such items in the patient's history are always suggestive.

Once infection has occurred, the changes it induces are manifested in: (1) the contents of the gallbladder, which become thicker and more viscid, owing to the mixture of the products of inflammation, such as mucus, desquamated epithelium and white blood cells, resulting often in the precipitation of concretions known as gallstones, formed largely from cholesterin, which is derived from the bile or from the cells of the mucous membrane and is present in excess under these abnormal conditions; (2) the mucous membrane, which becomes reddened and granular and often shows minute areas of ulceration; (3) the wall, which gradually thickens and toughens and becomes fibrous, thus contracting and decreasing the size of the organ, and (4) the peritoneal surface, to which other surrounding organs may become attached because of a pericholecystitis, particularly the pylorus and duodenum and the hepatic flexure of the colon. All of these pathologic changes are significant, for as one or the other predominates, the clinical picture changes and the evidence available for diagnosis varies.

The most common type of disease of the gallbladder is a catarrhal cholecystitis, due to a low-grade infection, chronic or subacute, with recurring exacerbations. During the quiescent stage, no symptoms referable to the gallbladder may be present at all, though reflex ones may arise, referred to the stomach, and due to disturbance of gastric secretions and motility. At the time of an acute intercurrent attack, a sudden flare-up of a previously smoldering inflammation, pain and tenderness over the gallbladder, fever, reflex vomiting, possibly jaundice, call attention to the site of the disease. If gallstones have formed during a long-standing catarrhal inflammation, one may attempt an escape coincident with one of these acute exacerbations and so give rise to the clinical picture known as biliary colic. If the acute attack is the result of a virulent infection, the cellular products of inflammation usually predominate and the catarrhal becomes a purulent exudate, leading to so-called empyema of the gallbladder, with increased severity of the constitutional symptoms, higher temperature and pulse rate and with danger of perforation and local or general peritonitis, exactly as with a suppurative appendix. If a stone lodges in the cystic duct on its way out, the result is the gradual formation of a tumor from accumulation of mucus in the gallbladder; and tumor formation never occurs in gallbladder disease except from obstruction to the cystic duct by inflammatory swelling or by impacted calculus, or from cancer of the organ. In the former, the tumor is elastic and yielding; in the latter, it is fibrous and hard.

Cancer of the gallbladder, when it occurs, is usually the ultimate sequel of chronic cholecystitis and cholelithiasis, resulting from chronic irritation by stones. If a stone lodges in the common duct, but does not completely obstruct, there usually results sepsis with chills, fever and sweats, with recurring attacks of biliary colic and with partial jaundice, varying in degree from time to time; a condition long ago described by Charcot and still known as "Charcot's fever." Thus the various forms under which gallbladder disease presents itself are not many; and practically all of them originate as cholecystitis. If this can be recognized in its early stages and removed, many disasters that are threatened later on may be prevented, much ill health obviated and death from possible complications may be averted.

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[2] Presented before the Philadelphia Laryngological Society, Feb. 6, 1922.

* Read before the Fresno County Medical Society, Fresno, Calif., March 7, 1922.

For the recognition of gallbladder disease, the means available are: history, physical examination, laboratory examinations and roentgen-ray screen and films.

HISTORY

The larger the experience, the more certain the conviction that the history of the condition gives the most valuable evidence of all. For the great majority of cases, which correspond in pathology to chronic cholecystitis and cholelithiasis, there are fairly constant manifestations that permit classification into four distinct groups: These are: Group 1, recurring attacks of colic, with good health between. Group 2, recurring attacks of colic, with more or less constant indigestion between. Group 3, chronic stomach trouble, with subacute gallbladder attacks, and Group 4, chronic stomach trouble, with no history pointing to gallbladder over long periods of time.

Group 1. These are the cases in which attacks of biliary colic recur at irregular intervals, with good health for months or years between. Their description is usually so characteristic that the story by itself makes the diagnosis. The well-known features of the attack are the sudden onset without apparent cause, the violence of the pain, its site at the right costal margin, its radiation around the right side and under the right shoulder blade, its duration for hours, as a rule, unless relieved by an opiate, and the soreness it leaves behind it after the acute pain is gone. But these typical and characteristic manifestations are not always as described. Variations from the rule occur and lead to confusion. The pain may be felt in the epigastrium and may radiate straight through to the back, suggesting the stomach as its site of origin; or it may be felt at the left costal margin instead of the right; or beneath the sternum simulating angina pectoris; or below the right costal margin so far down as to make one suspect the appendix. If jaundice occurs as a sequel of the attack, it makes the diagnosis practically certain. But this condition may manifest itself only for a few hours, in the eyes or in the urine, and so be overlooked; while many cases, at least half, never show it at all. The absence of jaundice from the history is by no means so important as its presence, and should never throw doubt on the diagnosis if other details are characteristic. Vomiting frequently occurs at the height of an attack, convincing the patient that some disease of the stomach caused the pain, because the latter often subsides after the stomach is emptied. But so many acute attacks of pain cause vomiting, whether they originate inside or outside the abdomen, that this symptom never identifies the stomach as the site of the disease. All these minor variations from the usual history, due to different radiation of the pain, to the absence of jaundice or to the presence of vomiting, are insignificant in comparison with the main features of sudden onset, severity of suffering, site of the pain, repetition of the attacks after an interval of good health, and their occurrence unexpectedly day or night, with no recognizable cause. This history is the most frequent of all in gallbladder disease, and is practically diagnostic; but, unfortunately, it represents a late stage, with extensive pathologic change.

Group 2. These cases present the story not only of recurring attacks of colic but also of constant stomach trouble between attacks. In fact, the suffering caused by indigestion makes such an impression on the patient that this usually constitutes the main complaint; and unless the paroxysms of pain are frequent, they may be entirely forgotten until direct inquiry is made about them. Their details are the same in this group as in the former; and the only difference lies in the distressing disturbance of digestion that persists between attacks. The type of this indigestion is not always the same in every case. The story is frequently one of fulness and a sense of weight soon after eating, with persistent gas formation and constant belching. But in many instances the complaint is rather of sour stomach, with heartburn, water brash, nausea and vomiting of very irritating material. There is, therefore, no characteristic to identify the stomach trouble as due to gallbladder disease. What does suggest this is the occurrence from time to time of attacks of colic similar in all respects to those described in Group 1.

Group 3. The peculiar feature in this group is the absence of attacks of violent pain such as occurs in the two preceding groups. The chief complaint again is of the stomach and of indigestion. But in addition the patient tells of another kind of annoyance or suffering, constant or recurring in so-called "spells." This is a feeling of fulness and soreness in the right side at the border of the ribs, as if something were in the way. There is no sharp or severe pain, but a dull, aching and nagging feeling, or a sense of beating and throbbing and of distention. This is usually induced or aggravated by jarring, as by an auto ride, and is frequently relieved by a dose of calomel, which patients learn to take without advice.

Group 4. There are patients that complain much of the condition of the stomach over long periods of time, with no symptoms in the history to identify the real cause of the complaint. Some of them describe discomforts corresponding to those of peptic ulcer; some of them, with "gas" as their major complaint, present the story that usually suggests chronic gastritis; while a few, with no appetite and with a loss of weight in connection with chronic dyspepsia, arouse the suspicion of gastric cancer. Frequently, these cases are assigned to a group called "gastric neurosis," or "nervous indigestion," because no other place can be found for them. There are no attacks of biliary colic to direct attention to the gallbladder, not even the less serious discomfort described in Group 3. Heretofore, there was really no way to be sure that these cases were due to gallbladder disease until suddenly, sooner or later, perhaps after the patient had been under observation for years, there came a typical attack of severe pain, such as those described in Groups 1 and 2, to throw light on the previous obscurity, or, until in despair, after trying in vain various dietetic and medicinal cures, the patient submitted to exploratory operation. But recently, by the newer methods of investigation of the fasting stomach contents, of the duodenal contents and particularly of the material obtained by drainage of the biliary tract, sources of information have been supplied that lead to earlier diagnosis, so that these cases in Group 4 can be recognized and treated before the condition has become advanced and surgery is inevitable.

These four groups include the great majority of all patients who have gallbladder disease; but there are a few complications that may arise modifying the symptoms described or introducing new ones: (1) If at any time in the course of a chronic cholecystitis an acute exacerbation occurs of more than usual severity, with chills added to the clinical picture, higher fever and rapid pulse and a tendency of the symptoms to become more rather than less violent as hours go by after their onset, then the possibility is suggested of a purulent exudate, threatening rupture of the gallbladder and general peritonitis. (2) If, in addition to a history of frequent recurrent attacks of biliary colic such as those described in Group 1, with more or less constant disturbances of digestion such as those added to the clinical picture in Group 2, there arises a still further complaint of chills, fever and sweat in paroxysms resembling malaria, the probability is great that a stone lodged in the common duct, obstructing and blocking drainage, is producing sepsis from the infected duct contents. (3) Occasionally, but rarely by comparison with other symptoms, the patient speaks of a lump discovered, palpable in the right upper abdomen. Occurring in a patient whose previous history corresponds to that of any the groups described, this means the addition of some new complication, usually distention of the gallbladder caused by a stone impacted in the cystic duct, or else cancer of the gallbladder. So far as history is concerned, there is no symptom produced by these complications that may not be produced by chronic cholecystitis and cholelithiasis, except that of a palpable tumor. Loss of appetite, loss of weight, loss of color and strength, may occur in the course of any gallbladder disease, without meaning malignant degeneration; and the pain and indigestion that are usual are not changed in any such way as to become diagnostic of a complication that is unusual.

PHYSICAL EXAMINATION

The proof of gallbladder disease that physical examination affords is notoriously uncertain and unreliable. No signs whatever may be discovered at one investigation, even though they are distinctly present at another. All that is ever found may be what the patient feels, not what the diagnostician perceives. But in some cases, nevertheless, the evidence is so plain that it cannot be missed. The possible results of physical examination fall under the following heads:

1. *Negative Findings.*—The gallbladder lies normally beneath the costal margin and under the edge of the liver, entirely out of reach by palpation through the abdominal wall. Furthermore, the most common effect of chronic cholecystitis is to produce gradually a small, contracted and shrunken organ, even though it contains stones. It is not surprising, therefore, that during long periods when there is no active inflammation going on, nothing abnormal can be detected by palpation, even though the changes already produced are causing reflexly incessant gastric distress.

2. *Subjective Evidence.*—Too much dependence ought not to be placed on what the patient feels, unless the palpating hand at the same time discovers some definite change from normal. Tenderness over the gallbladder area, no matter by what method or maneuver it is elicited, is not enough by itself to justify the conclusion that the gallbladder is diseased.

3. *Objective Evidence.*—What one can expect to find is increased resistance and rigidity, or a palpable tumor, in the right hypochondrium. (*a*) Unusual resistance to pressure at the right costal margin as compared with the left, together with pain caused the patient by this manipulation, is the utmost to be anticipated from cholecystitis. Even this is not constant. It may be found at one time and not at another; and undoubtedly its presence or absence depends on whether or not there has been recent acute inflammation. It is much more likely to be discovered soon after an attack of biliary colic or during the periods of dull aching pain and sense of distention in the right side. In the intervals of quiescence, for weeks or months, no such abnormality is demonstrable, even though an extensive pathologic condition exists, as shown by subsequent operation.

(4) A definite tumor in the gallbladder area means some complication. It is not found in the great majority of cases of chronic cholecystitis and cholelithiasis. Its discovery implies one of three things: first, an unusually virulent type of acute inflammation, with seropurulent or purulent exudate, with rapid distention and threatened perforation; second, obstruction of the cystic duct by a stone and gradual distention of the gallbladder by accumulation of mucus; third, cancer of the gallbladder. Of course, the first question to decide is whether the tumor found really originates from the gallbladder; and this, as well as the character of the tumor, is determined by consideration of all the other evidence furnished by the history, by laboratory examinations and by roentgen ray, as well as by physical examination.

LABORATORY EXAMINATIONS

1. *Stomach Contents.*—Investigation of the contents of the stomach gives more information now than it did a few years ago, because of better methods. My own conviction is that the best results are obtained by following the plan described by Rehfuss in his article in "Oxford Medicine." This includes examination of the fasting stomach contents as well as of those obtained after the Ewald test meal by half-hour extractions. While neither examination of fasting contents nor fractional analysis after a test meal gives data that are diagnostic of gallbladder disease, these procedures are valuable because they help to exclude intragastric pathologic conditions and to prove that the digestive symptoms of which the patient complains are produced reflexly by conditions outside the stomach. Two findings, however, suggest gallbladder disease, even though they do not prove it. The first of these is the presence of bile in the fasting contents, not merely a chemical trace, but an amount visible and obvious to the naked eye. Lyon [1] is convinced from his studies that bile is normally discharged into the duodenum only in response to the stimulus of taking food, and should not be present there in the fasting state. Even so, it cannot find its way into the stomach except by regurgitation due to reverse peristalsis in the duodenum; and this is most often the result of adhesions between the duodenum and the gallbladder, though these may be produced by ulcer or other disease outside the gallbladder, as well as by cholecystitis.

Whatever the explanation, bile in the fasting stomach is abnormal and serves to arouse suspicion of gallbladder disease. The second finding of significance is a clean achylia. The fasting contents tell whether the stomach is really clean or contaminated by an excess of mucus, by blood, by pus or by abundant micro-organisms, indicating intragastric pathologic conditions; while the fractional gastric analysis determines whether there is a true achylia during the whole digestive period, or only delayed secretion making its appearance later than the first hour and so overlooked by the old method of analysis. Not all gallbladder cases, by any means, produce achylia; in fact, my own series of cases show hypersecretion occurring more often than hyposecretion. But from experience acquired not only in gallbladder dyspepsias, but also in other types of chronic gastric disorder, the conclusion seems justified that while either increased or decreased secretion may be caused by gallbladder disease, achylia is found associated with it more often than with any other extragastric disease. Therefore, the discovery of this lack of secretion in a patient whose history is already suspicious adds one more bit of evidence pointing toward chronic cholecystitis.

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[1] Lyon, B. B.; Bartle, H. E., and Ellison, R. T.: Am. J. M. Sc. **163**: 60 (Jan.) 1922.

2. *Duodenal Contents.*—For this investigation, the patient should swallow the duodenal tube in the early morning, and then lie on the right side with the knees drawn up, in a bed that has the foot elevated. After from a half hour to one hour, as a rule, tests by litmus paper show that the material obtained is alkaline and therefore comes from beyond the stomach. Usually this material is yellow, and is clear rather than turbid. In fasting, bile in the duodenal contents is not the rule; but whether its presence means disease of the biliary apparatus or simply some reflex disturbance of its functions is not yet determined. Bile should be poured into the bowel only in response to the stimulus of food; its discovery in the fasting contents is therefore suggestive of some abnormality. Smears examined microscopically determine the presence or absence of red blood corpuscles, pus corpuscles, desquamated epithelium and micro-organisms; and of particular importance, according to Einhorn,[2] in the diagnosis of a diseased gallbladder, is the finding of cholesterin and calcium bilirubin crystals. Intestinal parasites not previously suspected as a possible cause of disease in the upper right quadrant may be found in the duodenal contents; such, for instance, as the flagellates *Giardia*,[1] which colonize by choice in the duodenum, but about the pathogenicity of which there is still question. It is said that they may cause symptoms resembling those of cholecystitis. *Endameba histolytica* has never been found in duodenal contents or in the bile, even though the gallbladder is occasionally a carrier and continues to supply the organisms to the bowel until it is surgically removed.

3. *Gallbladder Contents.*—If only these contents of the gallbladder could be obtained, they should give the most conclusive evidence as to the presence or absence of gallbladder disease. How to segregate gallbladder bile for examination by itself has, therefore, been the object of much recent investigation. In 1919, Lyon[3] announced that he had found a way to do this. He utilized an observation published by Meltzer, in 1917,[4] that when the sphincter at the mouth of the common duct relaxed, the gallbladder contracted by a law of contrary innervation; and as magnesium sulphate solution injected into the duodenum relaxed the sphincter of Oddi, he suggested that, by this means, one could induce the gallbladder to contract and eject its contents. On this theory, Lyon constructed his plan for gallbladder drainage. After the tube is proved to have entered the duodenum, by the alkaline reaction and the character of the material withdrawn, 100 c.c. of a 25 per cent. solution of magnesium sulphate is infused. After a few minutes of aspiration, the bile obtained becomes much darker and thicker, and this material is assumed by Lyon to come direct from the gallbladder and to be available for study as a means of recognizing disease in that organ. If it is unusually thick and tarry, particularly if it contains mucopurulent flakes, pus cells, bacteria, grains of sand or small stones, such findings are interpreted as indicative of chronic cholecystitis.

Recently, however, much doubt has been thrown on this whole procedure. Even Meltzer's original theory has been disputed. Experiments have been made[5] showing that, with Lyon's tube passed into the duodenum and with the gallbladder under direct observation during subsequent laparotomy, when the magnesium sulphate solution was introduced no stimulation or contraction of the organ occurred and no bile flowed from it unless it was compressed by hand. The conclusion is that the dark, thick bile cannot be assumed to come from the gallbladder rather than from the ducts, either extrahepatic or intrahepatic; and that whatever abnormal elements are found cannot be considered to indicate disease of one part of the biliary tract rather than of another.

The whole matter is thus at present in a state of controversy and uncertainty. Every man must form his own conclusion, based on his own experience; and from my own observation, though limited, I am convinced that the procedure is of value in diagnosis and helps in the recognition of disease of the biliary tract. Ultimately, the degree of this value will be determined, but only by repeated tests, and never by abandoning the attempt to acquire further information.

4. *Feces.*—To search for gallstones in feces after an attack of biliary colic is scarcely worth the time it consumes. One may easily be overlooked, and its absence is not significant, if the attack has been typical. Usually, its discovery is not essential to the diagnosis. Clay-colored feces signify deficient bile and undigested fat, but not necessarily any disease of the gallbladder; more often disease of the common or hepatic duct. Intestinal parasites may cause symptoms of pain in the upper abdomen, with indigestion, such as characterize disease of the gallbladder; and the discovery of segments or ova in feces sometimes clears up a diagnosis previously obscure. Attention has already been called to the possibility that amebic dysentery may be kept up by organisms lurking in the gallbladder, and that *Giardia* may produce a clinical history simulating gallbladder disease. The discovery of these parasites in the feces is therefore of importance with reference to the gallbladder, as well as to the bowel itself. Finally, the persistent presence of occult blood in feces is more significant of duodenal ulcer than of cholecystitis, and may help to throw light on the nature of the disease causing pain and tenderness in the right upper quadrant.

5. *Urine.*—During and for a short time after an attack of biliary colic, the urine is not infrequently dark brown, and analysis shows that it contains bile, even when no other signs of jaundice appear. This is

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[2] Einhorn, Max: Med. Rec. **100**: 1015 (Dec. 10) 1921.

[3] Lyon, B. B. Vincent: Diagnosis and Treatment of Disease of the Gallbladder and Biliary Ducts, J. A. M. A. **73**: 980 (Sept. 27) 1919.

[4] Meltzer, S. J.: Am. J. M. Sc. **153**: 469 (April) 1917.

[5] Bassler, Anthony; Luckett, W. H., and Luez. J. R.: Am. J. M. Sc. **162**: 674 (Nov.) 1921.

always significant and helps to determine the meaning of a paroxysm of abdominal pain. Bile in the urine, for instance, does not result from the passage of a renal calculus; and, on the other hand, blood in the urine is not a consequence of the passage of a gallstone. Normal urine after an attack of pain, showing neither bile nor blood, does not exclude gallstone colic, but it does speak against renal stone. In the intervals between attacks or in the chronic cholecystitis cases of Groups 3 and 4, the urine is normal and gives no aid in direct diagnosis of gallbladder disease, though it must be remembered that chronic pyelitis, either tuberculous or pyogenic, may give rise to recurring attacks of pain in the right upper abdomen and back, and that the discovery of pyuria during periods of freedom from symptoms may furnish a clue as to what such attacks mean.

6. *Blood.*—The blood count at the time of an acute cholecystitis shows a leukocytosis, and in the acute purulent variety the white count may be very high; but in the quiescent interval between acute attacks, or in the chronic cases in Groups 3 and 4, the blood count affords no aid in diagnosis, for there is no formula that is characteristic. Every clinical picture presented by gallbladder disease may be simulated by syphilis of the liver, so that the Wassermann test should be made as a routine procedure. Sometimes this test will save the patient from needless surgery.

FLUOROSCOPY AND ROENTGENOGRAPHY

No one can doubt by this time the value of fluoroscopy and roentgenography in diagnosis. Nevertheless, the evidence given by this method of diagnosis is not infallible and must not be accepted as unassailable. In a given case of gallbladder disease, it may add nothing to the data collected by the history, physical examination and laboratory findings; and yet its negative report must not be understood to prove all other witnesses wrong. On the other hand, it may appear to implicate the gallbladder when no disease is there, and call attention to abnormalities that are shown by operation not to be present. It is not fair, therefore, to exalt this method of diagnosis to a pedestal above all others or to claim for its pronouncements the rank of Delphic oracles.

The evidence obtained by roentgen-ray examination is of three kinds: direct, indirect and eliminative.

1. Direct evidence means the demonstration of changes in the gallbladder itself, either the shadow of its outlines or of stones within it. But it is admitted that not more than half the cases show such peculiarities in the films even when they really exist in the body; and, unfortunately, at times they show in the films when they do not exist in the body, as proved later at operation. The margin of error is, therefore, a large one, and neither positive nor negative reports are so reliable that they must be accepted if they conflict with the data obtained by other methods.

2. Indirect evidence means the demonstration given of effects produced on surrounding tissues by gallbladder disease, such as flattening or deformity of the duodenal cap, reverse peristalsis in the duodenum, displacement of the stomach to the right, or a high fixed position of the hepatic flexure of the colon. All of these signs are produced by pericholecystitis with resultant adhesions between the gallbladder and adjacent organs. But pericholecystitis does not always occur as a complication of chronic cholecystitis, and, therefore, none of these results may follow. Their absence is not conclusive evidence against gallbladder disease, just as their presence may be the result of localized peritonitis originating from disease in the pylorus, duodenum or colon, rather than in the gallbladder.

3. Eliminative evidence means the proof given of normal stomach contour and motility, showing that the digestive symptoms are not due to organic disease of that viscus; of no defects in the duodenum such as are ordinarily found in chronic ulcer; of no cecal or appendix stasis or other evidences of a chronic appendicitis; and of no break in the continuity of the ascending or the transverse colon. These negative findings are of great value, even though no positive signs of gallbladder disease are demonstrated.

INTERPRETATION OF DATA

Such are the various methods by which evidence is collected regarding gallbladder disease, but there remains the task of weighing the significance of the facts thus obtained, in the light of the various abnormal conditions that may have produced them. Many questions arise for answer before proper interpretation can be made of these data. These questions concern:

1. *The Biliary Tract.*—(*a*) Is it possible to recognize chronic cholecystitis in its early stages before stones have formed? It seems probable that these cases are the ones corresponding in history to Groups 3 and 4, with negative physical findings except occasionally after an attack of discomfort in the right side; with achylia or definite hyposecretion; and with none but indirect or eliminative evidence obtained by fluoroscopy and roentgenography. It is just here, in these early stages, that Lyon's plan of gallbladder drainage promises to be of service, by the information it gives about the cytology, bacteriology and chemistry of the bile; and it should make possible the recognition of gallbladder disease before it has reached the late stage of cholelithiasis, with contraction and thickening of the gallbladder walls.

(*b*) How can cancer of the ducts be identified? This condition, no matter whether it originates above or below the junction of the cystic duct with the hepatic duct, sooner or later obstructs the common duct and thus produces jaundice. Usually, it gives rise to a series of attacks of pain closely resembling those of gallstone colic, with good health between attacks; but ultimately jaundice appears and persists. Physical examination reveals a slightly enlarged liver, because of obstruction to bile discharge. An enlarged gallbladder may or may not be found. If the opening between the hepatic and the cystic ducts remains patulous while the common duct is occluded, the gallbladder usually becomes enlarged from overdistention; but if the hepatic duct is blocked above or at the junction with the cystic duct, so that no bile can enter the gallbladder, no enlargement may occur. Gastric achylia is the rule in these cases. No bile can be obtained for examination, because none is poured into the duodenum. Roentgen-ray reports are negative, if they are correct. Inference usually suggests the diagnosis, but exploratory operation is required to prove it; and usually that is its main virtue.

(*c*) When jaundice is obviously present, what proof is there that it is due to catarrh of the ducts? This so-called catarrhal jaundice should be looked on as part of a gastroduodenitis. Its history does not include severe pain, but constant indigestion, with anorexia, nausea and vomiting preceding jaundice. In this condition, the Lyon procedure is of special value, not only in diagnosis, but also in treatment, in the information it affords as to the character of the material obtained from the fasting duodenum and from the biliary tract, and in the relief given by drainage and by duodenal lavage. By fractional gastric analysis, by examination of the duodenal contents and by biliary drainage a positive diagnosis can be made of angiocholitis, even when the history is indefinite and all other methods fail to give reliable information.

2. *The Liver.*—This must be remembered as an important source of symptoms of gallbladder disease, resembling those met in Groups 3 and 4.

(*a*) Cirrhosis of the liver produces a chronic disturbance of the stomach, with or without a sensation of dull pain at the right costal margin; and over long periods of time these may be the only manifestations of chronic portal cirrhosis. Physical examination in the early stages reveals an enlarged and tender liver; gastric analysis gives a material characteristic of chronic gastritis, with achylia or hyposecretion, but also with excess of mucus, and often with blood, pus and micro-organisms in the fasting contents; there are no peculiar features in duodenal contents or in the bile itself to identify the disease, and roentgenograms show no abnormality.

(*b*) Chronic passive congestion of the liver, secondary to a faulty heart muscle, may closely imitate the chronic dyspeptic symptoms, with hepatic enlargement and tenderness, that characterize hypertrophic cirrhosis; but the signs of a weakened myocardium and poor circulation make it impossible to overlook the underlying cause.

(*c*) Syphilis of the liver, as already mentioned, may simulate the history given by any one of the four groups of gallbladder disease, and the only way to eliminate it is by the Wassermann reaction.

(*d*) Cancer of the liver, except as a metastasis, is unusual. Primary cancer of the liver causes digestive disturbances with pain in the liver region, but it causes also a definite enlargement of this organ, either smooth or nodular, too striking to be accounted for by gallbladder disease alone.

3. *Diseases of the Stomach.*—These constitute so large a chapter that they cannot be considered here except in a general way. Any of the forms of intragastric disease, such as gastritis, ulcer or cancer, produce digestive symptoms closely resembling those of which complaint is made in gallbladder disease. But each one of them shows on gastric analysis not only disturbances of secretion, but also the presence in the fasting contents of abnormal constituents, such as mucus, pus, blood, micro-organisms or retained food, which are not present in the reflex disturbances of secretion caused by extragastric disease. Furthermore, the fluoroscope and roentgenograms reveal defects in the stomach wall, when ulcer or cancer causes the symptoms, while they eliminate these conditions from consideration if no such defects are demonstrated. In gallbladder disease, on the other hand, the clean stomach, no matter what its secretion is, the peculiarities found in the duodenal contents in fasting, and the discovery after biliary tract drainage of material, such as never comes from the normal gallbladder and ducts, help to decide where the pathologic condition lies.

4. *Chronic Appendicitis.*—This, as well as chronic cholecystitis, is characterized by recurring attacks of abdominal pain, with or without persistent dyspepsia in the intervals between attacks. Appendicitis may thus give a history corresponding more or less closely to any one of the four groups described. Usually, however, the location of the pain is distinctly different; in the right lower rather than the right upper quadrant, with all the physical signs likewise found lower down. It is possible, however, for an inflamed retrocecal appendix, with its tip pointing upward along the ascending colon, to produce pain referred to the right costal margin; and for an inflamed gallbladder to give rise to pain referred downward toward the usual site of the appendix, so that confusion is bound to occur about the diagnosis, if the history and the physical examination constitute the only guides. Gastric analysis does not aid much in differentiation, for while it demonstrates that the stomach disturbance is due to some extragastric condition, it does not identify that condition. Examination of the duodenal contents and material obtained by drainage of the biliary tract may be sufficient to settle the question of gallbladder disease, no matter what other methods show. The roentgenray examination also adds data of great value when considered in connection with all the other symptoms and signs. But, after all, it is not uncommon to find coincident disease of the appendix and the gallbladder, so that the evidence is mixed, and exploratory operation then becomes the court of last resort.

5. *Disease of the Right Kidney.*—This frequently causes acute attacks of pain in the right upper abdominal quadrant; such conditions, for instance, as renal calculus, pyelitis, whether septic or tuberculous, and recurring hydronephrosis due to a kink in the ureter as a result of prolapse of the kidney, the so-called Dietl's crises. In all these attacks, the history is usually one of pain referred downward toward bladder and genitalia, rather than around the right costal margin and under the right shoulder blade; with frequent and painful urination while the attack persists. Localization of the real site of the pathologic condition is made by cystoscopy, ureteral catheterization, pyelograms and roentgenograms. By these means, it is possible to identify disease in the kidney; and by other means, previously described, to eliminate disease of the gallbladder, no matter how lacking the history of an attack may be in features that distinguish one condition from the other.

There remain for consideration two groups of diseases in which the pathologic condition is entirely outside the abdominal cavity, but in which the symptoms are manifested in such a way and are of such a character that they simulate gallbladder disease. These groups comprise certain affections of the nervous system and of the thoracic organs.

6. *Disease of the Nervous System.*—Under this heading must be remembered: (*a*) The gastric crises of tabes. These are characterized by violent pain in the upper abdomen, with coincident vomiting and prostration, so that the attacks may closely resemble biliary colic. Usually, the paroxysms begin suddenly and last a variable time, from hours to days; and between them the patient enjoys good health. But physical examination of the abdomen is negative; examination of the eyes, the knees, the ankles or the soles will reveal disturbance of reflexes; roentgenograms of the gastrointestinal tract are negative; and the only laboratory investigation that is conclusive is that of the spinal

fluid, which shows an increased cell count and a positive Wassermann reaction. By disturbed reflexes, therefore, and by abnormalities in the spinal fluid, it is possible to recognize the gastric crises of tabes; and yet no other cause of acute abdominal attacks probably goes so often undetected.

(*b*) Lead colic. This condition belongs in this group because it is due to stimulation by lead of the motor nerves in the intestinal wall, causing violent spasm and contraction. The pain thus produced is felt about the umbilicus, but often radiates from there into the right hypochondrium or right hypogastrium, suggesting biliary or renal colic or appendicitis. It is severe but seldom lasts long, and may be repeated frequently, but without disturbance of digestion between attacks except for obstinate constipation. The discovery of anemia, of basophilic degeneration of the red cells, of a blue line on the gums, of other disturbances of the nervous system such as tremor, palsies and impaired sight, with a history of some occupation in which the patient is constantly subjected to poisoning by lead, suffice to make the diagnosis clear, if only one is alert to the possibility.

(*c*) Intercostal neuritis. Sudden onset of severe pain referred to the abdomen over the right hypochondrium, with tenderness there, may persist for hours or a day or two before a typical eruption along the course of an intercostal nerve calls attention to the diagnosis of herpes zoster. Careful examination, meantime, of the abdomen, with no signs of gallbladder disease, and of the back, with demonstration of a tender point at the nerve exit from the spine, and of others between the ribs along its course, should give a clue as to the meaning of the pain; but it is sometimes difficult to remember the unusual possibility and not to fix the attention rather on the stronger probability that disease of the gallbladder is responsible for the symptoms.

Less sudden and severe but no less suggestive is an ordinary intercostal neuralgia on the right side, with pain more or less constantly referred to the right upper abdominal quadrant. All the methods of examination described for gallbladder disease give negative results, while tender points along the nerve trunk, in the back, axillary line and abdominal wall serve to identify the real source of the pain. This is a common ailment, but more than once it has been overlooked in differential diagnosis, because it seemed too simple an explanation.

7. *Disease of the Thoracic Organs.*—Attention has been called many times, by different observers, to the fact that lobar pneumonia may produce pain referred to the abdomen, with rigidity and tenderness of the abdominal wall, suggesting acute cholecystitis or appendicitis or peritonitis; also diaphragmatic pleurisy from any cause may manifest itself by pain felt below the diaphragm and apparently due to disease of some abdominal organ, a fact to which many observers have called attention. But the thoracic condition most often simulating gallbladder disease is angina pectoris. Sometimes the pain in this affection is referred to the epigastrium and right hypochondrium and felt there with greatest intensity. The usual substernal distress may or may not form a part of the paroxysm. The history of onset following exertion or violent emotion is characteristic of angina and not of biliary colic; but this history is not always elicited. The expected signs of heart disease or of general arteriosclerosis may not be found. Physical examination of the heart may reveal little abnormality in rate, rhythm or sounds, and blood pressure may be normal, even though coronary artery disease exists. Roentgenograms of the heart and electrocardiograms may likewise reveal no evidence of disease sufficient to explain the attacks of pain. But laboratory examinations of the gastric and duodenal contents and of material obtained by biliary drainage may give evidence of such character as to prove the existence of gallbladder disease and so solve the problem. The matter of first importance is to remember that one condition may resemble the other so closely as to be mistaken for it; for operation on the gallbladder is not suitable treatment for angina, while on the other hand a bad prognosis of sudden death from coronary artery sclerosis may be made unjustly when removal of gallstones would effect a cure.

CONCLUSION

Many pitfalls to trap the unwary lurk in the path of the diagnostician; and he must be familiar with all the possible snares if he is to win through safely to his goal. The best guide to take on the way is the old maxim, "Eternal vigilance is the price of success."

Shreve Building.

A HISTOPATHOLOGIC STUDY OF POSITIVE CUTANEOUS TESTS

PRELIMINARY STUDY

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This study has for its purpose the determination of the actual pathology of (1) a positive tuberculin (Pirquet) test; (2) a positive food test done by the endermic method, and (3) a positive luetin test. The true anaphylactic skin reaction is a specific anaphylactogen. As a result, there is formed within or on the cells a diffusible irritant, or there may occur cellular shock, which is capable of producing acute hyperemia, edema and leukocytic infiltration.

In 1903, Arthus, at the instigation of Richet, demonstrated, by injecting rabbits with normal horse serum at definite intervals, that the first two or three doses were absorbed, but that when subsequent injections were given subcutaneously, this led to increasingly severe local reactions. This is known as the Arthus phenomenon, and forms the scientific basis of cutaneous tests. On the one hand, the urgency of laboratory tests as aids in the diagnosis of disease conditions and, on the other hand, the necessity of making these tests so uncomplicated that they do not require very special training and also so simple that they make any special apparatus unnecessary, have made more than welcome the advent of cutaneous tests. While the specificity of the tuberculin (Pirquet) test has been definitely established, and, subject to certain conditions, some reliability is placed on the luetin test, yet the endermic food tests are still, in the estimation of some, *sub judice*. For this reason it seemed that a comparative histologic study might go a great way to prove or disprove the reliability of the endermic food tests as a diagnostic aid.

THE CUTANEOUS TUBERCULIN TEST (PIRQUET)

For the study of the histologic picture of this cutaneous reaction, two well marked reactions were selected.

Case 1.—This tuberculin (Pirquet) reaction showed itself, twenty-four hours after the test had been performed, as a swollen red lesion about the size of a quarter. Within the next twenty-four hours, the lesion was still red, about the size of a quarter, and studded with minute vesicles. The vesiculation persisted for two days more, and the redness remained for three days before subsiding. At the height of the reaction, two days after the test had been done and the first day after the appearance of the vesicles, a biopsy of the lesion was made. Just beneath the epithelium were diffusely scattered leukocytes, mostly mononuclears. Deeper in the connective tissue were focal collections of these cells. In the central portion of this section in the superficial layers of the connective tissue, there was noticed hemorrhage, and the smaller capillaries of this area were injected.

Case 2.—In this positive tuberculin (Pirquet) reaction, within twenty-four hours after the performance of the test, marked redness and swelling about the size of a quarter resulted, which persisted for two days, followed by the development of a pustule, which gradually disappeared. A biopsy, forty-eight hours after the performance of the test, revealed marked inflammatory reaction. The superficial connective tissue contained focal collections of leukocytes, mononuclears predominating. The blood vessels were injected, a few of the smaller capillaries were thrombosed, and occasional perivascular collections of the leukocytes were seen. The deeper connective tissue layers contained many large collections of leukocytes, and rather diffuse infiltration had occurred, with marked edema and a few hemorrhages. In the deeper layers between the connective tissue and fat was a large collection of polymorphonuclear leukocytes, with considerable hemorrhage. Many of the leukocytes had lost their sharp staining qualities, and in some the cell outline was indefinite and the nucleus obscure, indicating necrosis.

ENDERMIC FOOD TESTS

These food tests were performed by the endermic method, and the products were all prepared by myself, the method having been discussed in another contribution.[1] The dose employed in these tests was 0.1 c.c. A control was used in all tests. These reactions were read forty-eight hours after the performance of the tests. For this histologic study we selected three different reactions.

Case 3.—A patient with acne vulgaris of the face presented a positive reaction to veal, which showed itself as a marked papule with surrounding erythema. We called this reaction ++ (moderately positive). After reading the test, we removed the papule for histologic study. The superficial connective tissue layers were congested and edematous, and contained focal collections of mononuclear cells. In the deeper layers were large collections of polymorphonuclear cells, and this was especially marked between the fatty tissue and the deeper connective tissue layers. In the depths of the connective tissue was a large capillary showing an intense perivascular reaction, denoted by accumulation of polymorphonuclear cells and erythrocytes, and the vessel itself showed thrombosis. In the thrombus could be distinguished a few polymorphonuclear leukocytes.

Case 4.—A patient with sycosis vulgaris of the upper lip presented a positive endermic food reaction to beans, which was ++ (moderately positive), and showed a distinct papule with surrounding erythema. This lesion was removed for histologic study. The section showed a very shallow area of ulceration affecting only the superficial cells of the corium. In the connective tissue just beneath were the focal collections of mononuclear leukocytes. In this section, however, there was noted an absence of the polymorphonuclear infiltration in the deepest layers of the connective tissue.

Case 5.—A patient with cellulitis of the hands presented a + (weak) reaction to rice, which showed itself as a papule with slight erythema. This lesion was removed for histologic study. The report showed practically the same picture as in Case 4, excepting that the mononuclear infiltration was more diffuse, and here also the absence of polymorphonuclear infiltration in the deepest tissue was noted.

THE LUETIN TEST

For the histologic study of this reaction we selected two patients, both of whom showed only weakly positive luetin tests. Both of these reactions presented a papule with slight erythema, the papule being slightly larger than a pea. Both were removed for histologic study. The report, which was identical in the two instances, showed a marked inflammatory reaction especially in the deepest layers, intense injection of the blood vessels, considerable edema, and large collections of polymorphonuclear leukocytes, with necrosis of the tissues and hemorrhage.

COMMENT

A study of the histologic picture of the tuberculin (Pirquet) test and of the endermic food test discloses many similarities. (*a*) In both is seen a mononuclear cell infiltration in the superficial connective tissue (*b*) In both the tuberculin and endermic food tests in which the cutaneous reaction is marked, there is also polymorphonuclear cell infiltration in the deeper connective tissue. This polymorphonuclear infiltration is, however, absent in the weak reactions of the endermic food tests. In the luetin tests, however, there was an entirely different picture. Although the reactions were weak, still, in the deep layers of the connective tissue there was marked inflammatory reaction and necrosis, and an entire absence of mononuclear infiltration in the superficial connective tissue.

It is important to review in brief the methods used in the preparation of the tuberculin, the food substances and the luetin employed, and to see whether we can find an explanation for the different histologic pictures noted.

For the tuberculin (Pirquet) reaction, old tuberculin was employed, which is prepared by growing the tubercle bacillus on slightly alkaline 5 per cent. glycerin peptone bouillon from six to eight weeks. The entire culture is then heated on a water bath at about 80 C. until reduced to about one tenth of the original volume. It is then filtered through either sterile filter paper or porcelain filters. The resulting filtrate is a rich, brown, syrupy fluid containing the elements of the original culture medium and 50 per cent. glycerin extract of the tubercle bacillus.

The chief toxic principles of the tubercle bacillus are probably endotoxins or bacterial proteins bound during cell life to the body of the bacillus. It is also likely that the tubercle bacillus actually secretes a soluble toxin. A careful chemical analysis of the tubercle bacillus discloses that about 85.9 per cent. of the bacillus consists of water, and from 20 to 26 per cent. of the residue can be extracted with either ether or alcohol. This material consists of fatty acids and waxy substances. The residue after alcohol-ether extraction is composed chiefly of proteins. These can be extracted with dilute alkaline solutions, and consist chiefly of nucleo-albumins. After these extractions, the remainder contains cellulose and an ash rich in calcium and magnesium. Since tuberculin is an aqueous solution, it must therefore largely contain the protein material of the tubercle bacillus.

The food products employed in making the endermic tests are prepared by finely dividing the substances used and extracting them with alkalized sodium chlorid containing 0.1 per cent. of tricresol. After a few days this is filtered through filter paper and the filtrate treated with absolute alcohol. This, in turn, is dried, and a certain amount of the residue is then dissolved in sterile, distilled water. Every product made was subjected to a nitrogen determination, and in every instance this revealed that the protein material had been extracted and was present in the residue utilized in making the solutions employed in these tests. It is, therefore, conclusive that the sterile aqueous solution used for the endermic food tests contained protein material.

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[1] Strickler, Albert, and Goldberg, J. M.: Anaphylactic Food Reactions in Dermatology, J. A. M. A. **66**: 249 (Jan. 22) 1916.

The luetin employed was prepared by cultivating the spirochetes in either ascitic fluid agar or ascitic fluid, each containing a piece of sterile placenta. The spirochetes were allowed to grow six, twelve, twenty-four and fifty days at 37 C. under anaerobic conditions. The growth of the spirochetes in the solid mediums was cut out and ground in a sterile mortar. The resulting thick paste was thinned down by adding little by little the fluid culture, which was also rich in spirochetes. This growth was heated for one hour at 60 C. and, on dark field study, from forty to 100 dead spirochetes could be seen in each field. Luetin, therefore, represents an emulsion of *Spirochaeta pallida* mixed with a certain amount of culture medium. While clinically the lesions of the luetin reactions removed for histologic study were papular and represented weak reactions, still, the histologic picture showed in both instances, first, the absence of any mononuclear cell infiltration in the superficial connective tissue, and, secondly, an intense inflammatory reaction in the deeper connective tissue with congestion, polymorphonuclear infiltration and necrosis.

Just why positive luetin reactions, particularly as these reactions were mild, should show such marked reactive changes is problematical. Just why the luetin histologic picture should differ from the tuberculin and from the endermic food test picture is a matter of conjecture. Whether these differences are due to the fact that *Spirochaeta pallida* is cultivated anaerobically, whether this is due to a difference in the culture medium which formed an integral part of both the luetin and the tuberculin utilized in making the respective tests, whether it may be due to a difference in the chemistry of *Spirochaeta pallida* and the tubercle bacillus, or whether all or any one of these facts may be concerned, must await further investigation.

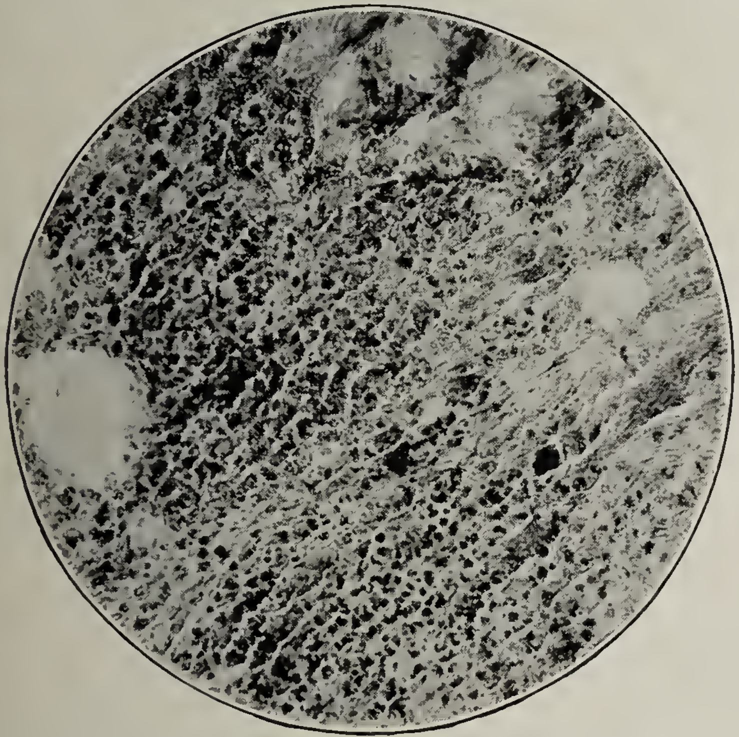

Fig. 1.—Biopsy of a weakly positive luetin reaction: section of the deepest layers of the skin, showing intense inflammatory reaction, as noted by large number of polymorphonuclear leukocytes.

CONCLUSIONS

1. As a result of this study, it appears very suggestive that the reactions obtained by doing the food tests, using the endermic method, represent a specific reaction and therefore a reaction which cannot be classified as either fictitious or traumatic.

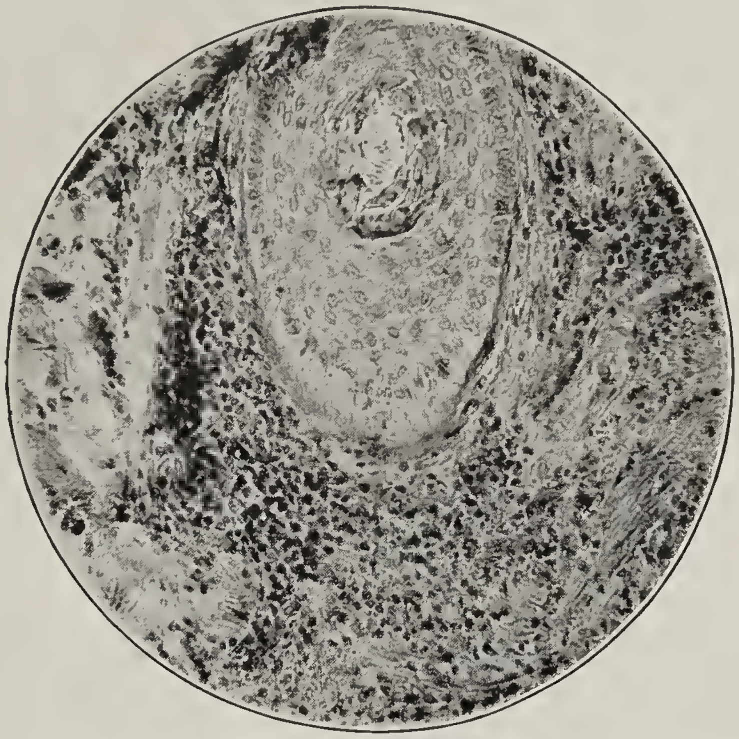

Fig. 2.—Biopsy of a positive food test done by the endermic method: section of the deeper layers of the skin, showing mononuclear cellular collection.

2. The investigation we have followed seems to point to the explanation that protein substances, whether derived from bacteria or food products, when used in the performance of the skin tests, either by the scratch or by the endermic method, show within certain bounds an identical histologic picture.

3. This histologic picture seems to be characterized by the predominance of mononuclear cell infiltration in the superficial connective tissue. As a rule, only in the more marked reactions do we obtain polymorphonuclear cell infiltration in the deeper connective tissue.

4. In the luetin test, the histologic picture, even in the weak reaction, shows evidence of marked changes in the deeper connective tissue layers of the skin. This reaction is characterized by polymorphonuclear infiltration, congestion of blood vessels and necrosis.

5. While several hypotheses are advanced to explain the histologic difference between the tuberculin and food tests, on the one hand, and the luetin tests on the other, no definite conclusion can be reached until further study is made.

327 South Sixteenth Street.

History of Meningitis.—The first clearly recognized epidemic of cerebrospinal meningitis occurred in Geneva, Switzerland, in the spring of 1805, followed during the years of 1806 to 1814 by a number of scattered outbreaks in widely separated localities of France and Germany. Coincident with this first series of epidemics in Europe occurred a similar series in America, beginning with an outbreak at Medfield, Mass., in 1806, and continuing until 1819, visiting during this period many localities in the United States and reaching Canada. Since that time periods of epidemic or pandemic prevalence have alternated with periods of comparative rarity. From 1836 to 1850 epidemics appeared in Europe, in France, Germany, Austria, Italy, Spain, Ireland and Denmark and in Algeria.

ANATOMY OF GONORRHEA IN THE MALE

PRINCIPLES OF TREATMENT

WILLIAM T. BELFIELD, M.D.
CHICAGO

The evolution of the penis in vertebrates presents progressive types which, because they illumine human pathology, will be briefly recalled.

The primitive penis, found in reptiles and early mammals, is an oblong mass of fibrous tissue marked by a gutter or canal on its surface, into which the vasa deferentia empty; it is an exclusively genital organ, transmitting semen only, the urine still flowing into the cloaca as in fishes. It lies in the cloaca, but can be protruded through the anus into the cloaca of the female (Fig. 1; Fig. 6 *A*). A second type differs from this in that it lies entirely outside the cloaca, from which it is separated by a perineum; moreover, urine as well as semen is discharged through the canal. This type, normal in early mammals, is known in man as epispadias (Fig. 2); the tube or gutter on the upper surface, miscalled urethra, is the seminal duct. In some men with epispadias this duct transmits urine also, as in the opossum (Fig. 6 *B*); in others semen only, the urine still flowing into the cloaca, as in the duckbill.

In a third type the penis, hitherto comprising only the corpora cavernosa, is reinforced by an entirely new structure, the corpus spongiosum, traversed by a new urinary channel, the urethra. This penis carries two independent canals: an exclusively seminal duct on the upper and an exclusively urinary channel on the lower surface of the corpora cavernosa, with no communication betwen the two (Fig. 3). Many human examples of this type have been reported under the misnomer "double urethra," or "penile fistula." In most cases the upper, seminal canal is incomplete; it begins near the deep urethra, but ends as in epispadias, on the upper surface of the corpora cavernosa behind the corona glandis (Fig. 6 *C*). Of twelve men so constructed who contracted gonorrhea, including one personal case, the seminal (upper) duct was infected in all, but the urethra in only six—an experience that seems to prove beyond reasonable doubt that some urethras may be completely immune to the gonococcus. From this we may infer that urethras in general possess a high, though variable degree of immunity to this parasite, as clinical observation also indicates.

A fourth type differs from the last mentioned in that the penile portion of the seminal duct is obliterated; the vasa deferentia and the seminal, prostatic and Cowper's ducts empty into a cavity underlying and opening into the posterior urethra (Fig. 4; Fig. 6 *D*). Though called "foramen cecum," this cavity is apparently the utricle.

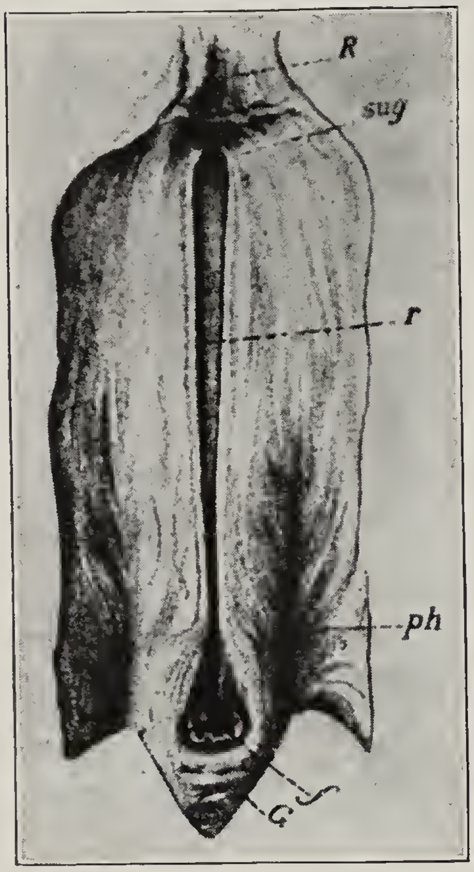

Fig. 1.—Reptilian type, cloaca opened; *ph*, penis; *r*, seminal gutter on its surface; *R*, rectum (from Gegenbauer). Compare Figure 6 *A*.

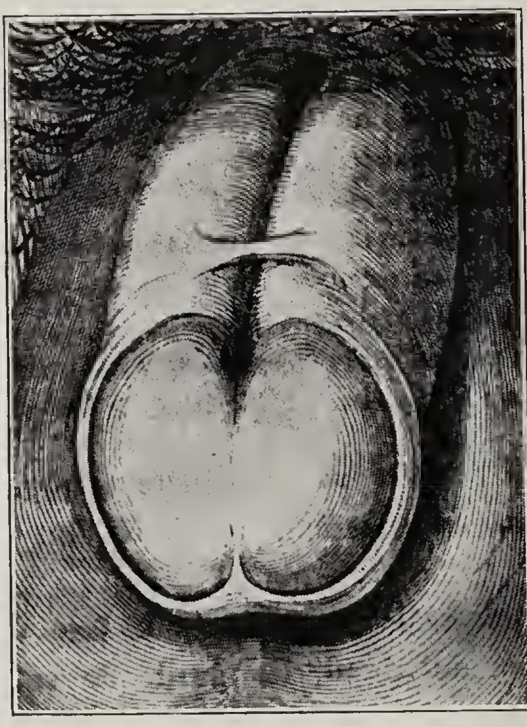

Fig. 2.—Human epispadias: Seminal gutter, miscalled urethra, on upper surface of corpora cavernosa, as in reptiles and early mammals; no urethra (from Demarquay). Compare Figure 6 *B*.

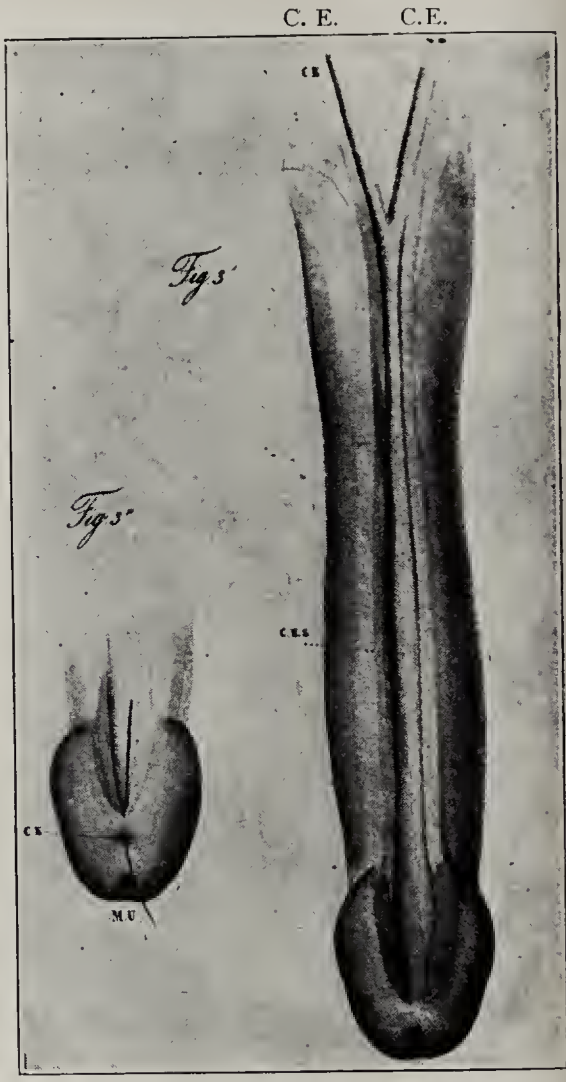

Fig. 3.—Human type, miscalled "double urethra"; *M. U.*, meatus of normal urethra; *C. E.*, orifice of *C. E. S.*, independent seminal duct on upper surface of corpora cavernosa, laid open from above; this bifurcates posteriorly into the vasa deferentia *C. E.* (from Cruveilhier). Compare Figure 6 *C*.

From this sketch certain structural features of the human urethra may be emphasized: first, it is an offshoot of the cloacal part of the bladder, which in its heavy armor of epithelial cells it resembles; second, after it becomes a seminal as well as a urinary outlet, its walls acquire certain structures that were developed as accessories to the seminal canal, notably the prostatic and Cowper's glands; Littré's glands, which honeycomb the tissues around the anterior part of the urethra; and from ten to twenty lacunae, pockets from one-fourth to three-fourths inch deep, which run parallel to the canal. Few writers mention the notable fact that, while the lacunae in the anterior half of the penile urethra open toward the meatus, those in the posterior half open toward the bladder (Fig. 7). It is difficult to imagine that these lacunae, especially those opening backward, when filled with pus, can be medicated by irrigation of the urethra; infected Littré glands also seem inaccessible.

In the readjustment of parts, the seminal duct develops in man a unique feature, the seminal vesicle. This differs from the structures so-called in most animals in that it is an offshoot from, and terminal reservoir of, the vas deferens; the latter discharges into the vesicle as the ureter discharges into the bladder. That the vesicle is a reservoir as well as a gland is indicated by the valvelike inlet of the vas, preventing regurgitation (Fig. 5); and by the muscular sphincter surrounding the outlet; and this relation has been demonstrated in numerous roentgenograms of the vesicles injected from the vasa in living subjects (Fig. 8). Important clinically is the vesicular lining, a derivative of the vas deferens; for in contrast to the urethral, it consists of only one or two layers of columnar cells, and is devoid of glands, lacunae or other inaccessible pockets; unlike the urethra, its entire lining can be medicated by fluids filling its cavity (Fig. 6 *E*).

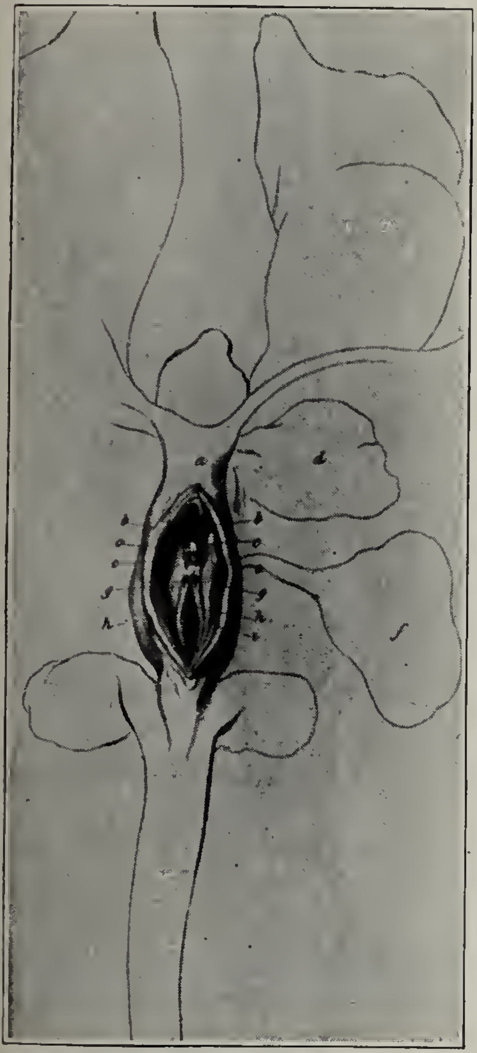

Fig. 4.—Mammalian type, posterior aspect: *s. v.*, right seminal vesicle; *d*, right prostate gland; *f*, right Cowper's gland; *u*, urethra—these in outline only. Between *a* and *u*, foramen cecum, posterior wall laid open; into its cavity open four pairs of ducts: *b b*, vasa deferentia; *c c*, seminal vesicles; e e, prostates; *g g*, Cowper's glands; *i*, opening of foramen cecum into urethra (from Owen). Compare Figure 6 *D*.

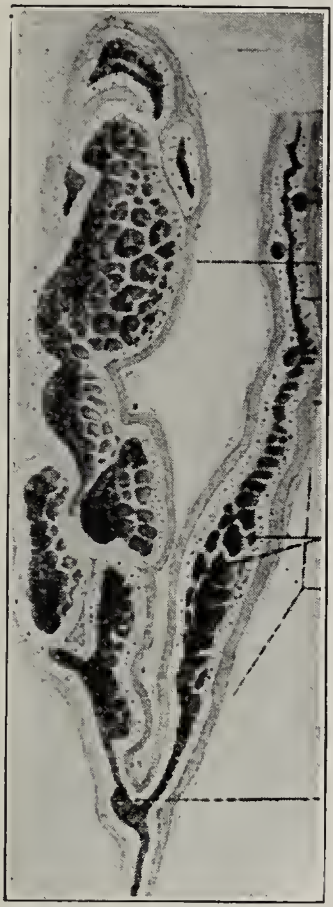

Fig. 5.—Usual human type: vas deferens opening into seminal vesicle, and this on wall or lip of utricle (from Eberth). Compare Figure 6 *E*.

Two methods are known by which human tissues defend themselves against bacterial invasion: In the first, the antimicrobic, the invaders are destroyed by the tissues invaded; this defense usually includes suppuration, and when successful eliminates the invaders. In the second method of defense, the antitoxic, the tissues of the body are mobilized to destroy not the invading bacteria but their toxins, as in diphtheria. Success through this immunizing defense does not necessarily include the destruction of the invaders; diphtheria bacilli may live in the throat, typhoid bacilli in the gallbladder, and gonococci in the seminal vesicles, long after symptomatic recovery.

When invaded by the gonococcus, the urethra exhibits the first, the seminal duct the second method of defense also. In the penile urethra there is profuse suppuration with the elimination of myriads of gonococci; but seldom is there found in the blood a positive complement fixation; in other words, there is no toxemia, no antitoxin formation. Yet within a few weeks the gonococci have nearly or altogether disappeared from the general surface, local colonies perhaps persisting in lacunae, glands or strictured areas, as detected through the urethroscope.[1]

In marked contrast is the picture when this parasite invades the seminal vesicles; for complement fixation appears promptly, showing antitoxin formation; and certain foreign proteins, useless against urethral gonorrhea, may assist the antitoxic defense. But it must be remembered that success in this immunizing effort, though producing a symptomatic near-cure, may not destroy the gonococci in the vesicles as examination of the emitted semen proves. The patient may long remain, even without a purulent discharge, a gonococcus carrier, subject to mild arthritis (perhaps ascribed to teeth or tonsils), recurrent epididymitis, or transient cloudbursts of pus from the meatus after indulgence with wine and women, or after constipation.

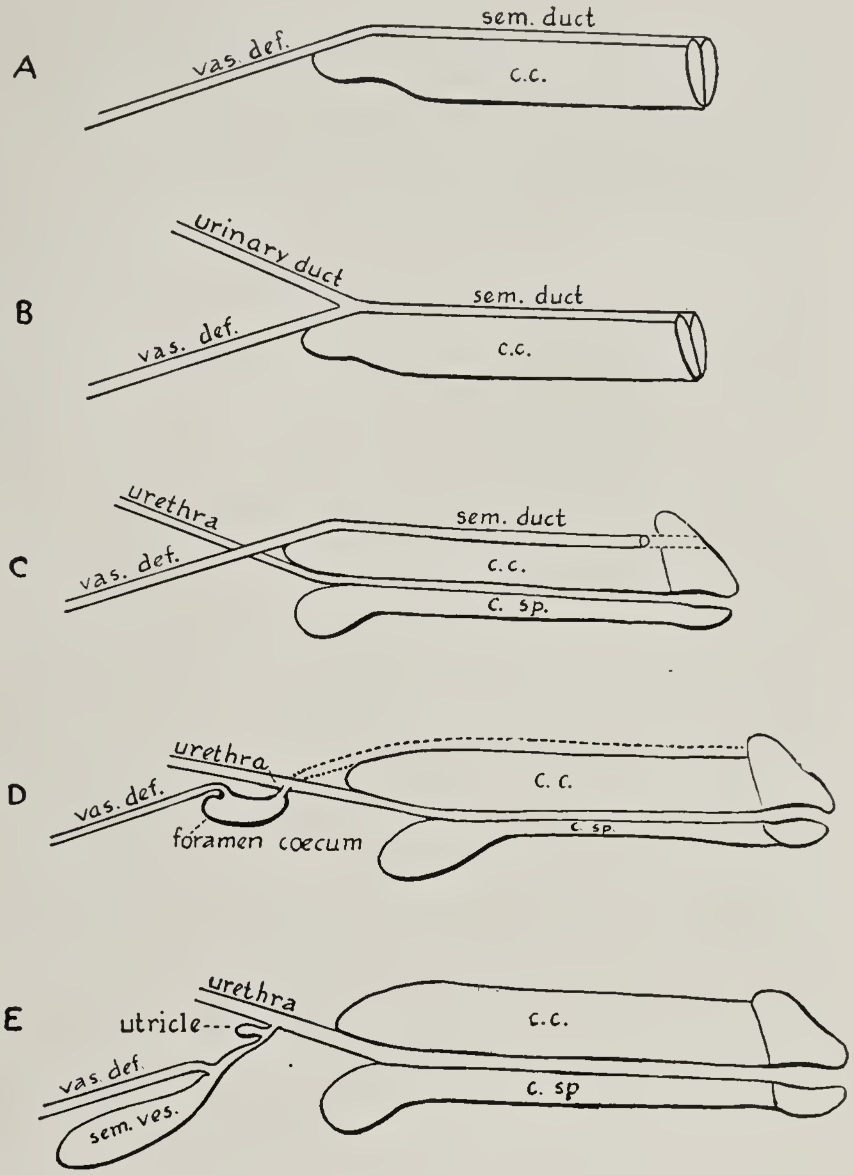

Fig. 6.—Diagrammatic outline of types in evolution of the penis, portrayed in Figures 1 to 5.

The futility of antitoxin defense against gonococci in the vesicles is clearly shown in acute gonorrheal epididymitis; here immunization is so rapid as to neutralize the toxins in the epididymis within a week or two; the antitoxin effect on the infection in the vesicles is shown by the decrease of urethral discharge at the height of the epididymal swelling. Yet, as this swelling subsides, pus and gonococci usually reappear at the meatus as before. As yet I have seen only the same failure to cure the vesicular infection by auto-immunization, i. e., by the injection into the patient of fluid withdrawn from his own infected tunica vaginalis (six cases).

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[1] Gonococcus infection of the conjunctiva likewise seldom becomes a chronic disease.

PRINCIPLES OF TREATMENT

On these premises, the principles determining the treatment of acute gonorrhea may be thus outlined: In the days that elapse between the inoculation and its discovery, gonococci have penetrated the stratified epithelium, inaccessible lacunae, and glands beyond the reach of local medication. Yet such medication has distinct value through its effect on the general surface; this has often been proved, recently by a group of British soldiers in France, half of whom received standard local treatment, the other half none. It is also proved daily by the poor results of treatment in which the injections are made with a ⅛ ounce syringe; for this is virtually no treatment, since the anterior urethra alone holds about one-half ounce.

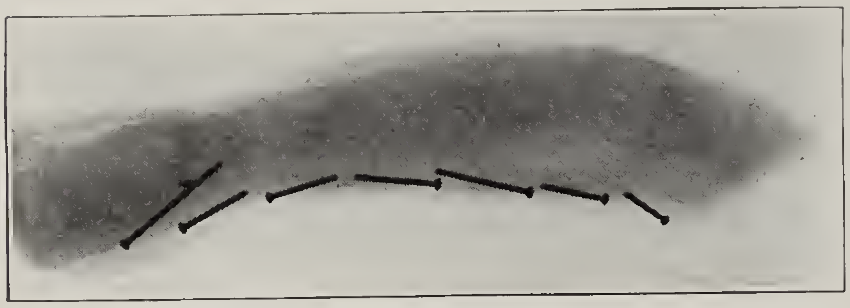

Fig. 7.—Pin fragments in a few of many lacunae in roof of human urethra: Mouths of lacunae, indicated by pin-heads, open toward meatus in anterior, and toward bladder in posterior part of penile urethra.

Yet the brunt of the defense falls on the urethra itself; on the resistance of its tissues depends chiefly the extent of the invasion. Fortunately, these tissues are favored in two essentials: a high degree of natural immunity to gonococcal toxins, and frequent flushings by the urine. Nevertheless, the infection reaches the prostatic urethra in most cases—variously estimated at 70 to 80 per cent.; the seminal vesicles in a somewhat smaller percentage, the epididymis is about 10 per cent.

When gonococci invade the vesicles—i. e., in a majority of cases—the entire picture is reversed, since every factor is unfavorable for local defense; the lining consists of one or two layers of cells, a contrast to the heavy armor of the urethra; there is no flushing with urine, no drainage; the vesicle is a closed sac, its contents removed only through its own contractions, which even in health expel only a fraction thereof; closure of the front door, the ejaculatory duct, by a pus clot or by swelling, converts the vesicle into a stagnant pool, a culture tube, until its contractions force pus out of the back door into the vas and epididymis. On the other hand, the vesicle, unlike the urethra, is admirably adapted for efficient local medication.

Yet, until recently it has not received such medication during the acute stage, because as a profession we have not yet outgrown the ancient conception that gonorrhea is only "specific urethritis"; that, so long as pus issues from the meatus, it must originate in the urethra. During the current century it has been comprehended that extension of the acute infection to the vesicles is frequent; yet even today the prevalent treatment of acute vesiculitis is merely "watchful waiting." If epididymitis occurs, we incise the epididymis, but leave the vesicular infection undisturbed—i. e. we mop up the floor but neglect to turn off the faucet; if arthritis appears, we inject a vaccine, serum, or fluid aspirated from the infected joint (often with great benefit to the joint), but leave the primary focus in the vesicle untreated. Finally, after months or years of urethral treatment have failed to abolish the morning drop and other familiar results of chronic vesicular infection, we sometimes inject the vesicles by way of the vasa. Even at this late date a large percentage of cures is thus obtained; the general experience accords with that of Cumming and Glenn,[2] who treated by vas puncture fifty-five cases of chronic vesiculitis including four with arthritis: "Vas puncture offers an effectual method for eradication of foci of infection in the seminal vesicles." It "may be described to a patient as the best means available for cure of the condition for which it is indicated; while not a positive cure, it does improve every case, and in a majority leaves nothing to be desired." Wolbarst[3] says: "In the hands of many urologists, including myself, vasotomy and its modifications have given most satisfactory results. In my experience, covering between fifty and sixty cases, this operation has proved of inestimable value, and I am convinced that it is the ideal method of treatment for the average case."

Yet in treating chronic vesiculitis we contend not merely with existing bacteria but also with the damage already wrought within the vesicles, and with masses of semisolid fibrinous exudate. It would seem more promising to inject the vesicles in the acute stage, while the contents are liquid, and before extension to the epididymis or invasion of the blood current has occurred.

During the last nine years I have injected the acutely infected vesicles through vas puncture in eighty-three cases between eight and forty days after the appearance of the discharge, continuing the usual treatment of urethra and prostate as needed. In none of these has epididymitis or arthritis developed; in only four have gonococci been found after a month's "follow-up" treatment of the urethra, while in sixteen every vestige of the disease vanished within fourteen days after the injection. Six men returned years later with a new infection, requesting a repetition of the little operation; in three who came with acute arthritis, the joint lesions promptly subsided after injection of the vesicles. One man, operated on eight years ago in a hospital on the sixteenth day after the discharge was discovered, was dismissed on the twelfth day thereafter, and married

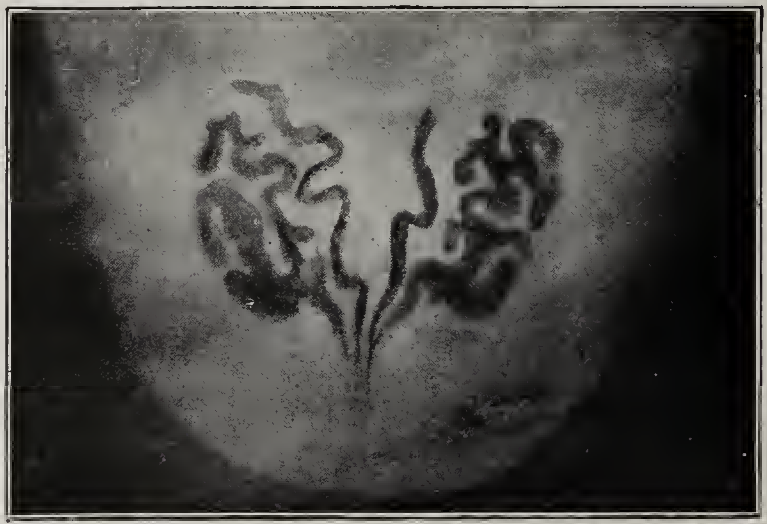

Fig. 8.—Seminal vesicles filled with collargol solution.

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2. Cumming, R. E., and Glenn, J. E.: J. Urol. 5: 52, 53 (Jan.) 1921.
3. Wolbarst, A. L.: Am. Med., November, 1921, p. 493.

his nurse on the fifteenth day after operation, without inducing evidence of infection in either person. To men already married who, for diplomatic reasons at least, desire early resumption of conjugal relations, I quote my answer to the much discussed question, "When may the man marry?" "Whenever repeated expert examinations of his emitted semen fail to reveal gonococci."

The physician inexperienced in this procedure should perform the original open operation, and thus avoid the unfortunate but common mistake of injecting the sheath of the vas, instead of its lumen. With experience, the simple puncture can be made in the office, a measure acceptable to some who object to the loss of time and chance of betrayal incidental to residence in a hospital.[4]

SUMMARY

1. Acute gonorrhea in the male is not only a "specific urethritis" but also frequently an acute vesiculitis within the first month. The latter is the serious factor, since without it there is never epididymitis, rarely infection of the blood stream, and seldom chronic gonorrheal discharge.

2. The anatomic features of the urethra prevent efficient local medication of this canal; yet its tissues present a natural defense of high efficiency. By contrast, the infected seminal vesicle offers excellent conditions for successful local medication; but its natural defense is feeble.

3. Standard treatment of acute gonorrhea includes no provision for medication of the infected vesicle; and standard treatment is admittedly inefficient and unsatisfactory.

4. In eighty-three cases of acute gonococcus infection with standard treatment of the urethra plus prompt medication of the infected vesicle through vas puncture, there has been no epididymitis or arthritis, and but four cases of chronic discharge.

5. It is understood that the vesicles are injected in acute gonorrhea, not as a routine measure, but only in cases in which vesicular infection is demonstrated by the finger in the rectum.

31 North State Street.

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[4] Belfield, W. T.: Vas Puncture in Acute Gonorrhea, J. A. M. A. **74**: 148 (Jan. 17) 1920.

Clinical Notes, Suggestions, and New Instruments

RECTAL PACKING

Waters F. Burrows, M.D., and Elliott C. Burrows, M.D.,
New York

Rectal surgery is usually minor surgery, but possible complications can cause the patient more discomfort and the surgeon greater anxiety than the removal of an appendix or a gallbladder. It is largely for this reason that rectal work has remained more or less specialized.

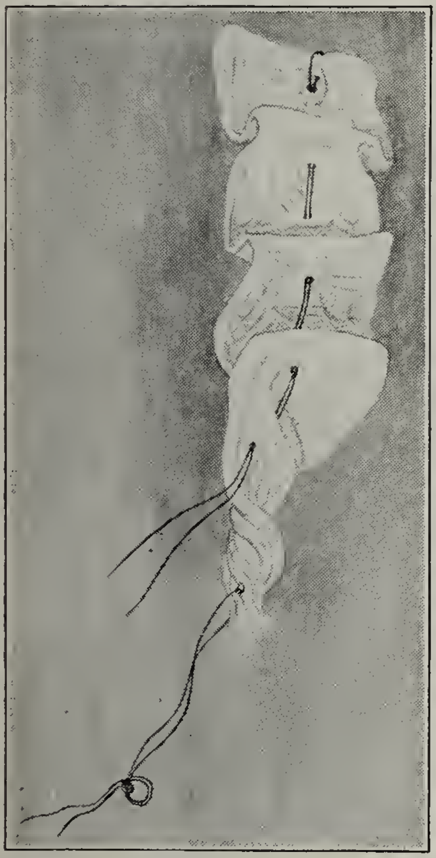

Fig. 1.—Gauze packing.

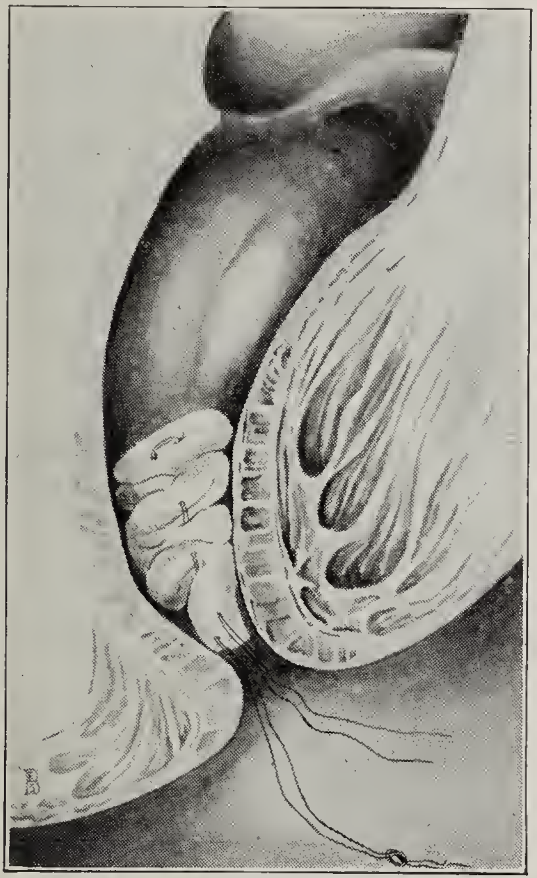

Fig. 2.—Packing in rectum.

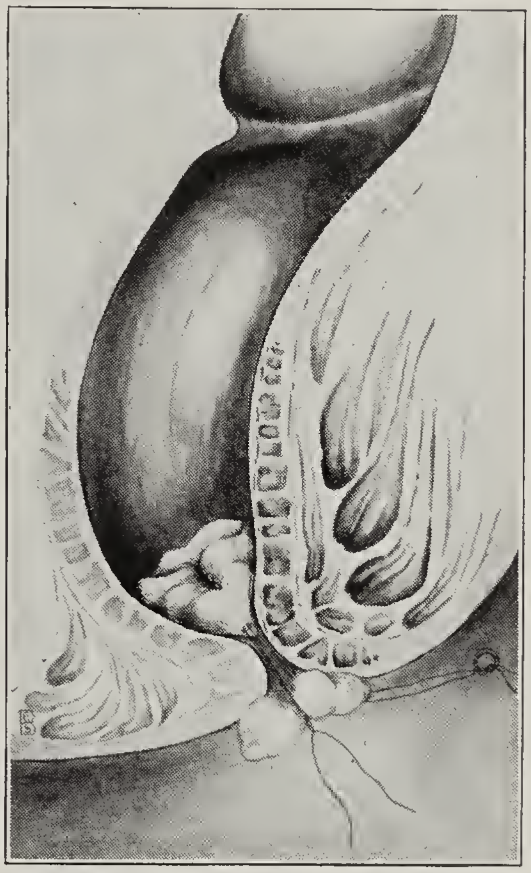

Fig. 3.—Packing compressed and counter-pressure pad.

The most common complication is after-pain, which, however, with proper technic should be the exception after both local and general anesthesia. Rectal packing is a notorious cause of rectal pain, but some modification of the usual method is required to protect the field of operation from fecal contamination for the first few hours, to drain secretions and to insure hemostasis. Usually a rubber tube surrounded with gauze is passed through the anal canal, thereby permitting the escape of gas. The preliminary evacuation of the bowels and the use of camphorated tincture of opium, should gas and increased peristalsis occur, make the use of a tube unnecessary.

The first requisite in rectal packing is to leave no considerable foreign body in the anal canal; otherwise, pain and efforts to expel it occur. There is required a small amount of intrarectal gauze and a means to exert various degrees of counterpressure. We use a packing which insures hemostasis, and which is intrarectal and is easily removable. Gauze is folded so as to make a drain 6 inches (15 cm.) long and 1 inch (2.5 cm.) wide. Through this lengthwise are passed two strands of pliable wire, looped at the distal end of the gauze, thus permitting the drain, which is passed through a proctoscope with a director, to fold together and be compressed against the anus, as traction is made on the wires. The two wires are then twisted over a small pad placed against the anus externally, thus exerting the compression desired. Another wire attached to the proximal end of the drain permits the unfolding and easy removal of it. This can be done through a proctoscope, the wires being passed through grooves in the obturator, after which, as traction is made on them, the proctoscope enters the anal canal. Gauze thus removed does not traumatize the area of operation.

17 East Thirty-Eighth Street.

A CASE OF SEVERE ASCARIS INFESTATION *

Samuel B. Pessôa, M.D., São Paulo, Brazil
Fellow of Institute of Hygiene

This represents the heaviest degree of infestation of which I have been able to find a record. The symptoms resembled abdominal tuberculosis, but the result of the therapeutic test amply justified the diagnosis of heavy *Ascaris* infestation as a cause of all symptoms.

REPORT OF CASE

M. de A., a negro boy, aged 6 years, entered the children's ward of Santa Casa de Misericordia in the service of Prof. Pincheiro Cintra, Aug. 7, 1921. Both the mother and the father died from influenza during the epidemic in 1918; an aunt cared for the child. He had never been strong, being always undernourished and ill. He had not had any of the common children's diseases. For the last four weeks he had had occasional fever, had become very thin, and had had no appetite. He had been badly neglected, and his symptoms had not been carefully noted.

The patient was small and timid, and was markedly emaciated; the infraclavicular and supraclavicular fossae were markedly excavated; the skin was dry, with an evident scabies; anemia was marked, as shown by the discoloration of the mucous membranes. The tongue showed deep impressions of the teeth. Respiration was of the costal type, being very superficial, with a rate of 35 a minute. Percussion revealed slight dulness at both bases, more marked at the right. There was tympany at the right apex. On auscultation one noted an absence of respiratory sounds at the right base. Crepitant râles were heard over the midportion of both lungs. The heart was of normal size. The sounds were normal except for the accentuated second sound in the second intercostal space to the right of the sternum. The pulse was slow, regular and weak, the rate 78 a minute.

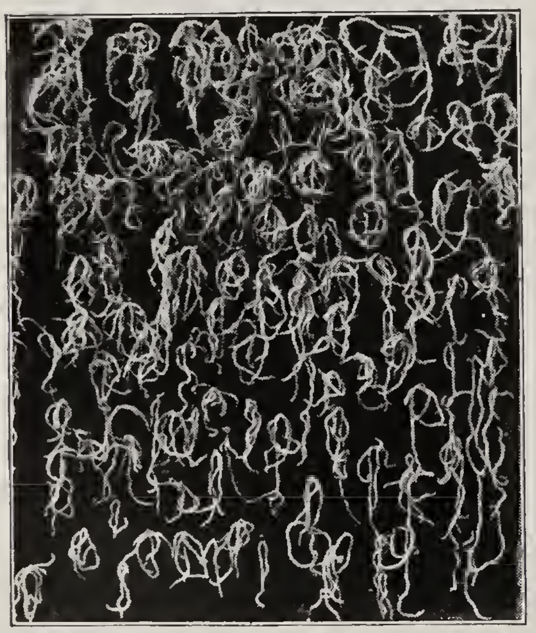

Fig. 1.—Worms removed from child.

The abdomen was markedly distended, the umbilicus prominent and herniated. The child complained of general abdominal pain not localized to any particular point. Palpation revealed numerous masses of various sizes, rather soft in consistency and readily movable. The whole abdomen had a dough-like consistency. Other organs were normal. The intradermal tuberculin reaction was negative. Repeated careful search of the sputum for the tubercle bacillus gave negative results. The urine was normal. The Wassermann reaction was positive. The differential white count revealed an 8 per cent. eosinophilia, and examination of the feces revealed a number of *Ascaris* ova. The child had a persistent diarrhea and a temperature varying from 36.8 to 39.2 C. (98 to 102.5 F.), as shown on the accompanying chart.

The child was given a mixture of oil of chenopodium and castor oil, and the following morning expelled 108 ascarids. During the afternoon he expelled 437, and the following day thirteen more, a total of 558. All pain and tenderness of the abdomen, as well as the abdominal masses, disappeared at once.

The child began to improve in general health, all pulmonary symptoms disappearing. His appetite returned and his fever disappeared.

A second examination of feces was negative and, two months afterward, the child was discharged from the hospital, well and strong.

COMMENT

I have occasionally seen persons infected with 100 or more ascarids, and on one or two occasions have observed an infestation of more than 150. There are occasional references in the literature to infestation with 200 or even 300 ascarids. I have carefully searched our available literature, however, and in no case have I found a report of an infestation exceeding 500. I believe, therefore, that this is the heaviest case of *Ascaris* infection on record.

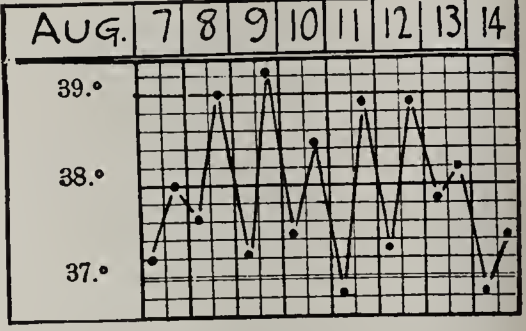

Fig. 2.—Temperature chart.

The case is also of interest because of the pulmonary symptoms, which disappeared with the expulsion of the worms, together with the fever, which is commonly described as the typhoid type of fever of *Ascaris* infection, and which slowly disappeared after the worms were expelled. It is interesting to note that there were no nervous phenomena, which are so common in heavy *Ascaris* infestation. We were also surprised that there were no signs of intestinal obstruction, for we have had cases in the ward with a much lighter degree of infestation in which intestinal obstruction has occurred. Occlusion seems to occur when the worms become enlaced, forming a firm mass which acts as any foreign body in obstructing the free passage of fecal material. We do not know the cause of this ball-like formation in certain instances, but it seems to occur only with fully developed, mature ascarids. The worms in the case reported were slender and short, the great majority of them being immature forms. Since they were all of about the same stage of development, it seems more than probable that the boy received a mass infection, acquiring all the worms in a short space of time.

CASE OF CONGENITAL PANCREATIC CYST

Charles E. Eha, M.D., Cincinnati

A well nourished girl, aged 5 months, born at the eighth month of gestation, weighing 5 pounds, 5 ounces (2.4 kg.), five months later weighed 12 pounds, 10 ounces (5.7 kg.). The child was breast fed, and the bowels were normal, except at one time following the ingestion of orange juice, when some mucus appeared in the stools. This was the only child of healthy parents. The mother had had one miscarriage.

Examination revealed a round, movable mass about the size of a small orange in the left hypocondrium. Following an opaque enema the roentgen ray revealed a 1½ inch (4 cm.) filling defect in the descending colon just distal to the splenic flexure. During exposure the patient was lying on the abdomen and the tumor mass displaced the opaque enema, but when the patient was turned on the back the enema passed farther along in the colon and the filling defect disappeared.

The Wassermann reaction was negative, and the urine was free of albumin and sugar.

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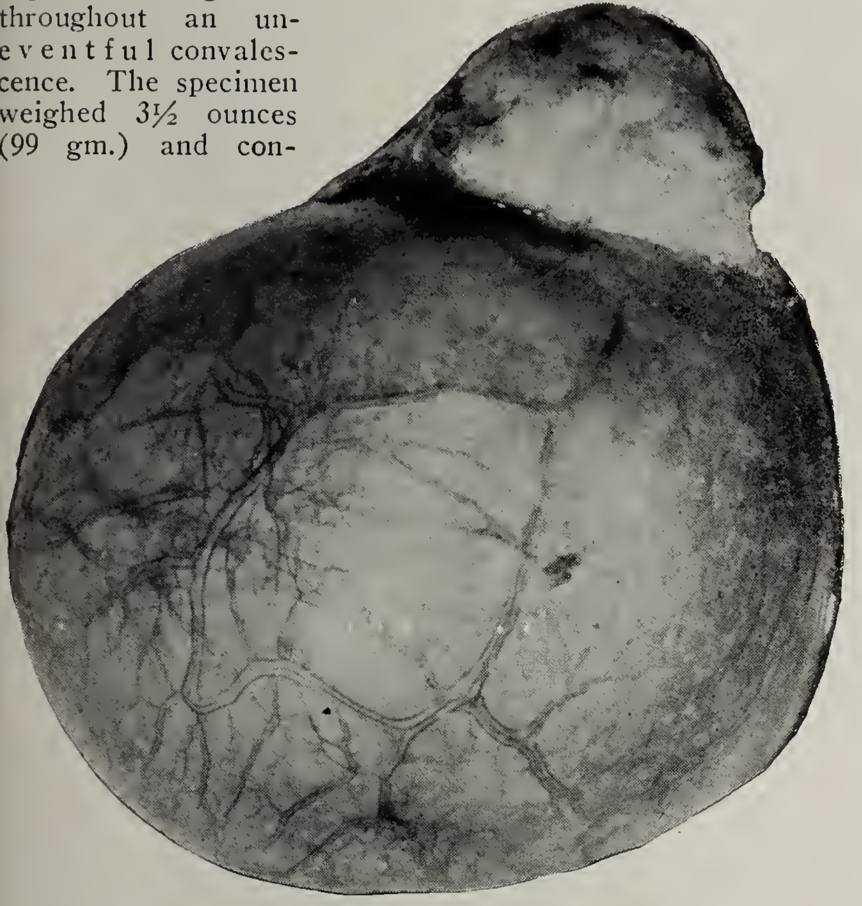
* From the Children's Ward, Santa Casa de Misericordia.

An incision was made through the outer margin of the left rectus muscle over the mass, which proved to be a cyst attached to the tail of the pancreas by a broad base. It was dissected free, the pancreatic portion transfixed, and the abdomen closed with through-and-through silkworm-gut sutures. The child nursed two hours after the operation, and never missed a regular feeding time throughout an uneventful convalescence. The specimen weighed 3½ ounces (99 gm.) and consisted of two sacs, the larger of which measured 7¼ inches (18 cm.) in circumference, and 2½ inches (6.5 cm.) in diameter. The smaller sac was attached to the larger and measured 2¾ inches (7 cm.) in circumference.



Congenital pancreatic cyst.

The outer wall was firm, smooth, and easily indented; the vessels stood out distinctly. An incision revealed that the two sacs were distinct, and separated by a firm wall. The inner lining was smooth; the contents were clear, yellowish watery, and alkaline, and on being heated became turbid but did not coagulate.

Histologic examination revealed fibrous tissue only; there was no infiltration with cells and no lining epithelium. The diagnosis was "congenital cyst."

DEMONSTRATION OF LEPRA BACILLI BY ASPIRATION OF NODULES *

S. S. Greenbaum, M.D., and Jay F. Schamberg, M.D.,
Philadelphia

In suspected cases of leprosy it is a common procedure to excise a nodule for microscopic study, but this for various reasons cannot always be done. Another method of searching for bacilli in the nodules is to scrape off the epidermis over a suspected nodule and make smears from the serum which exudes. This is satisfactory for dermic nodules, but for hypodermic infiltrations the procedure is less simple and is likely to draw blood.

We have found that characteristic lepra bacilli may be demonstrated in smears by acupuncture of lesions, a method which is simple, virtually painless, and easy to carry out in timid and apprehensive patients. The technic consists in the use of a syringe with tightly fitting plunger, a small record syringe by preference, a short pointed needle of average gage, and a few drops of salt solution or distilled water. The node is first gently massaged in order to bring as much fluid into it as possible. The needle is then introduced, after careful cleansing of the cutaneous surface, and the salt solution or distilled water slowly injected and withdrawn several times, thus making a sort of emulsion of the tissue about the needle point. The needle and its contents are then withdrawn, and smears are made from the fluid.

It is advisable to make several slides, one or two to be stained by Gram's method and one or two by Ziehl-Neelsen technic. If the operative technic has been properly performed, there will be found, in 100 per cent. of the examinations made, the typical arrangement of acid-fast, gram-positive bacilli in the form of cigaret-like bundles, as isolated organisms and as granules. Furthermore, there will be found the large lepra cell with the bundles of acid-fast organisms in them.

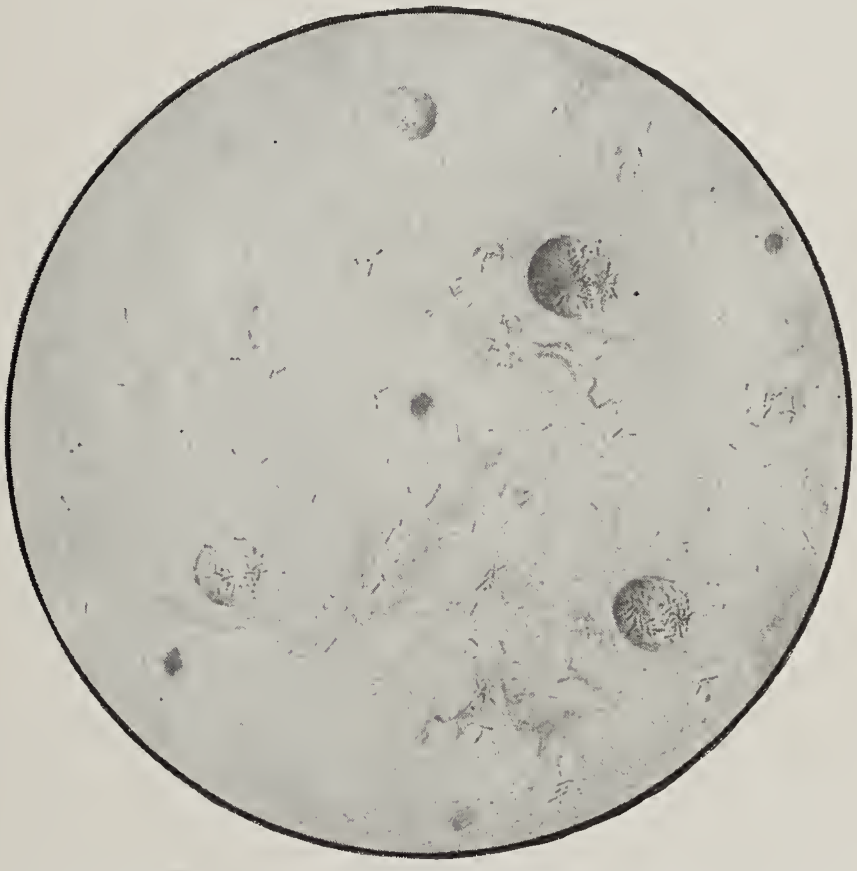
We believe that this mode of diagnostic acupuncture is a simple and valuable aid in the diagnosis of leprosy. There are very few lesions of the skin which are likely to yield acid-fast bacilli. In lupus vulgaris, bacilli are so sparse that they are with difficulty demonstrable by sectioning and staining.[1]

While acid-fast bacilli in the nasal secretions were found by Sticker in 128 out of 153 cases examined, they were absent in two recent cases studied by us even after the administration of potassium iodid.

Lepra bacilli are sometimes present in apparently healthy skin in lepers, but we were not able to demonstrate any in two cases examined by aspiration according to the method here described.

It has been shown that lepra bacilli in enlarged subcutaneous lymph nodules may be demonstrated by this method, and this may be of particular diagnostic value in macular leprosy. The successful finding of *Spirochaeta pallida* in lymph glands by this technic is well known.

Diagnostic acupuncture is of advantage especially (1) in the deeper forms of nodular leprosy; (2) in patients who refuse permission for a biopsy (as occurred in one of our cases); (3) when one does not desire to await the results of a biopsy in order to confirm the provisional diagnosis;



Lepra bacilli in smear from fluid secured by aspiration of nodule; grouped bacilli in lepra cells as well as many scattered through field. This specimen contains an unusual number of organisms.

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* From the Dermatological Research Institute.

[1] E. Marchoux (Ann. de dermat. et de syph., October, 1921) has recently described a new disease with cutaneous manifestations in the form of round pigmented non-anesthetic spots, simulating leprosy and caused by a fine, short, acid-fast bacillus disposed as small masses resembling masses of dust and which he calls Mycobacterium pulviform. No other cases have as yet been reported.

(4) in those cases in which examinations of the discharge or scrapings from the nasal mucosa are negative, and (5) possibly in macular leprosy.

1922 Spruce Street.

THE AUSCULTATORY SIGN IN A CASE OF SPONTANEOUSLY RUPTURING HEART *

Paul Reznikoff, M.D., New York

A white man, aged 43, American, married, an embosser, admitted to Bellevue Hospital, Feb. 16, 1922, stated that he had always been in perfect health, never having had a sick day, until February 6. On that day he had a constricting pain over the lower part of his left chest which was diagnosed as indigestion. Following this he had six such attacks in the next ten days, each succeeding one more severe and lasting longer. In the last few the pain radiated to the left supraclavicular region and down the ulnar margin of the left forearm. These spells of sharp pain occurred whether he was active or in bed, and were not relieved by any of the many remedies tried. The attack for which he came into the hospital was his seventh and had begun the night before, never remitting.

The patient was rather well developed and of fair nutrition. When he reached the ward he was moderately cyanosed, orthopneic, and in marked distress. He groaned constantly and could not lie quietly on his bed. Neither the nitrites nor morphin were of any avail in allaying his terrific discomfort. The heart was slightly enlarged to the left and right, the apex beat being felt in the fifth left intercostal space, 11 cm. from the midsternal line. No thrills were present, and the apex impulse was localized and of fair strength. The heart sounds were of poor quality. The rate was slow, averaging 72 a minute, and there were no murmurs present. At the base he had an accentuated aortic second sound. The rhythm was peculiarly irregular. About eight beats would occur at a definite, regular rate. This series would be followed quite abruptly by about eight beats at a different rate, but forming a regular unit by themselves. An electrocardiographic record substantiated this finding. It was interpreted by Dr. Cary Eggleston as either a phenomenon of two foci for stimuli, i. e., a normal sinus and a focus with a slower rate near the sinus, or as an alternating bradycardia and tachycardia from the same focus. The patient's arteries were thickened and tortuous wherever they could be examined. The blood pressure was: systolic, 170; diastolic, 120. No other physical findings had any bearing on the cardiovascular condition.

The course of the disease was short and stormy. The pain was unrelenting. The patient was becoming more dyspneic. A cold perspiration bathed him continually, and he was a picture of utter misery. At 7 p. m., while under observation, the unfortunate man threw his head back, and his face expressed the most extreme anguish. He had a sudden attack of projectile vomiting, became markedly cyanosed, and collapsed. His wrist pulse was imperceptible. He took four deep inspirations about thirty seconds apart, and then died.

During these two minutes a stethoscope was clapped to his chest, and over the precordium was heard an extraordinary sound. A continuous, muffled, low pitched, rushing rumble, louder during the expiratory phase, dimmed during the few inspiratory periods, was constantly heard. No heart sounds were evident. All this transpired so quickly that only two auditors could listen to this remarkable murmur. Its significance was not apparent, and at first it was imagined by the observers that the sounds were such as might be heard over a fibrillating ventricle.

A necropsy, performed by Dr. Douglas Symmers, revealed an irregular laceration of the wall of the left ventricle in immediate proximity to the interventricular septum, situated midway between the base and apex of the heart. This laceration was 3 cm. in length and ran obliquely downward and toward the right directly over the course of the corresponding coronary artery. The fat tissue covering the upper and outer half of the conus arteriosus was infiltrated by blood, the infiltrated area measuring 5 cm. in length and 3.5 cm. in breadth. From the extreme upper end, a broad linear area of hemorrhage extended upward toward the opening of the corresponding coronary artery. The left coronary artery was opened by the pathologist for a short distance, and presented at a point 1.5 cm. from its origin a calcareous plaque. The laceration extended through the heart muscle and opened into the ventricle. The muscle tissue in the immediate vicinity of the lacerated area was soft, almost fluctuating, for a distance of about 1 cm., and this area of softening extended downward in the general direction of the apex for a distance of 2.5 cm. A transverse section of the heart muscle was made just above the area of laceration. Here the coronary artery was about 2 mm. in diameter and markedly calcified. The lumen could be seen filled with a reddish body about the size of a horsehair, probably a fresh thrombosis. The pericardium was filled with fluid and freshly clotted blood.

In the light of the necropsy, the clinical course was thus interpreted: The acute onset of illness, the continuous, agonizing, precordial pain and distress all point to the rather sudden thrombosis of the calcified coronary and the resulting degeneration of the heart muscle. The sudden collapse, projectile vomiting and immediate death were probably coincident with the rupture of the heart. There can be little doubt that the auscultatory evidence of this dramatic accident was the rumble heard as the blood poured into the pericardium so like the sound of water rushing through a bursting dam.

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* From the Second Medical (Cornell) Division, Bellevue Hospital.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

MERCURIC BENZOATE (See New and Nonofficial Remedies, 1922, p. 190).

Ven Sterile Solution Mercury Benzoate 1 Cc.: Each Cc. contains mercuric benzoate-N. N. R. 0.02 Gm. (1/3 grain).

Prepared by the Intra Products Co., Denver.

MERCURIC SALICYLATE (See New and Nonofficial Remedies, 1922, p. 193).

Sterile Suspension Mercury Salicylate in Cacao Butter 1 Cc.: Each Cc. contains mercuric salicylate 0.097 Gm. (1½ grains).

Prepared by The Intra Products Co., Denver, Colo.

Sterile Suspension Mercury Salicylate in Olive Oil 1 Cc.: Each Cc. contains mercuric salicylate 0.097 Gm. (1½ grains).

Prepared by The Intra Products Co., Denver, Colo.

MERCUROCHROME-220 SOLUBLE (See New and Nonofficial Remedies, 1922, p. 187).

The following dosage form has been accepted:

Tablets of Mercurochrome-220 Soluble: Each contains 4.6 grains.

Venereal Disease in Scandinavia.—In a recent issue of the *Tidsskrift for den norske Lægeforening,* Dr. K. Grön states that the Swedish laws passed in 1918 were instrumental in reducing the incidence of venereal disease from 51.6 per 10,000 inhabitants in 1919 to 34 per 10,000 in 1920. Medical instruction in venereal disease is maintained at a high level in Sweden and at an even higher level, Dr. Grön believes, in Norway. The Swedish Medical Association does not allow any member to practice as a specialist without at least one year's graduate work in this subject, and almost all Swedish venereal disease specialists have served two, and many four, years at St. Göran's Hospital, the principal training center. Norway and Denmark have adopted from Sweden, as has Germany also, a system of hospitals for congenitally syphilitic children, following the plan of Prof. Edward Welander, who opened the first hospital of the kind in 1900.

STATE BOARD STATISTICS FOR 1921

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1298 to 1305 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1921. All state licensing boards sent in reports, and the figures have been carefully verified.

Tables A and B, when read from left to right, show for each medical college named (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total numbers examined, registered and rejected, and (*j*) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Graduates of All Years Examined in 1921

Table A shows the results for all candidates who took examinations in 1921, regardless of the years in which they graduated. This shows that altogether 4,807 candidates were examined last year, as compared with 4,787 in 1920, 4,736 in 1919, 3,637 in 1918 and 4,730 in 1917. This year shows an increase of 20 since last year, 71 since 1919 and 1,170 since 1918. Since 1906 and until 1919 there was a steady decrease in the totals examined owing chiefly to (*a*) the increasing number registered through reciprocity, and (*b*) the general diminution in the number of medical colleges, students and graduates. The marked decrease in 1918 was due to the enlistments for military medical service. Of those examined in 1921, 12.4 per cent. failed, as compared with 15.3 in 1920, 14.3 in 1919, 13.3 in 1918 and 14.1 per cent. in 1917.

There were 75 medical colleges in the United States granting degrees in 1921 which had graduates examined, as compared with 78 in 1920, 79 in 1919, 80 in 1918 and 89 in 1917. There has been a decrease of 78 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian medical schools were examined in 17 states. The largest number, 29, were examined in New York, the next largest number being 13 examined in Michigan. The figures for each college are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 90 candidates from Canadian colleges were examined, of whom 20, or 22.2 per cent., failed.

Foreign graduates were examined in 30 states, the total examined being 178, and of this number 77, or 43.2 per cent., failed. In 1918 45, in 1919 67 and in 1920 86 foreign graduates were examined. The largest number of foreigners examined in any state in 1921 was 40 in New York, where 20, or 50 per cent., failed.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number of graduates examined; (*b*) the number of states in which a school's graduates have been examined; (*c*) the character of the board making the examination and the methods employed. Some boards refuse to examine graduates of inferior medical colleges, while others (see Table H) not only examine graduates of all medical colleges but also admit osteopaths to the physicians and surgeons' examination. Some boards hold careful examinations which include practical laboratory and clinical tests, or they mark the papers more severely, while others, especially partisan boards, are very lenient. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D. A state board which admits to its examinations graduates of low-grade medical schools would be expected to have a higher percentage of failures.

Undergraduates and Osteopaths Examined as Physicians During 1921

For the last three years the few undergraduates examined have been accidental instances due evidently to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only six have been licensed in that state in fifteen years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, several boards register as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with the lowest grade Class C medical college. In two of these states—Colorado and Texas [1]—the boards refuse to admit graduates of Class C medical schools to their examinations but nevertheless continue to examine graduates of osteopathic colleges which, in fact, are nothing more than very low-grade medical schools.

During 1921, in California, 32 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number 25, or 78.1 per cent., were granted licenses. In Colorado, of 17 osteopaths examined, 13, or 76.5 per cent., were granted licenses as physicians and surgeons (see Tables G and I). In Massachusetts, of 24 examined, 8, or 33.3 per cent., were licensed. Five osteopaths were licensed as physicians in Wisconsin, 3 in Texas and 1 each in Oregon and Utah. Altogether 84 osteopaths were examined as physicians, and of this number 56, or 66.7 per cent., were licensed.

Recent Graduates Examined During 1921

Table B gives the results for graduates of 1917 to 1921, inclusive, examined during 1921. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1921, 4,046, or 84.2 per cent., were recent graduates, and of this number, 7.8 per cent. failed, as compared with 12.4 per cent. for all candidates.

Old Practitioners Examined During 1921

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1916 and previous years (third column), and for graduates of 1921 (fourth column). Of the graduates of 1916 and previous years—"old practitioners"—673 were examined, and of this number 251, or 37.3 per cent., failed, as compared with 7.8 per cent. of failures for recent graduates. The total number of these candidates is diminishing each year [2] as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which have limited or no reciprocal relations with other states (Connecticut, Massachusetts, New York,

(CONTINUED ON PAGE 1305)

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1. See Table D on pages 1306 and 1307.
2. See Table 2 on page 1308.

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22 Minnesota		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																												
1	University of Alabama School of Medicine																	1	1																										1
	ARKANSAS																																												
2	University of Arkansas Medical Department					2	0																																						2
	CALIFORNIA																																												
3	College of Medical Evangelists							17	0	2	0															1	0													1	0					3
4	College of Physicians and Surgeons, Los Angeles							18	2															1	0															1	3					4
5	College of Physicians and Surgs., San Francisco							6	3																							1	0													5
6	Stanford University School of Medicine							15	0																															1	0					6
7	Oakland College of Medicine and Surgery							1	0																																					7
8	University of California Medical School							30	0																															1	0					8
	COLORADO																																												
9	University of Colorado School of Medicine									12	0																																			9
	CONNECTICUT																																												
10	Yale University School of Medicine							1	0			12	0																											1	0					10
	DISTRICT OF COLUMBIA																																												
11	Georgetown University School of Medicine											0	1			12	0																			1	0			1	0	1	0			11
12	George Washington University Medical School							1	0							17	0					1	0															1	0					1	0	12
13	Howard University School of Medicine															6	5							2	0					1	0							2	1			1	0			13
	GEORGIA																																												
14	Emory University School of Medicine	5	0															5	0	38	0																			1	1					14
15	University of Georgia Medical Department																	2	4	19	0																										15
	ILLINOIS																																												
16	Chicago Medical School			0	1																			42	19																					16
17	Hahnemann Medical College and Hospital—H.			0	1			0	2															8	0																					17
18	Loyola University School of Medicine																	1	0			1	0	66	1			1	0			0	1							1	0	4	2			18
19	Northwestern University Medical School			1	0			9	0	1	0											1	0	47	4			1	0	1	0											5	0	1	0	19
20	Rush Medical College (University of Chicago)							12	2			1	0					1	0					102	0			3	0	1	0							1	0	1	0	1	0	2	0	20
21	University of Illinois College of Medicine							1	1													1	0	52	2			3	0					0	1					1	0			1	0	21
	INDIANA																																												
22	Indiana University School of Medicine							1	0																	56	0							1	0							1	0			22
	IOWA																																												
23	State University of Iowa College of Medicine							3	1																			42	0													1	0	1	0	23
	KANSAS																																												
24	University of Kansas School of Medicine					1	0	1	0																	1	0			31	0																24
	KENTUCKY																																												
25	University of Louisville Medical Department					1	0	0	2									1	0			1	0	1	0	1	0	1	0			48	1													25
	LOUISIANA																																												
26	Tulane University of Louisiana School of Med.	20	0			4	0									1	0	4	0															65	2											26
	MAINE																																												
27	Bowdoin Medical School											4	0																							5	0							2	0	27
	MARYLAND																																												
28	Johns Hopkins University Medical Department							3	0	1	0	3	0							1	0																	60	0	4	0	1	0	5	0	28
29	Univ. of Md. School of Med. & Coll. of P. & S.							1	0			1	1	1	0			2	0																			54	1	3	3					29
	MASSACHUSETTS																																												
30	Boston University School of Medicine																																			6	0			10	0					30
31	College of Physicians and Surgeons, Boston											1	0			1	1	0	1	1	0																			6	13					31
32	Harvard University Medical School							1	0			9	0			0	1					1	0					3	0							6	0	1	0	39	0			5	0	32
33	Middlesex College of Medicine and Surgery.—N.											3	0																											23	28					33
34	Tufts College Medical School											6	0					1	1																	5	0			72	6					34
	MICHIGAN																																												
35	Detroit College of Medicine and Surgery																																							2	0	53	0			35
36	University of Michigan Medical School			1	1			1	0									0	1																							74	0			36
37	University of Michigan Homeo. Med. School.—H.																																									5	0			37
	MINNESOTA																																												
38	University of Minnesota Medical School							2	0															1	0			1	0															77	0	38
	MISSOURI																																												
39	Kansas City College of Medicine and Surgery.—N.					11	5			0	3	12	1			0	1																													39
40	Kansas City Univ. of Phys. and Surgs.—N.									2	0	1	1																			0	1							1	0					40
41	St. Louis College of Physicians and Surgeons			0	3			0	2	6	4	33	2			0	1	0	1									1	0											2	0					41
42	St. Louis University School of Medicine			1	0			2	0									1	0			1	0	5	0			1	0	3	0															42
43	Washington University School of Medicine					1	0	1	1															2	0					5	0					1	0							1	0	43
	NEBRASKA																																												
44	Creighton University College of Medicine							1	0																			1	0																	44
45	University of Nebraska College of Medicine																																												45
	NEW YORK																																												
46	Albany Medical College											0	1																																	46
47	Columbia University College of Phys. & Surgs.							2	0	1	0	8	0					1	0	1	0	1	0													2	0			5	0			3	0	47
48	Cornell University Medical College							1	0			3	0			1	0											1	0																	48
49	Fordham University School of Medicine											4	1																											1	0					49
50	Long Island College Hospital											2	1					0	1																					1	0					50
51	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	1	0																					1	0																					51
52	Syracuse University College of Medicine							1	0															0	1																					52
53	University and Bellevue Hospital Med. Coll.											1	1			1	0	1	0																										53
54	University of Buffalo Medical Department							1	1																																					54
	OHIO																																												
55	Eclectic Medical College.—E.					1	0	0	1	0	2	2	0													1	0					1	0													55
56	Ohio State University College of Medicine																							1	0																					56
57	Ohio State University Coll. of Homeo. Med.—H.																									1	0	1	0			1	0													57
58	University of Cincinnati College of Medicine							2	1																	1	0																			58
59	Western Reserve University School of Medicine																													1	0															59
	OKLAHOMA																																												
60	University of Oklahoma School of Medicine																					1	0											1	0											60
	OREGON																																												
61	University of Oregon Medical School							2	0																																					61
	PENNSYLVANIA																																												
62	Hahnemann Medical College and Hospital.—H.											1	0			0	1																			0	1			1	0					62
63	Jefferson Medical College	1	0			1	0	1	1			3	1	2	0	1	0	1	0	4	0			0	1	2	0			1	0	1	0					1	1	2	0					63
64	Temple University School of Medicine											0	1	3	0	0	1																			1	0	1	0							64
65	University of Pennsylvania School of Medicine	1	0	1	0			4	0	2	0	2	0	2	0	1	0			1	0	1	0	1	0											1	0			3	0	1	0	4	0	65
66	University of Pittsburgh School of Medicine											1	0					2	0																							1	0			66
67	Woman's Medical College of Pennsylvania											4	0					1	0																					1	0					67
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
																3	1																																							6	4	2	33.3	2	1
																																																								2	2	0	0.0	1	2
																																																		1	0			2	2	26	24	2	7.7	6	3
																																																		1	0			1	0	27	22	5	18.5	5	4
																										2	0																			1	0									11	8	3	27.3	3	5
																																																								18	18	0	0.0	3	6
																																																								1	1	0	0.0	1	7
																																																								31	31	0	0.0	2	8
																1	1																																					1	0	15	14	1	6.7	3	9
																8	0																																							22	22	0	0.0	4	10
																2	0					2	0					1	0	1	0			0	1																			1	0	24	22	2	8.3	11	11
		3	0									4	0			4	1																							1	0			2	0			2	0					1	0	32	31	1	3.1	10	12
																6	5	1	1			0	1					7	1			1	0											2	0									1	1	52	37	15	28.9	14	13
																																2	0																							52	51	1	1.9	5	14
																																1	0																							26	22	4	15.4	3	15
						1	0	0	1																	1	0																					0	1	0	1			0	1	67	43	24	35.8	7	16
																						0	2																							0	1									13	9	4	30.8	4	17
1	0	1	0	1	0																	1	0	2	0											1	0									0	2			1	2			1	0	87	77	10	11.5	12	18
		1	0	3	0					1	0					1	0			1	0			1	0			1	0					4	0											3	0			5	0			1	0	90	86	4	4.4	18	19
		1	0			1	0									1	0			0	2													2	0											1	1			7	0			1	0	148	145	3	2.1	21	20
																																		1	0											0	1			1	0					71	64	7	9.9	14	21
		1	0																									1	0					1	0					1	0															63	63	0	0.0	8	22
		1	0													1	0			1	0					2	0													1	0															54	53	1	1.9	9	23
		1	0																															1	0											0	1									37	36	1	2.7	7	24
		1	0	1	0											2	1					1	0			1	0	0	2			1	0					2	0					1	0			2	0							72	66	6	8.3	18	25
8	1															5	0	4	0									0	1							4	0	5	0					1	0											125	121	4	3.2	12	26
		0	1													1	0											1	0	1	0																									15	14	1	6.7	7	27
																10	0					5	0					1	0							1	0	1	0					2	0	2	0	2	0	2	0					104	104	0	0.0	17	28
				2	0											10	2	1	0	1	0							1	0	1	0	1	0											2	0			4	0					3	0	95	88	7	7.4	16	29
																2	2											1	0	1	0	1	0											1	0									1	0	25	23	2	8.0	8	30
										1	0																																													25	10	15	60.0	6	31
		2	0													19	3					4	0					6	0	4	0							1	0	1	0			2	0					3	0			1	0	112	108	4	3.6	19	32
																														1	0																									55	27	28	50.9	3	33
		1	0							1	0					6	9											1	0	9	0																									118	102	16	13.6	9	34
																1	1																																					1	0	58	57	1	1.7	4	35
																8	3											3	1					2	0																			1	0	96	90	6	6.2	8	36
																																																								5	5	0	0.0	1	37
				1	0															2	0																																			84	84	0	0.0	6	38
																								3	0																									0	1					37	26	11	29.7	7	39
																																																								6	4	2	33.3	5	40
		5	5			1	0	1	0															3	0															1	0									1	0	0	1			73	54	19	26.0	16	41
		61	0	2	0											3	0					1	0											2	0											1	0			1	0			1	0	86	86	0	0.0	15	42
		31	0													1	0	1	0					2	0											1	0																	1	0	49	48	1	2.0	12	43
				2	0	21	2									0	1									0	1													0	1					1	0									31	26	5	16.1	8	44
						46	0									1	1																							1	0													1	0	50	49	1	2.0	4	45
																20	1																																							22	20	2	9.1	2	46
		1	0									1	0			133	5									1	1	4	1			1	0			2	0	1	0	1	0									1	0					177	170	7	4.0	19	47
		1	0													41	1											1	0																											50	49	1	2.0	7	48
																68	10													1	0																									85	74	11	12.9	4	49
								1	0							84	1									1	1	1	0																											93	90	3	3.2	7	50
																55	13											1	0																							1	0			72	59	13	17.9	4	51
																28	0																																							30	29	1	100.0	3	52
																116	3											2	0																					1	0			1	0	127	123	4	3.2	7	53
																61	6											3	0																											72	65	7	9.7	3	54
						1	0									7	2					27	2																																	47	40	7	14.9	9	55
		1	0																			36	0																																	38	38	0	0.0	3	56
																						7	0																																	10	10	0	0.0	4	57
																						50	0																									4	0			1	0			59	58	1	1.7	4	58
																						38	0	1	0			1	0			1	0							3	0							1	0							46	46	0	0.0	7	59
																								18	0																															20	20	0	0.0	3	60
																1	1									13	3																			3	0					1	0			24	20	4	16.7	5	61
		1	0									6	0			3	1					2	0					23	0																											40	37	3	7.5	9	62
		7	0			2	0					6	0			8	7	23	0			4	0	1	0			94	4	2	0	3	0			3	0			2	0			2	0	1	0	8	0					6	1	209	193	16	7.7	29	63
												1	0									1	1			1	0	27	10																			2	0							50	37	13	26.0	10	64
	0	1	0							1	0	6	0			7	6	12	0	0	1	2	0	1	0			71	1			3	0			1	0	2	0	2	0			2	0			1	0					3	0	150	142	8	5.3	31	65
																5	0					4	0					30	0	1	0																							1	0	45	45	0	0.0	8	66
		1	0													3	1	3	0	0	1	3	0					6	0																											24	22	2	8.3	9	67
3		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE A—PHYSICIANS EXAMINED B

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22 Minnesota	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	SOUTH CAROLINA																																												
68	Medical College of the State of South Carolina																	1	0																										
	TENNESSEE																																												
69	Meharry Medical College	1	1			3	1	0	1											1	0			5	22					0	1	0	2	2	4			1	0	0	1	1	0		
70	University of Tennessee College of Medicine					9	0											0	1																									1	0
71	University of West Tennessee Medical Department									0	2							0	1																										
72	Vanderbilt University School of Medicine	4	0			1	0	1	0			1	0					2	1					1	0	1	0					1	0	3	0					1	0			1	0
	TEXAS																																												
73	Baylor University College of Medicine											0	1																													1	0		
74	University of Texas School of Medicine							2	0																					1	0														
	VERMONT																																												
75	University of Vermont College of Medicine											5	3															1	0											6	0			1	
	VIRGINIA																																												
76	Medical College of Virginia											2	0											1	0													0	1						
77	University of Virginia School of Medicine	1	0																					1	0													1	0						
	WISCONSIN																																												
78	Marquette University School of Medicine																							2	0															1	0				
	CANADA																																												
79	Dalhousie University Faculty of Medicine																																												
80	Laval University Faculty of Medicine																																			1	0			1	6				
81	McGill University Faculty of Medicine							4	0			1	0																							2	0					4	0	2	
82	Queen's University Faculty of Medicine							1	0			0	1																											1	0	1	0		
83	University of Alberta Faculty of Medicine																																												
84	University of Manitoba Faculty of Medicine							1	0																																				
85	University of Montreal Medical Faculty											0	1																							2	1								
86	University of Toronto Faculty of Medicine							1	0																																	5	0	6	
87	Western University Medical School																																									3	0	2	
88	Foreign Colleges							7	8	1	1	4	5			1	0	1	1					2	7					1	0					1	0	0	3	12	10	5	0	4	
89	Miscellaneous Medical Colleges	2	2	2	4	11	0	0	20	3	0	15	4					21	10	2	0	4	0	4	4							1	0	2	0	1	0			9	6	7	0	0	
90	Undergraduates and Osteopaths	1	0					25	7	13	4																													8	16				
91	Totals by States	40		16		52		240		60		172		8		53		74		68		14		409		65		61		47		59		81		37		130		318		178		12	
92	Totals — Examined — Passed	37		6		46		184		44		145		8		42		50		68		14		348		65		61		46		54		74		35		123		225		176		12	
93	Totals — Examined — Failed	3		10		6		56		16		27		0		11		24		0		0		61		0		0		1		5		7		2		7		93		2			
94	Percentage of Failures	7.5		63.5		11.5		23.3		26.7		15.9		0.0		20.8		32.4		0.0		0.0		14.9		0.0		0.0		2.1		8.5		8.6		5.4		5.4		20.9		1.1		0.	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

TABLE B—GRADUATES OF 1917 TO 1921, INCLUSI

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	
	ALABAMA																																												
1	University of Alabama School of Medicine																																												
	ARKANSAS																																												
2	University of Arkansas Medical Department																																												
	CALIFORNIA																																												
3	College of Medical Evangelists							17	0	2	0															1	0																		
4	College of Physicians and Surgeons, Los Angeles							18	2															1	0															1	3				
5	College of Physicians and Surgs., San Francisco							6	3																							1	0												
6	Stanford University School of Medicine							15	0																															1	0				
7	Oakland College of Medicine and Surgery							1	0																																				
8	University of California Medical School							30	0																																				
	COLORADO																																												
9	University of Colorado School of Medicine									12	0																																		
	CONNECTICUT																																												
10	Yale University School of Medicine											12	0																																
	DISTRICT OF COLUMBIA																																												
11	Georgetown University School of Medicine											0	1			10	0																			1	0			1	0	1	0		
12	George Washington University Medical School							1	0							16	0																					1	0						
13	Howard University School of Medicine															6	5							1	0					1	0							2	1			1	0		
	GEORGIA																																												
14	Emory University School of Medicine	5	0															5	0	38	0																			1	1				
15	University of Georgia Medical Department																	1	0	19	0																								
	ILLINOIS																																												
16	Chicago Medical School			0	1																			42	18																				
17	Hahnemann Medical College and Hospital—H.																							8	0																				
18	Loyola University School of Medicine																	1	0			1	0	66	0			1	0			0	1							1	0	2	2		
19	Northwestern University Medical School			1	0			9	0	1	0													47	4			1	0	1	0											5	0	1	
20	Rush Medical College (University of Chicago)							12	0															101	0			1	0	1	0									1	0	1	0		
21	University of Illinois College of Medicine							1	0													1	0	52	2			3	0					0	1										
	INDIANA																																												
22	Indiana University School of Medicine							1	0																	56	0							1	0							1	0		
	IOWA																																												
23	State University of Iowa College of Medicine							3	0																			42	0													1	0	1	
	KANSAS																																												
24	University of Kansas School of Medicine					1	0	1	0																	1	0			31	0														
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21			

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
																																9	0															1	0							1	0	12	12	0	0.0	4	68
2	0	6	10															0	2			4	4									0	1			29	0	2	1					0	1											105	57	48	45.7	19	69
2	0																																			18	0	1	0									2	0	1	0			1	0	36	35	1	2.8	9	70
																								0	1																															4	0	4	100.0	3	71
												1	0			5	5											1	0			1	0	2	0	38	0							1	0			1	0							73	67	6	8.2	19	72
				1	0											6	3																					30	0																	42	38	4	9.5	5	73
																1	0											3	0									27	0															1	0	35	35	0	0.0	6	74
																13	1																									29	0													59	55	4	6.8	6	75
				0	1											1	0	4	1			1	0													1	0							28	1			1	1					2	0	46	41	5	10.9	11	76
																2	0	1	0									1	0							1	0							12	0			1	0					1	0	22	22	0	0.0	10	77
		1	0																			1	0																											26	0					31	31	0	0.0	5	78
																																																								0	0	0	0.0	0	79
										0	1																			1	1																									11	3	8	72.7	3	80
																9	4			0	1	1	0																							1	0							1	0	30	25	5	16.7	10	81
																7	2																																							13	10	3	23.1	5	82
																																																								0	0	0	0.0	0	83
																																														1	0									2	2	0	0.0	2	84
																																										1	0													5	3	2	40.0	3	85
																5	2					1	0	1	0	1	0	1	0																											23	21	2	8.7	8	86
																										1	0																													6	6	0	0.0	3	87
		1	0	1	0			1	0			1	3			20	20			1	0	11	4			2	0	5	7	2	0	1	0							2	0	1	0	1	0	2	1	4	4	2	1			4	2	178	101	77	43.2	30	88
0	1	1	0	3	1	3	1							1	0	1	2							5	0	4	6	4	6	2	0	2	1	4	0	2	0	2	0					2	2	2	0	2	4							199	124	75	37.7	33	89
																		1	0							1	0											3	0	1	0							0	1	5	1	1	0			88	59	29	33.0	10	90
17		144		19		79		4		5		29		1		934		55		11		221		39		43		337		28		30		20		102		78		18		31		65		27		48		65		5		49		4807					91
15		132		17		76		3		4		26		1		806		51		6		207		38		31		303		27		28		19		102		77		17		31		61		20		37		59		4		42			4211				92
2		12		2		3		1		1		3		0		128		4		5		14		1		12		34		1		2		1		0		1		1		0		4		7		11		6		1		7				596			93
11.8		8.3		10.5		3.8		20.0		20.0		10.3		0.0		13.7		7.3		45.5		1.8		2.6		26.2		10.1		3.6		6.7		5.0		0.0		1.3		5.6		0.0		6.2		25.9		22.9		9.2		25.0		14.3					12.4		94
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

XAMINED BY STATE BOARDS DURING 1921

23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
																2	0																																							2	2	0	0.0	1	1
																																																								0	0	0	0.0	0	2
																																																		1	0					21	21	0	0.0	4	3
																																																		1	0			1	0	27	22	5	18.5	5	4
																																														1	0									11	8	3	27.3	3	5
																										2	0																													18	18	0	0.0	3	6
																																																								1	1	0	0.0	1	7
																																																								30	30	0	0.0	1	8
																1	0																																					1	0	14	14	0	0.0	3	9
																8	0																																							20	20	0	0.0	2	10
																2	0					2	0					1	0																											19	18	1	5.3	8	11
																4	1																							1	0			2	0			2	0					1	0	29	28	1	3.4	8	12
		3	0									4	0			4	4	1	1			0	1					7	1			1	0											2	0									1	1	48	34	14	29.2	14	13
																																2	0																							52	51	1	1.9	5	14
																																1	0																							21	21	0	0.0	3	15
								0	1																																							0	1							63	42	21	33.3	4	16
																																																								8	8	0	0.0	1	17
																						0	2													1	0									0	2			0	2			1	0	83	74	9	10.8	12	18
1	0			1	0																	1	0	2	0									4	0											3	0			5	0					87	83	4	4.6	18	19
		1	0	3	0					1	0					1	0			1	0			1	0									1	0											1	0			7	0			1	0	135	135	0	0.0	16	20
						1	0									1	0			0	1																													1	0					64	60	4	6.2	9	21
		1	0																									1	0											1	0															62	62	0	0.0	7	22
		1	0													1	0			1	0					1	0													1	0															52	52	0	0.0	9	23
		1	0																																											0	1									36	35	1	2.8	6	24
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1917 TO 1921, INCLUSIV

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	
		Alabama		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan		Minnesota	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	KENTUCKY																																												
25	University of Louisville Medical Department																	1	0			1	0	1	0	1	0	1	0			46	0												
	LOUISIANA																																												
26	Tulane University of Louisiana School of Med.	20	0			3	0									1	0	4	0															64	2										
	MAINE																																												
27	Bowdoin Medical School											4	0																							5	0							2	0
	MARYLAND																																												
28	Johns Hopkins University Medical Department							2	0			1	0							1	0																	60	0	2	0	1	0	3	0
29	Univ. of Md. School of Med. & Coll. of P. & S.							1	0			1	1	1	0																							54	1	3	3				
	MASSACHUSETTS																																												
30	Boston University School of Medicine																																			6	0			10	0				
31	College of Physicians and Surgeons, Boston															1	0																							5	11				
32	Harvard University Medical School							1	0			5	0															2	0							5	0	1	0	37	0			3	0
33	Middlesex College of Medicine and Surgery.—N.											3	0																											23	28				
34	Tufts College Medical School											6	0																							3	0			72	5				
	MICHIGAN																																												
35	Detroit College of Medicine and Surgery																																							1	0	53	0		
36	University of Michigan Medical School																																									73	0		
37	University of Michigan Homeo. Med. School.—H.																																									4	0		
	MINNESOTA																																												
38	University of Minnesota Medical School							2	0															1	0			1	0															77	0
	MISSOURI																																												
39	Kansas City College of Medicine and Surgery.—N.					11	5			0	3	11	1			0	1																												
40	Kansas City Univ. of Phys. and Surgs.—N.									2	0	1	1																			0	1							1	0				
41	St. Louis College of Physicians and Surgeons			0	3					5	4	32	2			0	1																							2	0				
42	St. Louis University School of Medicine			1	0			2	0									1	0			1	0	5	0			1	0	3	0														
43	Washington University School of Medicine							1	0															2	0					5	0													1	0
	NEBRASKA																																												
44	Creighton University College of Medicine																											1	0																
45	University of Nebraska College of Medicine																																												
	NEW YORK																																												
46	Albany Medical College																																												
47	Columbia University College of Phys. & Surgs.							2	0			4	0							1	0	1	0													2	0			4	0			2	0
48	Cornell University Medical College							1	0			1	0			1	0											1	0																
49	Fordham University School of Medicine											4	0																											1	0				
50	Long Island College Hospital											2	1																											1	0				
51	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.																							1	0																				
52	Syracuse University College of Medicine							1	0															0	1																				
53	University and Bellevue Hospital Med. Coll.											1	0					1	0																										
54	University of Buffalo Medical Department							1	1																																				
	OHIO																																												
55	Eclectic Medical College.—E.											2	0													1	0					1	0												
56	Ohio State University College of Medicine																							1	0																				
57	Ohio State University Coll. of Homeo. Med.—H.																									1	0	1	0			1	0												
58	University of Cincinnati College of Medicine							2	1																	1	0																		
59	Western Reserve University School of Medicine																													1	0														
	OKLAHOMA																																												
60	University of Oklahoma School of Medicine																					1	0											1	0										
	OREGON																																												
61	University of Oregon Medical School							2	0																																				
	PENNSYLVANIA																																												
62	Hahnemann Medical College and Hospital.—H.											1	0			0	1																							1	0				
63	Jefferson Medical College	1	0					1	0			3	0	2	0	1	0	1	0	2	0			0	1	2	0			1	0	1	0					1	1	2	0				
64	Temple University School of Medicine											0	1	3	0	0	1																			1	0	1	0						
65	University of Pennsylvania School of Medicine	1	0	1	0			3	0	2	0			2	0	1	0			1	0	1	0	1	0											1	0			1	0			4	0
66	University of Pittsburgh School of Medicine																																									1	0		
67	Woman's Medical College of Pennsylvania											2	0																																
	SOUTH CAROLINA																																												
68	Medical College of the State of South Carolina																																												
	TENNESSEE																																												
69	Meharry Medical College	1	1			3	0													1	0			1	5							0	1	2	3			1	0	0	1				
70	University of Tennessee College of Medicine					8	0																																					1	0
71	University of West Tennessee Medical Department									0	2																																		
72	Vanderbilt University School of Medicine	4	0			1	0	1	0									2	0					1	0	1	0					1	0	3	0					1	0				
	TEXAS																																												
73	Baylor University College of Medicine											0	1																													1	0		
74	University of Texas School of Medicine							2	0																					1	0														
	VERMONT																																												
75	University of Vermont College of Medicine											5	1															1	0											4	0			1	0
	VIRGINIA																																												
76	Medical College of Virginia											2	0											1	0													0	1						
77	University of Virginia School of Medicine	1	0																					1	0													1	0						
	WISCONSIN																																												
78	Marquette University School of Medicine																							2	0															1	0				
	CANADA																																												
79	Dalhousie University Faculty of Medicine																																												
80	Laval University Faculty of Medicine																																			1	0			1	4				
81	McGill University Faculty of Medicine							1	0			1	0																							1	0					3	0	1	0
82	Queen's University Faculty of Medicine																																												
83	University of Alberta Faculty of Medicine																																												
84	University of Manitoba Faculty of Medicine																																												
85	University of Montreal Medical Faculty																																			2	1								
86	University of Toronto Faculty of Medicine																																									3	0	1	0
87	Western University Medical School																																									3	0	2	0
88	Foreign Colleges							0	1	0	1	2	3			1	0							1	1											1	0	0	2	6	2	2	0	3	0
89	Miscellaneous Medical Colleges									1	0	2	0											1	0																	3	0		
90	Undergraduates and Osteopaths																																												
91	Totals by States	34		7		32		149		35		121		8		47		17		63		7		370		65		57		45		54		77		30		128		243		161		103	
92	Totals — Examined — Passed	33		3		27		141		25		108		8		38		17		36		7		338		65		57		45		51		71		29		122		185		159		103	
93	Totals — Examined — Failed	1		4		5		8		10		13		0		9		0		0		0		32		0		0		0		3		6		1		6		58		2		0	
94	Percentage of Failures	2.9		57.1		15.6		5.4		28.6		10.7		0.0		19.1		0.0		0.0		0.0		86.5		0.0		0.0		0.0		5.6		7.8		3.3		4.7		23.9		1.2		0.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

H. = Homeopathic· E = Eclectic; N = Nondescript: P = Passed; F = Failed.

23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							
Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
		1	0	1	0																	1	0															1	0					1	0			2	0							58	58	0	0.0	12	25
8	1															4	0	4	0																	4	0	5	0					1	0											121	118	3	2.5	11	26
		0	1													1	0											1	0	1	0																									15	14	1	6.7	7	27
																10	0					5	0					1	0							1	0	1	0					2	0	2	0	2	0	2	0					96	96	0	0.0	16	28
				1	0											9	1	1	0									1	0	1	0	1	0											2	0			4	0					3	0	89	83	6	6.7	14	29
																2	1											1	0			1	0											1	0											22	21	1	4.5	6	30
																																																								17	6	11	64.7	2	31
		2	0													16	1					3	0					4	0	3	0									1	0			2	0					3	0			1	0	90	89	1	1.1	16	32
																														1	0																									55	27	28	50.9	3	33
		1	0							1	0					5	4											1	0	8	0																									106	97	9	8.5	8	34
																1	1																																					1	0	57	56	1	1.8	4	35
																8	2											3	0																											86	84	2	2.3	3	36
																																																								4	4	0	0.0	1	37
				1	0															2	0																																			84	84	0	0.0	6	38
																								2	0																															34	20	10	29.4	6	39
																																																								6	4	2	33.3	4	40
		5	5			1	0																	3	0															1	0									1	0	0	1			66	50	16	24.2	11	41
		59	0	2	0											3	0					1	0																							1	0			1	0			1	0	82	82	0	0.0	14	42
		31	0													1	0	1	0					2	0											1	0																	1	0	46	46	0	0.0	10	43
				2	0	20	2																			0	1													0	1					1	0									28	24	4	14.3	6	44
						46	0									1	1																							1	0													1	0	50	49	1	2.0	2	45
																18	0																																							18	18	0	0.0	1	46
		1	0									1	0			132	5											1	0							2	0	1	0	1	0									1	0					161	156	5	3.1	15	47
																41	1																																							46	45	1	2.2	5	48
																68	9													1	0																									83	74	9	10.8	4	49
																84	1											1	0																											90	88	2	2.2	5	50
																51	7																																							59	52	7	11.9	2	51
																28	0																																							30	29	1	100.0	3	52
																114	2											2	0																					1	0			1	0	122	120	2	1.6	5	53
																61	6											1	0																											70	63	7	9.9	4	54
						1	0									7	0					27	2																																	41	39	2	4.0	6	55
		1	0																			36	0																																	38	38	0	0.0	3	56
																						7	0																																	10	10	0	0.0	4	57
																						50	0																									4	0			1	0			59	58	1	1.7	5	58
																						38	0	1	0			1	0			1	0							3	0							1	0							46	46	0	0.0	7	59
																								18	0																															20	20	0	0.0	3	60
																1	1									13	3																			2	0					1	0			23	19	4	17.4	5	61
		1	0									6	0			3	1					2	0					23	0																											39	37	2	5.1	8	62
		7	0			2	0					6	0			7	3	23	0			4	0	1	0			90	4	1	0	3	0			3	0			2	0			2	0	1	0	8	0					4	0	191	182	9	4.7	29	63
												1	0									1	1			1	0	27	10																			2	0							50	37	13	26.0	10	64
2	0	1	0							1	0	6	0			7	6	12	0	0	1	1	0	1	0			70	1			3	0			1	0	2	0	2	0			2	0			1	0					3	0	142	134	8	5.6	29	65
																4	0					4	0					30	0																									1	0	40	40	0	0.0	5	66
		1	0													3	1	3	0			3	0					6	0																											19	18	1	5.3	6	67
																																9	0													1	0									10	10	0	0.0	2	68
1	0	5	6															0	2			4	4													29	0	2	1																	74	50	24	32.4	14	69
2	0																																			18	0	1	0									2	0	1	0			1	0	34	34	0	0.0	8	70
																								0	1																															3	0	3	100.0	2	71
																3	4															1	0			38	0							1	0											62	58	4	6.5	13	72
				1	0											6	3																					30	0																	42	38	4	9.5	5	73
																1	0											3	0									27	0															1	0	35	35	0	0.0	6	74
																11	0																									28	0													51	50	1	2.0	6	75
				0	1													4	1			1	0																					28	1			1	0					1	0	42	38	4	9.5	9	76
																2	0	1	0																	1	0							12	0			1	0							20	20	0	0.0	8	77
																																																		26	0					29	29	0	0.0	3	78
																																																								0	0	0	0.0	0	79
																														1	1																									8	3	5	62.5	2	80
																7	3			0	1	1	0																																	19	15	4	21.1	8	81
																5	2																																							7	5	2	28.6	1	82
																																																								0	0	0	0.0	0	83
																																																								0	0	0	0.0	0	84
																																																								3	2	1	33.3	1	85
																4	2					1	0					1	0																											12	10	2	16.7	5	86
																																																								5	5	0	0.0	2	87
												1	0			7	6			1	0	4	3					2	4											1	0	1	0			0	1	2	2	1	1			3	0	66	39	27	40.6	20	88
						0	1																					2	0									1	0									1	0							12	11	1	8.3	7	89
																																																								0	0	0	0.0	0	90
15		135		13		74		1		3		25		0		839		54		8		210		32		21		301		18		23		5		99		72		16		29		59		17		36		55		3		30		4046	....	....	....	...	91
14		123		12		71		0		3		25		0		760		50		5		197		31		17		281		17		23		5		99		71		15		29		58		13		33		52		2		29		....	3730	....	....	...	92
1		12		1		3		1		0		0		0		79		4		3		13		1		4		20		1		0		0		0		1		1		0		1		4		3		3		1		1		....	....	316	....	...	93
6.7		8.9		7.7		4.1		100.0		0.0		0.0		0.0		9.4		7.4		37.5		6.2		3.1		19.0		6.6		6.7		0.0		0.0		0.0		1.4		6.3		0.0		1.7		23.5		8.3		5.5		40.0		3.3		....	....	....	7.8	...	94
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE C—GRADUATES EXAMINE

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1917-1921					Graduates of 1916 and Previous					Graduates of 1921				
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States
	ALABAMA																				
1	University of Alabama School of Medicine	6	4	2	33.3	2	2	2	0	0.0	1	4	2	2	50.0	3	0	0	0	0.0	0
	ARKANSAS																				
2	University of Arkansas Medical Department	2	2	0	0.0	1	0	0	0	0.0	0	2	2	0	0.0	1	0	0	0	0.0	0
	CALIFORNIA																				
3	College of Medical Evangelists	26	24	2	7.7	6	21	21	0	0.0	4	5	3	2	40.0	2	72	72	0	0.0	3
4	College of Physicians and Surgeons, Los Angeles	27	22	5	18.5	5	27	22	5	18.5	5	0	0	0	0.0	0	17	17	0	0.0	3
5	College of Physicians and Surgs., San Francisco	11	8	3	27.3	3	11	8	3	27.3	3	0	0	0	0.0	0	6	6	0	0.0	2
6	Stanford University School of Medicine	18	18	0	0.0	3	18	18	0	0.0	3	0	0	0	0.0	0	15	15	0	0.0	2
7	Oakland College of Medicine and Surgery	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	0	0	0	0.0	0
8	University of California Medical School	31	31	0	0.0	2	30	30	0	0.0	1	1	1	0	0.0	1	29	29	0	0.0	1
	COLORADO																				
9	University of Colorado School of Medicine	15	14	1	6.7	3	14	14	0	0.0	3	1	0	1	100.0	1	13	13	0	0.0	2
	CONNECTICUT																				
10	Yale University School of Medicine	22	22	0	0.0	4	20	20	0	0.0	2	2	2	0	0.0	2	14	14	0	0.0	2
	DISTRICT OF COLUMBIA																				
11	Georgetown University School of Medicine	24	22	2	8.3	11	19	18	1	5.3	8	5	4	1	20.0	3	11	11	0	0.0	4
12	George Washington University Medical School	32	31	1	3.1	10	29	28	1	3.4	8	3	3	0	0.0	3	23	23	0	0.0	7
13	Howard University School of Medicine	52	37	15	28.9	14	48	34	14	29.2	14	4	3	1	25.0	2	16	13	3	18.7	8
	GEORGIA																				
14	Emory University School of Medicine	52	51	1	1.9	5	52	51	1	1.9	5	0	0	0	0.0	0	49	49	0	0.0	4
15	University of Georgia Medical Department	26	22	4	15.4	3	21	21	0	0.0	3	5	1	4	80.0	1	21	21	0	0.0	3
	ILLINOIS																				
16	Chicago Medical School	67	43	24	35.8	7	63	42	21	33.4	4	4	1	3	75.0	4	53	37	16	30.2	1
17	Hahnemann Medical College and Hospital—H.	13	9	4	30.8	4	8	8	0	0.0	1	5	1	4	80.0	4	8	8	0	0.0	1
18	Loyola University School of Medicine	87	77	10	11.5	12	83	74	9	10.8	12	4	3	1	25.0	3	65	65	0	0.0	1
19	Northwestern University Medical School	90	86	4	4.4	18	87	83	4	4.6	18	3	3	0	0.0	3	74	70	4	5.4	12
20	Rush Medical College (University of Chicago)	148	145	3	2.1	21	135	135	0	0.0	16	13	10	3	23.1	10	118	118	0	0.0	12
21	University of Illinois College of Medicine	71	64	7	9.9	14	64	60	4	6.2	9	7	4	3	42.9	6	57	55	2	3.5	4
	INDIANA																				
22	Indiana University School of Medicine	63	63	0	0.0	8	62	62	0	0.0	7	1	1	0	0.0	1	2	2	0	0.0	2
	IOWA																				
23	State University of Iowa College of Medicine	54	53	1	1.9	9	52	52	0	0.0	9	2	1	1	50.0	2	2	2	0	0.0	3
	KANSAS																				
24	University of Kansas School of Medicine	37	36	1	2.7	7	36	35	1	2.8	6	1	1	0	0.0	1	34	34	0	0.0	4
	KENTUCKY																				
25	University of Louisville Medical Department	72	66	6	8.3	18	58	58	0	0.0	12	14	8	6	42.8	8	56	56	0	0.0	11
	LOUISIANA																				
26	Tulane University of Louisiana School of Med.	125	121	4	3.2	12	121	118	3	2.5	11	4	3	1	25.0	4	107	104	3	2.8	11
	MAINE																				
27	Bowdoin Medical School	15	14	1	6.7	7	15	14	1	6.7	7	0	0	0	0.0	0	10	9	1	10.0	5
	MARYLAND																				
28	Johns Hopkins University Medical Department	104	104	0	0.0	17	96	96	0	0.0	16	8	8	0	0.0	5	10	10	0	0.0	5
29	Univ. of Md. School of Med. & Coll. of P. & S.	95	88	7	7.4	16	89	93	0	6.7	14	6	5	1	16.7	4	18	15	3	16.7	8
	MASSACHUSETTS																				
30	Boston University School of Medicine	25	23	2	8.0	8	22	21	1	4.5	6	3	2	1	33.3	3	61	60	1	1.6	5
31	College of Physicians and Surgeons, Boston	25	10	15	60.0	6	17	6	11	64.7	2	8	4	4	50.0	6	55	54	1	1.8	3
32	Harvard University Medical School	112	108	4	3.6	19	90	89	1	1.1	16	22	19	3	13.6	12	54	54	0	0.0	10
33	Middlesex College of Medicine and Surgery.—N.	55	27	28	50.9	3	55	27	28	50.9	3	0	0	0	0.0	0	22	15	7	31.8	1
34	Tufts College Medical School	118	102	16	13.6	9	106	97	9	8.5	8	2	5	7	58.3	5	77	73	4	5.2	6
	MICHIGAN																				
35	Detroit College of Medicine and Surgery	58	57	1	1.7	4	57	56	1	1.8	4	1	1	0	0.0	1	55	55	0	0.0	3
36	University of Michigan Medical School	96	90	6	6.2	8	86	84	2	2.3	3	10	6	4	40.0	8	75	75	0	0.0	2
37	University of Michigan Homeo. Med. School.—H.	5	5	0	0.0	1	4	4	0	0.0	1	1	1	0	0.0	1	4	4	0	0.0	1
	MINNESOTA																				
38	University of Minnesota Medical School	84	84	0	0.0	6	84	84	0	0.0	6	0	0	0	0.0	0	51	51	0	0.0	4
	MISSOURI																				
39	Kansas City College of Medicine and Surgery.—N.	37	26	11	29.7	7	34	24	10	29.4	6	3	2	1	33.3	3	20	12	8	40.0	3
40	Kansas City Univ. of Phys. and Surgs.—N.	6	4	2	33.3	5	6	4	2	33.3	4	0	0	0	0.0	0	5	4	1	20.0	3
41	St. Louis College of Physicians and Surgeons	73	54	19	26.0	16	66	50	16	24.2	10	7	4	3	42.9	6	28	26	2	7.1	4
42	St. Louis University School of Medicine	86	86	0	0.0	15	82	82	0	0.0	14	4	4	0	0.0	2	72	72	0	0.0	7
43	Washington University School of Medicine	49	48	1	2.0	12	46	46	0	0.0	10	3	2	1	33.3	3	33	33	0	0.0	6
	NEBRASKA																				
44	Creighton University College of Medicine	31	26	5	16.1	8	28	24	4	14.3	6	3	2	1	33.3	3	24	20	4	16.7	3
45	University of Nebraska College of Medicine	50	49	1	2.0	4	50	49	1	2.0	4	0	0	0	0.0	0	47	47	0	0.0	2
	NEW YORK																				
46	Albany Medical College	22	20	2	9.1	2	18	18	0	0.0	1	4	2	2	50.0	2	17	17	0	0.0	1
47	Columbia University College of Phys. & Surgs.	177	170	7	4.0	19	161	156	5	3.1	15	16	14	2	12.5	9	101	99	2	2.0	5
48	Cornell University Medical College	50	49	1	2.0	7	46	45	1	2.2	5	4	4	0	0.0	2	36	35	1	2.8	1
49	Fordham University School of Medicine	85	74	11	12.9	4	83	74	9	10.8	4	2	0	2	100.0	2	67	59	8	11.9	2
50	Long Island College Hospital	93	90	3	3.2	7	90	88	2	2.2	5	3	2	1	33.3	2	78	76	2	2.6	3
51	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	72	59	13	17.9	4	59	52	7	11.9	2	13	7	6	46.2	4	39	37	2	5.1	1
52	Syracuse University College of Medicine	30	29	1	3.3	3	30	29	1	3.3	3	0	0	0	0.0	0	26	25	1	3.8	2
53	University and Bellevue Hospital Med. Coll.	127	123	4	3.2	7	122	120	2	1.6	5	5	3	2	40.0	3	100	100	0	0.0	3
54	University of Buffalo Medical Department	72	65	7	9.7	3	70	63	7	9.9	4	2	2	0	0.0	1	59	57	2	3.4	1
	OHIO																				
55	Eclectic Medical College.—E.	47	40	7	14.9	9	41	39	2	4.0	6	6	1	5	83.3	3	38	36	2	5.3	5
56	Ohio State University College of Medicine	38	38	0	0.0	3	38	38	0	0.0	3	0	0	0	0.0	0	36	36	0	0.0	2
57	Ohio State University Coll. of Homeo. Med.—H.	10	10	0	0.0	4	10	10	0	0.0	4	0	0	0	0.0	0	9	9	0	0.0	3
58	University of Cincinnati College of Medicine	59	58	1	1.7	5	59	58	1	1.7	5	0	0	0	0.0	0	58	57	1	1.7	5
59	Western Reserve University School of Medicine	46	46	0	0.0	7	46	46	0	0.0	7	0	0	0	0.0	0	38	38	0	0.0	4
	OKLAHOMA																				
60	University of Oklahoma School of Medicine	20	20	0	0.0	3	20	20	0	0.0	3	0	0	0	0.0	0	17	17	0	0.0	1
	OREGON																				
61	University of Oregon Medical School	24	20	4	16.7	5	23	19	4	17.4	5	1	1	0	0.0	1	15	12	3	20.0	2
	PENNSYLVANIA																				
62	Hahnemann Medical College and Hospital.—H.	40	37	3	7.5	9	39	37	2	5.1	8	1	0	1	100.0	1	3	3	0	0.0	3
63	Jefferson Medical College	209	193	16	7.7	29	191	182	9	4.7	29	18	11	7	38.9	8	55	52	3	5.5	16
64	Temple University School of Medicine	50	37	13	26.0	9	50	37	13	26.0	9	0	0	0	0.0	0	3	3	0	0.0	2
65	University of Pennsylvania School of Medicine	150	142	8	5.3	31	142	134	8	5.6	29	8	8	0	0.0	7	25	25	0	0.0	12
66	University of Pittsburgh School of Medicine	45	45	0	0.0	8	40	40	0	0.0	5	5	5	0	0.0	4	2	2	0	0.0	1
67	Woman's Medical College of Pennsylvania	24	22	2	8.3	9	19	18	1	5.3	6	5	4	1	20.0	4	5	5	0	0.0	3

H. = Homeopathic; E. = Eclectic; N. = Nondescript.

NAME OF COLLEGE	Graduates of All Years					Graduates of 1917-1921					Graduates of 1916 and Previous					Graduates of 1921					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
SOUTH CAROLINA																					
Medical College of the State of South Carolina...	12	12	0	0.0	4	10	10	0	0.0	2	2	2	0	0.0	2	9	9	0	0.0	1	68
TENNESSEE																					
Meharry Medical College	105	57	48	45.7	19	74	50	24	32.4	14	31	7	24	77.4	11	54	47	7	13.0	12	69
University of Tennessee College of Medicine	36	35	1	2.8	9	34	34	0	0.0	8	2	1	1	50.0	2	28	28	0	0.0	5	70
University of West Tennessee Medical Department	4	0	4	100.0	3	3	0	3	100.0	2	1	0	1	50.0	1	2	0	2	100.0	2	71
Vanderbilt University School of Medicine	73	67	6	8.2	19	62	58	4	6.5	13	11	9	2	18.2	7	46	46	0	0.0	7	72
TEXAS																					
Baylor University College of Medicine	42	38	4	9.5	5	42	38	4	9.5	5	0	0	0	0.0	0	36	34	2	5.6	2	73
University of Texas School of Medicine	35	35	0	0.0	6	35	35	0	0.0	6	0	0	0	0.0	0	27	27	0	0.0	1	74
VERMONT																					
University of Vermont College of Medicine	59	55	4	6.8	6	51	50	1	2.0	6	8	5	3	37.5	4	33	33	0	0.0	4	75
VIRGINIA																					
Medical College of Virginia	46	41	5	10.9	11	42	38	4	9.5	9	4	3	1	25.0	3	33	32	1	3.0	3	76
University of Virginia School of Medicine	22	22	0	0.0	10	20	20	0	0.0	8	2	2	0	0.0	2	12	12	0	0.0	4	77
WISCONSIN																					
Marquette University School of Medicine	31	31	0	0.0	5	29	29	0	0.0	3	2	2	0	0.0	2	26	26	0	0.0	1	78
CANADA																					
Dalhousie University Faculty of Medicine	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	79
Laval University Faculty of Medicine	11	3	8	72.7	3	8	3	5	62.5	2	3	0	3	100.0	2	0	0	0	0.0	0	80
McGill University Faculty of Medicine	30	25	5	16.7	10	19	15	4	21.1	8	11	10	1	9.1	7	3	3	0	0.0	3	81
Queen's University Faculty of Medicine	13	10	3	23.1	5	7	5	2	28.6	1	6	5	1	16.7	5	2	2	0	0.0	1	82
University of Alberta Faculty of Medicine	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	83
University of Manitoba Faculty of Medicine	2	2	0	0.0	2	0	0	0	0.0	0	2	2	0	0.0	2	0	0	0	0.0	0	84
University of Montreal Medical Faculty	5	3	2	40.0	3	3	2	1	33.3	1	2	1	1	50.0	2	0	0	0	0.0	0	85
University of Toronto Faculty of Medicine	23	21	2	8.7	8	12	10	2	16.7	5	11	11	0	0.0	6	1	1	0	0.0	1	86
Western University Medical School	6	6	0	0.0	3	5	5	0	0.0	2	1	1	0	0.0	2	0	0	0	0.0	0	87
Foreign Colleges	178	101	77	43.2	30	66	39	27	40.6	20	112	62	50	44.6	27	7	4	3	42.9	6	88
Miscellaneous Medical Colleges	199	124	75	37.7	33	12	11	1	8.3	7	187	113	74	39.6	34	0	0	0	0.0	0	89
Undergraduates and Osteopaths	88	59	29	33.0	10	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	90
Totals by States	4807	....	....	....	..	4046	....	...	....	..	673	...	..	....	..	2730	....	...	....	..	91
Totals — Examined — Passed	....	4211	....	....	..	....	3730	...	....	..	...	422	..	....	..	....	2628	..	....	..	92
Totals — Examined — Failed	....	....	596	....	..	....	....	316	....	..	...	...	251	....	..	....	....	102	....	..	93
Percentage of Failures	....	....	....	12.4	..	....	....	...	7.8	..	...	...	..	37.3	..	....	....	...	3.7	..	94

(CONTINUED FROM PAGE 1297)

Oregon and Rhode Island, see Table G) examined the largest number of old practitioners.

Graduates of 1921 Examined During 1921

Table C also gives the results for the graduates of 1921 who were examined during the year by the state boards, and shows that 2,730, or 56.8 per cent. of all candidates examined during the year, graduated in 1921, including 6 who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 3,192 students last year; therefore, 85.3 per cent. of all graduated in 1921 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 14.7 per cent. Of the 1921 graduates examined, 102, or 3.7 per cent., failed, as compared with 7.2 per cent. in 1920, 4.2 per cent. in 1919, 5.5 per cent. in 1918 and 5.7 per cent. in 1917.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing"; some give them as "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education and Hospitals.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 63 medical colleges now having complete recognition in all states. There are 7 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 18 colleges, he will find on graduation that his diploma is not recognized in from 4 to 46 states.

Without the information published in Table D, these state board statistics would be not only incomplete—they would be actually misleading. For example, 67 graduates of the Chicago Medical School were examined in 1921. Of these 43 passed and 24, or 35.8 per cent., failed. Note, however, that all these candidates were examined in 5 states, while graduates of this school are reported as not admitted to the examinations for licensure in 44 states!

Since last year, Kansas, Utah, Washington and West Virginia have enlarged the lists of colleges not recognized. During the nine years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3, 61.3, 67.8, 71.6 and 71.6. This indicates an improvement in the medical colleges. Of the 50 states—counting in Alaska and the District of Columbia—45 state licensing boards, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other five states, however, this table indicates either that the practice acts do not give the boards authority to enforce reasonable standards, or that the boards are not exercising that authority. Wyoming reports three colleges not recognized, Arizona and Nevada each report one, while Massachusetts and the District of Columbia do not report any as not in good standing. It is evident that if the graduates of low standard medical colleges are not eligible for license in the majority of states, they will flock to these five which still grant liberal recognition. The following

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards	63
Not recognized by 1 or 2 state boards	7
Not recognized by 4 to 19 state boards	9
Not recognized by 42 to 46 state boards	9
Total	88

(CONTINUED ON PAGE 1308)

TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine.

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

Marginal Number	COLLEGE	Classification by Council on Medical Education †	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Reported Non-Recognition by State Licensing Boards			Marginal Number
			Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Colum.	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	
1	Albany Medical College	A																																																			50	....	100	1
2	Baylor University School of Medicine	A																																																			50	....	100	2
3	Boston University School of Medicine	A																																																			50	....	100	3
4	Bowdoin Medical School	A																																																			50	....	100	4
5	Chicago Medical School¹	C	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		5	45	10	5
6	College of Medical Evangelists	B	x			x				x		x			x			x	x									x			x	x		x	x		x			x	x	x		x				x	x	x			30	20	60	6
7	College of Physicians and Surgeons, Boston	C	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		5	45	10	7
8	College of Physicians and Surgeons, Los Angeles	B	x			x				x		x						x	x					x				x			x	x		x	x		x			x	x	x		x				x		x			31	19	62	8
9	College of Physicians and Surgeons, San Francisco²	C	x	x	x	x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		6	44	12	9
10	Columbia University College of Physicians and Surg.	A																																																			50	....	100	10
11	Cornell University Medical College	A																																																			50	....	100	11
12	Dartmouth Medical School*	A																																																			50	....	100	12
13	Detroit College of Medicine and Surgery	A																																																			50	....	100	13
14	Eclectic Medical College	B	x							x								x										x			x				x						x	x						x		x			40	10	80	14
15	Emory University Medical College	A																																																			50	....	100	15
16	Fordham University School of Medicine	A																																																			50	....	100	16
17	Georgetown University School of Medicine	A																																																			50	....	100	17
18	George Washington University Medical School	A																																																			50	....	100	18
19	Hahnemann Medical College and Hospital, Chicago	B	x							x								x										x			x				x						x	x						x		x			40	10	80	19
20	Hahnemann Med. College and Hospital, Philadelphia	A																																																			50	....	100	20
21	Harvard University Medical School	A																																																			50	....	100	21
22	Howard University School of Medicine	A																																																			50	....	100	22
23	Indiana University School of Medicine	A																																																			50	....	100	23
24	Jefferson Medical College	A																																																			50	....	100	24
25	Creighton University College of Medicine	A																																																			50	....	100	25
26	Johns Hopkins University Medical Department	A																																																			50	....	100	26
27	Kansas City College of Medicine and Surgery³	3	x			x	x	x		x			x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	8	42	16	27
28	Kansas City University of Physicians and Surgeons⁴	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	28
29	Stanford University School of Medicine	A																																																			50	....	100	29
30	Long Island College Hospital	A																																																			50	....	100	30
31	Loyola University Medical Department	A																	x													x		x																	x		46	4	92	31
32	Marquette University School of Medicine	A																																																			50	....	100	32
33	Medical College of the State of South Carolina	A																																																			50	....	100	33
34	Medical College of Virginia	A																																																			50	....	100	34
35	Meharry Medical College	B	x			x				x		x						x										x			x	x		x	x					x	x	x						x					36	14	72	35
36	Middlesex College of Medicine and Surgery	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		4	46	8	36
37	New York Homeo. Med. College and Flower Hospital	B	x															x										x			x				x						x	x		x				x					41	9	82	37
38	Northwestern University Medical School	A																																																			50	....	100	38
39	Oakland College of Medicine and Surgery²	C	x	x	x	x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		6	44	12	39

40	Ohio State Univ. College of Homeopathic Medicine	B	x							x		x						x										x			x				x						x	x		x				x					39	11	78	40
41	Ohio State University College of Medicine	A																																																	50	....	100	41
42	Rush Medical College (University of Chicago)	A																																																	50	....	100	42
43	St. Louis College of Physicians and Surgeons	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		3	47	6	43
44	St. Louis University School of Medicine	A																																																	50	....	100	44
45	State University of Iowa College of Medicine	A																																																	50	....	100	45
46	Syracuse University College of Medicine	A																																																	50	....	100	46
47	Temple University School of Medicine	B	x			x						x			x			x										x			x	x		x	x						x	x		x				x					36	14	72	47
48	Tufts College Medical School	A																																						x													49	1	98	48
49	Tulane University School of Medicine	A																																																	50	....	100	49
50	University and Bellevue Hospital Medical College	A																																																	50	....	100	50
51	University of Alabama School of Medicine*	A																																																	50	....	100	51
52	University of Arkansas Medical Department*	A																																						x													49	1	98	52
53	University of California Medical School	A																																																	50	....	100	53
54	University of Cincinnati Medical College	A																																																	50	....	100	54
55	University of Colorado School of Medicine	A																																																	50	....	100	55
56	University of Georgia Medical Department	A																																																	50	....	100	56
57	University of Illinois College of Medicine	A																																																	50	....	100	57
58	University of Kansas School of Medicine	A																																						x													49	1	98	58
59	University of Louisville Medical Department	A																																																	50	....	100	59
60	Univ. of Md. School of Med. and Coll. of P. and S.	A																																																	50	....	100	60
61	University of Michigan Medical School	A																																																	50	....	100	61
62	University of Michigan Homeopathic Med. School	A																																																	50	....	100	62
63	University of Minnesota Medical School	A																																																	50	....	100	63
64	University of Mississippi Department of Medicine*	A																																																	50	....	100	64
65	University of Missouri School of Medicine*	A																																						x													49	1	98	65
66	University of Nebraska College of Medicine	A																																																	50	....	100	66
67	University of Buffalo Medical Department	A																																																	50	....	100	67
68	University of North Carolina School of Medicine*	A																																																	50	....	100	68
69	University of North Dakota School of Medicine*	A																																																	50	....	100	69
70	University of Oklahoma School of Medicine	A																																																	50	....	100	70
71	University of Oregon Medical Department	A																																																	50	....	100	71
72	University of Pennsylvania School of Medicine	A																																																	50	....	100	72
73	University of Pittsburgh School of Medicine	A																																																	50	....	100	73
74	University of South Dakota College of Medicine*	A																																						x													49	1	98	74
75	University of Tennessee College of Medicine	A																																																	50	...	100	75
76	University of West Tennessee Medical Department	C	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	46	8	76
77	University of Texas School of Medicine	A																																																	50	....	100	77
78	University of Utah School of Medicine*	A																																						x													49	1	98	78
79	University of Vermont College of Medicine	A																																																	50	...	100	79
80	University of Virginia School of Medicine	A																																																	50	....	100	80
81	University of Wisconsin Medical School*	A																																																	50	....	100	81
82	Vanderbilt University School of Medicine	A																																																	50	....	100	82
83	Wake Forest College School of Medicine*	A																																																	50	....	100	83
84	Washington University Medical School	A																																																	50	....	100	84
85	Western Reserve University School of Medicine	A																																																	50	....	100	85
86	West Virginia University School of Medicine	A																																						x													49	1	98	86
87	Woman's Medical College of Pennsylvania	A																																																	50	....	100	87
88	Yale University School of Medicine	A																																																	50	....	100	88
	Number of Medical Colleges reported not recognized	......	17	8	1	13	6	9	8	15	..	13	9	9	10	7	9	17	12	9	9	9	..	9	9	9	9	17	9	1	17	13	9	14	17	9	11	9	9	19	17	17	9	14	9	8	9	17	10	13	10	3				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* Eleven medical colleges give only the first two years of the medical course.

† Classification revised to April 15, 1922.

1. Formerly the Chicago Hospital College of Medicine. Has advertised also under the name of "Fort Dearborn Hospital School."

2. Suspended medical teaching in 1918, but retained a nominal existence until 1921 in order to grant degrees to the three remaining classes which are completing their medical instruction elsewhere.

3. This college claims to be an eclectic college, but is reported as not recognized by the National Eclectic Medical Association. It is an offshoot of the Eclectic Medical University, an institution which during its existence was rated in Class C. The new college has refused inspection. It is reported as not recognized by the Missouri State Board of Health.

4. Formerly the Central College of Osteopathy; in 1917 become the Central College Medical Department; present title in 1918. Reported not recognized as a medical school by the Missouri State Board of Health.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

(CONTINUED FROM PAGE 1305)

states, therefore—Arizona, Massachusetts, Nevada, Wyoming and the District of Columbia—will remain the dumping grounds for the output of low grade medical colleges until the licensing boards obtain the needed authority, and until they take action in the matter.

It is reported that no examinations were held during the year by the Arkansas Homeopathic Board. There is now only one remaining eclectic college in the United States and there are no homeopathic colleges in or near Arkansas. It is evident, therefore, that very few if any candidates applied for examination before these boards.

The Arkansas eclectic board still examines the graduates of the Kansas City College of Medicine and Surgery, a nominally eclectic affair which is not recognized in its home state, Missouri. This board, however, is not authorized nor does it pretend to examine other than graduates of eclectic colleges. In Connecticut, however, during 1921 the eclectic board of medical examiners licensed by examination 71 applicants, only 25 of whom were graduates of eclectic colleges. Of the 42 other applicants examined, only 2 were graduates of medical schools which are recognized by the regular board of medical examiners. It is interesting to note, also, that of these regular applicants 30 claimed graduation from the St. Louis College of Physicians and Surgeons, an institution also not recognized in Missouri, its home state. It appears, therefore, that graduates who are not eligible to take the Connecticut regular medical board's examination need only apply to the eclectic board and be accepted. Furthermore, the list of those registered contains the names of some, the authenticity of whose credentials is very much in doubt.

Study of Totals and Percentages

A study of totals and percentages (see Table 2) as compared with previous years is of interest. The number exam-

TABLE 2.—RESULTS FOR THIS AND PREVIOUS YEARS

	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript			
Year	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Registered without Written Examination	Total Registered
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	......	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	......	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	......	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	671	37.4	88	33.0	2137	6348

TABLE E.—COLLEGES HAVING FIFTY OR MORE EXAMINED

	Graduates of All Years					Graduates of 1917-1921					Graduates of 1916 and Previous					Graduates of 1921					
COLLEGE	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	Marginal No., Table A
Jefferson Medical College of Philadelphia.........	209	193	16	7.7	29	191	182	9	4.7	29	18	11	7	38.9	8	55	52	3	5.5	16	63
Columbia University College of Phys. and Surgs.	177	170	7	4.0	19	161	156	5	3.1	15	16	14	2	12.5	9	101	99	2	2.0	5	47
University of Pennsylvania School of Medicine..	150	142	8	5.3	31	142	134	8	5.6	29	8	8	0	0.0	7	24	24	0	0.0	11	65
Rush Medical College (University of Chicago)...	148	145	3	2.1	21	135	135	0	0.0	16	13	10	3	23.1	10	118	118	0	0.0	12	20
University and Bellevue Hosp. Med. College......	127	123	4	3.2	7	122	120	2	1.6	5	5	3	2	40.0	3	100	100	0	0.0	3	53
Tulane University of Louisiana School of Med. ..	125	121	4	3.2	12	121	118	3	2.5	11	4	3	1	25.0	4	107	104	3	2.8	11	26
Tufts College Medical School....................	118	102	16	13.6	9	106	97	9	8.5	8	12	5	7	58.3	5	77	73	4	5.2	6	34
Harvard University Medical School...............	112	108	4	3.6	19	90	89	1	1.1	16	22	19	3	13.6	12	54	54	0	0.0	10	32
Meharry Medical College..........................	105	57	48	45.7	19	74	50	24	32.4	14	31	7	24	77.4	11	54	47	7	13.0	12	69
Johns Hopkins University Medical Department..	104	104	0	0.0	17	96	96	0	0.0	16	8	8	0	0.0	5	10	10	0	0.0	5	28
University of Michigan Medical School...........	96	90	6	6.2	8	86	84	2	2.3	3	10	6	4	40.0	8	75	75	0	0.0	2	36
Univ. of Md. Sch. of Med. and Coll. of P. & S.	95	88	7	7.4	16	89	83	6	6.7	14	6	5	1	16.7	4	18	15	3	16.7	8	29
Long Island College Hospital.....................	93	90	3	3.2	7	90	88	2	2.2	5	3	2	1	33.3	2	78	76	2	2.6	3	50
Northwestern University Medical School..........	90	86	4	4.4	18	87	83	4	4.6	18	3	3	0	0.0	3	74	70	4	5.4	12	19
Loyola University School of Medicine............	87	77	10	11.5	12	83	74	9	10.8	12	4	3	1	25.0	3	65	65	0	0.0	1	18
St. Louis University School of Medicine.........	86	86	0	0.0	15	82	82	0	0.0	14	4	4	0	0.0	2	72	72	0	0.0	7	42
Fordham University School of Medicine..........	85	74	11	12.9	4	83	74	9	10.8	4	2	0	2	100.0	2	67	59	8	11.9	2	49
University of Minnesota Medical School..........	84	84	0	0.0	6	84	84	0	0.0	6	0	0	0	0.0	0	51	51	0	0.0	4	38
St. Louis College of Physicians and Surgeons...	73	54	19	26.0	16	66	50	16	24.2	10	7	4	3	42.9	6	28	26	2	7.1	4	41
Vanderbilt University School of Medicine........	73	67	6	8.2	19	62	58	4	6.5	13	11	9	2	18.2	7	46	46	0	0.0	7	72
New York Homeopathic College & Flower Hosp.	72	59	13	17.9	4	59	52	7	11.9	2	13	7	6	46.2	4	39	37	2	5.1	1	51
University of Buffalo Medical Department.......	72	65	7	9.7	3	70	63	7	9.9	4	2	2	0	0.0	1	59	57	2	3.4	1	54
University of Louisville Medical Department.....	72	66	6	8.3	18	58	58	0	0.0	12	14	8	6	42.8	8	56	56	0	0.0	11	25
University of Illinois College of Medicine........	71	64	7	9.9	14	64	60	4	6.2	9	7	4	3	42.9	6	57	55	2	3.5	4	21
Chicago Medical School............................	67	43	24	35.8	7	63	42	21	33.4	4	4	1	3	75.0	4	53	37	16	30.2	1	16
Indiana University School of Medicine...........	63	63	0	0.0	8	62	62	0	0.0	7	1	1	0	0.0	1	2	2	0	0.0	2	22
University of Cincinnati College of Medicine....	59	58	1	1.7	5	59	58	1	1.7	5	0	0	0	0.0	0	58	57	1	1.7	5	58
University of Vermont College of Medicine.......	59	55	4	6.8	6	51	50	1	2.0	6	8	5	3	37.5	4	33	33	0	0.0	4	75
Detroit College of Medicine and Surgery..........	58	57	1	1.7	4	57	56	1	1.8	4	1	1	0	0.0	1	55	55	0	0.0	3	35
Middlesex College of Medicine and Surgery.......	55	27	28	50.9	3	55	27	28	50.9	3	0	0	0	0.0	0	22	15	7	31.8	1	33
State University of Iowa College of Medicine....	54	53	1	1.9	9	52	52	0	0.0	9	2	1	1	50.0	2	2	2	0	0.0	2	23
Emory University School of Medicine............	52	51	1	1.9	5	52	51	1	1.9	5	0	0	0	0.0	0	49	49	0	0.0	4	14
Howard University School of Medicine...........	52	37	15	28.9	14	48	34	14	29.2	14	4	3	1	25.0	2	16	13	4	18.7	8	13
University of Nebraska College of Medicine......	50	49	1	2.0	4	50	49	1	2.0	4	0	0	0	0.0	0	47	47	0	0.0	2	45
Cornell University Medical College...............	50	49	1	2.0	7	46	45	1	2.2	5	4	4	0	0.0	2	36	35	1	2.8	1	48
Temple University School of Medicine............	50	37	13	26.0	9	50	37	13	26.0	9	0	0	0	0.0	0	3	3	0	0.0	2	64
Totals..	3193	2894	299	9.4	....	2946	2737	213	7.2	....	247	161	85	30.8	....	1861	1789	72	3.9	....	...

This table is interesting, since it gives data relating to the 36 medical colleges having over fifty graduates examined arranged according to the number. This allows of comparison between colleges having classes of nearly equal size. Jefferson Medical College had the largest number of graduates examined during the last three years. The position was held by the Chicago College of Medicine and Surgery in 1913 to 1918, inclusive, by the University of Illinois College of Medicine in 1906, 1907 and 1912; in 1908 by Jefferson Medical College, and in 1909, 1910 and 1911 by the University of Louisville Medical Department. The higher places from the standpoint of the numbers examined, however, do not always mean the higher rank from the standpoint of scholarship. Note the percentages of failures. The six highest failure percentages are for Middlesex College of Medicine and Surgery, 50.9; Meharry Medical College, 45.7; Chicago Medical School, 35.8; Howard University School of Medicine, 28.9, and the St. Louis College of Physicians and Surgeons and Temple University School of Medicine, each 26.0.

Of the 10 colleges having 100 or more examined, eight have failure percentages of less than 10, one has 13.6 per cent. and one, 45.7. Of the 26 colleges having between 50 and 100 graduates examined, eighteen had failure percentages of less than 10, three had between 10 and 20, and five had over 20 per cent.

The average percentage of failures for these larger colleges for graduates of 1916 and previous years was 30.8; for graduates of 1917 to 1921, inclusive (recent graduates), 7.2; for graduates of 1921, 3.9 and for graduates of all years, 9.4. Of the 4,249 graduates of the 75 colleges in the United States which had graduates examined by the state boards in 1921, these larger colleges (48 per cent. of all schools having graduates) furnished 3,193, or 75.1 per cent., of the graduates examined.

ined in 1921 was 20 more than in 1920; 71 more than in 1919; 1,170 more than in 1918, and 77 more than in 1917. The numbers examined decreased from 1906 till 1918, but since the latter year have been increasing. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables G, H, I, J and K. By all methods—examination, reciprocity, under exemption, etc. —6,348 physicians were licensed during 1921, 209 less than in 1920, and 236 less than in 1919, but 2,163 more than in 1918, and 1,517 less than in 1906 when 7,865 physicians were licensed.

TABLE F.—PHYSICIANS EXAMINED BY STATE BOARDS, 1917 TO 1921, INCLUSIVE

STATES	1917		1918		1919		1920		1921		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	45	21	20	9	23	12	34	2	37	3	206	159	47	22.8
Arizona	32	5	33	8	48	5	33	14	6	10	194	152	42	21.6
Arkansas	80	12	68	4	70	7	48	28	46	6	369	312	57	15.4
California	235	94	203	71	109	56	150	34	184	56	1192	881	311	26.1
Colorado	38	2	44	10	57	16	56	46	44	16	329	239	90	27.3
Connecticut	72	22	39	14	94	24	97	26	145	27	560	447	113	20.1
Delaware	14	0	10	1	19	1	6	3	8	0	62	57	5	8.1
Dist. of Columbia	26	7	37	4	51	6	61	5	42	11	250	217	33	13.2
Florida	44	12	21	8	64	17	72	18	50	24	330	251	79	23.9
Georgia	100	2	48	2	60	5	70	6	68	0	361	346	15	4.5
Idaho	20	2	16	0	31	0	27	2	14	0	112	108	4	3.6
Illinois	487	101	367	57	475	96	404	66	348	61	2462	2081	381	15.5
Indiana	39	2	43	6	34	0	64	0	65	0	253	245	8	3.1
Iowa	45	1	50	1	78	4	76	2	61	0	318	310	8	2.5
Kansas	24	3	20	0	32	3	32	2	46	1	163	154	9	5.5
Kentucky	68	16	40	2	31	7	30	4	54	5	257	223	34	13.2
Louisiana	44	13	50	6	80	6	81	2	74	7	363	329	34	9.4
Maine	33	1	27	3	43	3	24	1	35	2	172	162	10	5.8
Maryland	82	11	54	5	145	11	107	11	123	7	556	511	45	8.1
Massachusetts	219	42	228	18	305	41	217	69	225	93	1457	1194	263	18.0
Michigan	125	3	97	4	52	0	161	2	176	2	622	611	11	1.8
Minnesota	60	0	68	0	98	0	90	4	120	1	441	436	5	1.1
Mississippi	23	5	12	0	18	3	30	1	15	2	109	98	11	10.1
Missouri	166	12	143	21	136	1	117	5	132	12	745	694	51	6 8
Montana	43	24	20	7	26	12	25	3	17	2	179	131	48	26.8
Nebraska	63	0	44	1	102	5	27	0	76	3	321	312	9	2.8
Nevada	8	0	5	1	13	0	14	2	3	1	47	43	4	8.5
New Hampshire	6	0	4	2	5	0	6	1	4	1	29	25	4	13.8
New Jersey	26	6	16	1	61	1	38	1	26	3	179	167	12	6.7
New Mexico	...	...	2	0	2	0	3	0	1	0	8	8	0	0.0
New York	600	146	456	117	627	189	703	246	806	128	4018	3192	826	20.5
North Carolina	65	10	49	3	59	9	70	3	51	4	323	294	29	9.0
North Dakota	6	1	6	3	6	4	13	3	6	5	53	37	16	30.2
Ohio	185	4	142	6	156	8	179	5	207	14	906	869	37	4.1
Oklahoma	52	2	24	0	34	0	14	0	38	1	165	162	3	1.8
Oregon	37	7	35	7	39	3	61	19	31	12	251	203	48	19.1
Pennsylvania	241	12	168	22	213	28	288	41	303	34	1350	1213	137	10.1
Rhode Island	22	1	13	4	20	5	25	5	27	1	123	107	16	13.0
South Carolina	37	29	17	12	45	14	33	8	28	2	225	160	65	29.3
South Dakota	18	1	14	0	20	1	38	2	19	1	114	109	5	4.4
Tennessee	167	10	103	19	96	7	82	0	102	0	586	550	36	6.1
Texas	119	5	82	2	89	3	103	0	77	1	481	470	11	2.3
Utah	11	0	10	1	29	0	18	1	17	1	88	85	3	3.4
Vermont	13	1	24	0	22	0	18	0	31	0	109	108	1	0.9
Virginia	64	4	50	6	65	12	55	4	61	4	325	295	30	9.2
Washington	57	7	59	7	63	10	24	5	20	7	259	223	36	13.9
West Virginia	45	7	16	4	35	15	41	10	37	11	221	174	47	21.3
Wisconsin	40	3	34	2	34	0	46	1	59	6	225	213	12	5.3
Wyoming	13	0	22	2	19	8	9	0	4	1	78	67	11	14.1
U.S. Territories and Possessions	2	0	1	0	27	18	33	21	42	7	151	105	46	30.5
Totals	4,730		3,637		4,736		4,787		4,807		22,697			
Registered	4,061		3,154		3,060		4,053		4,211		19.539			
Rejected	669		483		676		734		596		3,158			
Per Cent. Rejected	14.1		13.2		14.3		15.4		12.4		13.9			

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the totals for the last five years and the percentage rejected by each state. Compare this table with Table H.

Four states registered over 1,000 candidates by examination in the last five years, these being New York, Illinois, Pennsylvania and Massachusetts. Over 2,000 were registered in New York and in Illinois, the totals, respectively, being 3,192 and 2,081. Altogether, 19,539 physicians were registered by examination in the five years, with an average of 3,908 each year.

The five states having the highest percentages of failures in the five years were North Dakota, 30.2; South Dakota, 29.3; Colorado, 27.3; Montana, 26.8, and California, 26.1. California and Colorado admit osteopaths to their examinations for physicians and surgeons and would be expected to have high percentages rejected. On the other hand, in many other states, boards refuse to recognize low-grade colleges and thereby eliminated many candidates prior to the examination (see Table D), and as a result, the percentages of failures at examinations are low. For example, Ohio rejected only four per cent. of those who took its examinations, but graduates of eleven inferior medical colleges are not admitted to its examinations. Excluding New Mexico, which examined only one candidate, the lowest failure percentages were in Vermont, 0.9; Minnesota, 1.1; Michigan and Oklahoma, each 1.8; Texas, 2.3, and Iowa, 2.5.

STUDY OF LARGER COLLEGES

Table E is also based on the three large tables, and gives the results of state board examinations as they affect the thirty-six larger medical colleges. Although these colleges represent 48 per cent. of the seventy-five medical colleges in the United States having graduates examined in 1921, they furnished 75.1 per cent. of all candidates for license coming from medical schools of the United States. The table shows also that the graduating of large classes by a medical college does not prove excellence of teaching, since six of these have high failure percentages.

TABLE G.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1921

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1916-1920	Graduates, 1915 and Previous	Nongraduates and graduates of Nondescript Colleges			
Alabama	33	3	1	14	....	51
Arizona	3	3	....	0	....	6
Arkansas	27	19	....	51	....	97
California	141	18	25	397	....	581
Colorado	25	6	13	79	....	123
Connecticut	108	37	....	16	3	164
Delaware	8	0	....	6	....	14
District of Columbia	38	4	....	15	....	57
Florida	17	33	....	0	....	50
Georgia	63	5	....	18	....	86
Idaho	7	7	....	19	....	33
Illinois	338	10	....	51	....	399
Indiana	65	0	....	37	....	102
Iowa	57	4	....	65	....	126
Kansas	45	1	....	53	....	99
Kentucky	51	3	....	40	....	94
Louisiana	71	3	....	11	....	85
Maine	29	6	....	6	....	41
Maryland	122	1	....	37	....	160
Massachusetts	185	32	8	0	....	225
Michigan	159	17	....	72	....	248
Minnesota	103	17	....	95	....	215
Mississippi	14	1	....	19	....	34
Missouri	123	9	....	33	....	165
Montana	12	5	....	2	....	19
Nebraska	71	5	....	35	....	111
Nevada	0	3	....	3	....	6
New Hampshire	3	1	....	14	....	18
New Jersey	25	1	....	138	....	164
New Mexico	0	1	....	18	19	38
New York	760	46	....	67	6	879
North Carolina	50	0	1	50	....	101
North Dakota	5	1	....	8	....	14
Ohio	197	10	....	119	....	326
Oklahoma	31	7	....	70	....	108
Oregon	17	13	1	0	....	31
Pennsylvania	281	22	....	31	....	334
Rhode Island	17	10	....	0	....	27
South Carolina	23	5	....	12	....	40
South Dakota	5	14	....	5	....	24
Tennessee	99	3	....	0	....	102
Texas	71	3	3	118	....	195
Utah	15	1	1	12	....	29
Vermont	29	2	....	3	....	34
Virginia	58	3	....	21	....	82
Washington	13	7	....	138	....	158
West Virginia	33	4	....	37	....	74
Wisconsin	52	2	5	60	....	119
Wyoming	2	1	1	14	....	18
U. S. Territories and Possessions	29	13	....	0	....	42
Totals	3730	422	59	2109	28	6348

This table shows the total number registered during 1921 in each state by examination, by reciprocity, and by the endorsement of credentials. The first three columns show those registered by examination, including recent graduates, older practitioners and nongraduates or graduates of nondescript colleges—including also osteopaths who were granted licenses as physicians and surgeons. The fourth column shows the number licensed by the endorsement of licenses issued by other states (reciprocity) and of certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of high professional standing or (in New Mexico) by the endorsement of diplomas of recognized medical schools. California licensed as physicians 25 out of 32 graduates of osteopathic colleges who took the examination, and Colorado so licensed 13 out of 17 osteopaths.

The last column shows the total number of physicians registered by all methods in each state during 1921. Five states registered over 300 each, these being in New York, 879; California, 581; Illinois, 399; Pennsylvania, 334, and Ohio, 326. Seventeen states registered less than fifty physicians each in the five years. The lowest numbers of physicians registered are six each in Arizona and Nevada; fourteen each in Delaware and North Dakota, and eighteen each in New Hampshire and Wyoming. The total registration by all methods was 6,348, a decrease of 209 below the total registration in 1920.

Totals Examined in Five Years

Table F shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of The Journal (Aug. 13, 1921, p. 535, Table 11) shows—what would be expected—that the states having the several largest numbers of medical graduates examined the largest number of physicians. New York leads, having examined 4,018 candidates in five years, followed by Illinois with 2,462. Altogether 22,697 physicians were examined by state boards in five years, an average of 4,539 each year.

TABLE H.—REGISTRATIONS BY STATE BOARDS FOR FIVE YEARS

STATE	1917	1918	1919	1920	1921	Totals
Alabama............	48	26	55	54	51	234
Arizona............	32	33	48	33	6	152
Arkansas............	111	81	130	97	97	516
California...........	440	342	445	651	581	2,459
Colorado...........	100	97	141	138	123	599
Connecticut.........	84	46	107	108	164	509
Delaware............	17	24	28	7	14	90
Dist. of Columbia...	33	41	66	77	57	269
Florida.............	44	21	64	72	50	251
Georgia.............	122	72	111	114	86	505
Idaho...............	25	31	49	41	33	179
Illinois.............	520	392	568	482	399	2,361
Indiana.............	79	58	65	158	102	462
Iowa................	91	79	149	132	126	577
Kansas..............	67	56	89	96	99	407
Kentucky...........	76	54	68	51	94	343
Louisiana...........	51	57	98	93	85	384
Maine...............	42	32	51	30	41	196
Maryland...	100	73	179	164	160	676
Massachusetts.......	219	228	305	217	225	1,194
Michigan............	198	145	182	287	248	1,060
Minnesota...........	103	97	179	174	215	768
Mississippi..........	37	15	46	47	34	179
Missouri............	206	186	232	177	165	966
Montana............	43	20	26	26	19	134
Nebraska...........	99	77	167	75	111	529
Nevada......	24	16	22	31	6	99
New Hampshire......	18	7	18	21	18	82
New Jersey..........	122	101	263	171	164	821
New Mexico.........	67	33	50	46	38	234
New York...........	635	496	711	779	879	3,500
North Carolina......	86	67	82	114	101	450
North Dakota.......	24	11	18	28	14	95
Ohio................	245	175	285	311	326	1,342
Oklahoma..........	142	73	116	71	108	510
Oregon..............	37	35	39	65	31	207
Pennsylvania........	258	172	269	316	334	1,349
Rhode Island........	22	13	20	25	27	107
South Carolina......	37	17	45	41	40	180
South Dakota.......	24	14	20	49	24	131
Tennessee...........	167	114	123	83	102	589
Texas...............	176	149	275	271	195	1,066
Utah................	20	23	54	32	29	158
Vermont............	13	25	24	20	34	116
Virginia............	82	78	127	85	82	454
Washington..	57	59	105	127	158	506
West Virginia.	84	41	76	95	74	370
Wisconsin...........	67	54	148	106	119	494
Wyoming...........	27	28	19	34	18	126
U. S. Possessions....	2	1	27	35	42	107
Totals...........	5,423	4,185	6,584	6,557	6,348	29,097

This table shows the totals registered in each state during the last five years. Increases over 1920 are noteworthy in Connecticut, Massachusetts, Minnesota, Nebraska, New York, Ohio, Oklahoma, Washington and Wisconsin. Marked decreases are noteworthy in Georgia, Illinois, Indiana and Texas. Totals also are given for the entire five years. It will be noted that eight states registered over a thousand physicians, the largest number being New York with 3,500, followed by California with 2,459, Illinois with 2,361, Pennsylvania with 1,349, Ohio with 1,342, Massachusetts with 1,334, Texas with 1,066 and Michigan with 1,060. The lowest number registered during the five years was in New Hampshire, where only 82 physicians were registered, followed by Delaware with 90, North Dakota with 95, and Nevada with 99.

For the five years there were registered altogether 29,097 physicians, with an average of 5,819 each year.

Total Registration in 1921

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table G, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 6,348 physicians were registered by all methods during 1921, as compared with 6,557 in 1920, 6,584 in 1919, 4,185 in 1918 and 5,423 in 1917. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1919 the total increased by 2,399 and was the largest number since 1912. In 1921 there was a decrease of 209 below 1920. There was a decrease in reciprocal registrations of 367, more than offsetting the increase in registration by examination in reciprocal registrations.

Over 100 were registered by all methods in twenty-two states; over 200 in eight; and over 300 in five, the largest numbers being 879 in New York; 581 in California; 399 in Illinois; 334 in Pennsylvania, and 326 in Ohio. Of those licensed in California 397, or 68 per cent., were registered by the endorsement of licenses granted in other states. Several boards examined and licensed osteopaths as physicians and surgeons. Texas registered 29; California licensed 25; Colorado, 13; Massachusetts, 8; Wisconsin, 7; Oklahoma, 6; Utah, 3, and Oregon, 1. Altogether, 92 osteopaths—graduates of colleges decidedly inferior to the lowest grade medical schools—were licensed as physicians and surgeons.

Total Registration in Five Years

Table H permits the reader to compare the registrations in each state for the last five years. In 1918 there was a decrease of 1,238 below 1917—due undoubtedly to the war. There was an increase of 2,399 in 1919 and only a slight decrease each year since.

The registrations in different states are interesting. In 1918, regardless of the general decrease in other states, Massachusetts had an increase. Since Massachusetts does not have reciprocal relations with other states, this increase is evidently due to the board's lack of authority to refuse recognition to low-grade medical colleges and to the fact that the board cannot insist on reasonable standards of preliminary and professional education. In California and Texas the large registrations are apparently due to the generous provisions for reciprocity. In 1920 California had 651 registrations, including 501 (76.9 per cent.) who were registered by reciprocity. In 1921 this state still retained second place in the number of registrations.

During the last five years New York registered 3,500, followed by California with 2,459; Illinois with 2,361; Pennsylvania with 1,349, and Ohio with 1,342. The four lowest registrations are New Hampshire with 82; Delaware with 90; North Dakota with 95, and Nevada with 99.

Medical Training of Applicants Licensed in 1921

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1921. Of the 6,348 candidates registered, 4,211 were licensed by examination and 2,137 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Colleges." Among the graduates of Class C schools are included 92 graduates of osteopathic colleges who were licensed as physicians in California, Colorado, Massachusetts, Oklahoma, Texas, Utah and Wisconsin.

As will be noted, the largest number of Class C graduates were licensed in Connecticut, 66; followed by California with 47; Illinois with 45; Massachusetts with 42, and Texas with 34. All of the Class C graduates registered in Arkansas were licensed by the Eclectic Board, and in Connecticut of the Class C graduates one was registered by the Homeopathic Board and the remainder (65) by the Eclectic Board. It is noteworthy also that of the 65 registered by the Eclectic Board, 37 were graduates of regular medical schools.

California registered 85 Class B graduates, the largest number, followed by Ohio, with 84; New York with 73, and Tennessee with 30. Only Class A graduates were registered either by examination or by reciprocity in Arizona, Montana, Nevada, North Dakota and Vermont.

Source of Candidates Registered in Five Years

Of the 6,348 physicians registered by all methods in 1921, 4,445, or 70.1 per cent., graduated from Class A medical colleges; 585, or 9.2 per cent., were from Class B medical colleges, and 394, or 6.2 per cent., were from Class C medical colleges. Of all candidates examined, 924, or 14.6 per cent., graduated prior to 1907, when the first classification of medical colleges was prepared or came from foreign medical colleges.

By comparing these figures with the results for the previous four years as shown in Table 3, it is noteworthy that the percentages from Class B and Class C colleges are steadily decreasing and that the percentage of graduates of Class A colleges are increasing notwithstanding the fact that in a few states osteopaths are being licensed as physicians and surgeons.

During the last five years it is interesting to note that of the 29,097 physicians registered, 19,235, or 66.1 per cent., were graduates of Class A medical schools; 3,758, or 12.9 per cent., of Class B schools; 1,586, or 5.5 per cent., of Class C schools, and 4,518, or 15.5 per cent., graduated from miscellaneous medical schools.

REGISTRATION BY RECIPROCITY

Table J gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state commonly referred to as "reciprocity." Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept the physician's credentials, if satisfactory, whether or not the state board issuing

TABLE 3.—SOURCE OF PHYSICIANS LICENSED IN FIVE YEARS

Year	Medical Colleges in						Miscellaneous and Foreign Colleges		Total
	Class A		Class B		Class C				
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	
1917	3,369	62.1	988	18.2	297	4.3	769	14.4	5,423
1918	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
1920	4,597	70.2	631	9.6	275	4.2	1,054	16.0	6,557
1921	4,445	70.0	585	9.2	394	6.2	924	14.6	6,348
Totals	19,235	66.1	3,758	12.9	1.586	5.5	4.518	15.5	29.097

TABLE I.—CHARACTER OF PHYSICIANS LICENSED IN 1921

Marginal Number	STATES	By Examination					By Reciprocity or Credentials					Total Registered from				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals	Medical Colleges					
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	32	3	1	1	37	5	4	0	5	14	37	7	1	6	51	1
2	Arizona	4	0	0	2	6	0	0	0	0	0	4	0	0	2	6	2
3	Arkansas[1]	18	4	12	12	46	29	5	9	8	51	47	9	21[1]	20	97	3
4	California[2]	102	39	32	11	184	133	46	15	203	397	235	85	47[2]	214	581	4
5	Colorado[3]	17	2	24	1	44	37	7	1	34	79	54	9	25[3]	35	123	5
6	Connecticut[4]	69	4	52	20	145	0	3	14	2	19	69	7	66[4]	22	164	6
7	Delaware	5	1	2	0	8	5	0	0	1	6	10	1	2	1	14	7
8	District of Columbia	39	0	1	2	42	6	0	0	9	15	45	0	1	11	57	8
9	Florida	28	5	1	16	50	0	0	0	0	0	28	5	1	16	50	9
10	Georgia	64	1	2	1	68	8	5	0	5	18	72	6	2	6	86	10
11	Idaho	7	3	0	4	14	5	2	0	12	19	12	5	0	16	33	11
12	Illinois[5]	286	15	43	4	348	34	6	2	9	51	320	21	45[5]	13	399	12
13	Indiana	62	3	0	0	65	19	7	0	11	37	81	10	0	11	102	13
14	Iowa	55	2	1	3	61	42	13	5	5	65	97	15	6	8	126	14
15	Kansas	45	0	0	1	46	26	7	4	16	53	71	7	4	17	99	15
16	Kentucky	48	2	1	3	54	15	8	4	13	40	63	10	5	16	94	16
17	Louisiana	69	3	1	1	74	5	0	0	6	11	74	3	1	7	85	17
18	Maine	30	2	0	3	35	2	0	0	4	6	32	2	0	7	41	18
19	Maryland	121	2	0	0	123	19	8	4	6	37	140	10	4	6	160	19
20	Massachusetts[6]	153	4	42	26	225	0	0	0	0	0	153	4	42[6]	26	225	20
21	Michigan	155	15	0	6	176	40	11	2	19	72	195	26	2	25	248	21
22	Minnesota	112	2	0	6	120	78	5	0	12	95	190	7	0	18	215	22
23	Mississippi	14	1	0	0	15	13	3	0	3	19	27	4	0	3	34	23
24	Missouri	115	7	5	5	132	21	7	0	5	33	136	14	5	10	165	24
25	Montana	13	0	0	4	17	1	0	0	1	2	14	0	0	5	19	25
26	Nebraska	69	3	1	3	76	13	9	4	9	35	82	12	5	12	111	26
27	Nevada	0	0	0	3	3	1	0	0	2	3	1	0	0	5	6	27
28	New Hampshire	3	0	1	0	4	7	1	0	6	14	10	1	1	6	18	28
29	New Jersey	24	1	0	1	26	89	14	1	34	138	113	15	1	35	164	29
30	New Mexico	0	0	0	1	1	20	3	0	14	37	20	3	0	15	38	30
31	New York	715	69	1	21	806	43	4	0	26	73	758	73	1	47	879	31
32	North Carolina	51	0	0	1	51	26	5	1	18	50	76	5	1	19	101	32
33	North Dakota	5	0	0	1	6	5	0	0	3	8	10	0	0	4	14	33
34	Ohio	122	74	0	11	207	67	10	3	39	119	189	84	3	50	326	34
35	Oklahoma[7]	26	3	6	3	38	24	7	20	19	70	50	10	26[7]	22	108	35
36	Oregon	19	1	2	9	31	0	0	0	0	0	19	1	2	9	31	36
37	Pennsylvania	260	15	14	14	303	29	1	0	1	31	289	16	14	15	334	37
38	Rhode Island	15	1	1	10	27	0	0	0	0	0	15	1	1	10	27	38
39	South Carolina	24	2	0	2	28	7	0	3	2	12	31	2	3	4	40	39
40	South Dakota	14	2	1	2	19	3	0	0	2	5	17	2	1	4	24	40
41	Tennessee	69	30	0	3	102	0	0	0	0	0	69	30	0	3	102	41
42	Texas[8]	70	3	3	1	77	46	15	31	26	118	116	18	34[8]	27	195	42
43	Utah	13	0	2	2	17	8	1	2	1	12	21	1	4	3	29	43
44	Vermont	29	0	0	2	31	0	0	0	3	3	29	0	0	5	34	44
45	Virginia	58	1	1	1	61	17	1	1	2	21	75	2	2	3	82	45
46	Washington	12	1	2	5	20	61	18	0	59	138	73	19	2	64	158	46
47	West Virginia	29	3	0	5	37	19	5	1	12	37	48	8	1	17	74	47
48	Wisconsin	48	3	6	2	59	39	9	3	9	60	87	12	9	11	119	48
49	Wyoming	3	0	1	0	4	7	1	0	6	14	10	1	1	6	18	49
50	U. S. Territories and Possessions	31	2	2	7	42	0	0	0	0	0	31	2	2	7	42	50
	Totals	3,371	334	264	242	4,211	1,074	251	130	682	2,137	4,445	585	394	924	6,348	

1. Of the 97 physicians licensed in Arkansas, the Regular Board licensed 47 Class A, 9 Class B, 1 Class C and 17 miscellaneous graduates, a total of 74. The Eclectic Board licensed 20 Class C and 3 miscellaneous graduates. The Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

2. Of the 47 graduates of Class C colleges licensed in California, 25 were graduates of osteopathic colleges which are not generally recognized as medical colleges by state licensing boards. Altogther, 32 osteopaths were admitted to the examination for physicians, and all but 7 were licensed.

3. Of the 66 graduates of Class C colleges licensed in Colorado, 13 were graduates of osteopathic colleges—institutions inferior in most respects to Class C medical schools which are reported as not recognized in Colorado. Seventeen osteopaths were admitted to the examination for physicians and all but 4 were licensed.

4. Of the 164 physicians licensed in Connecticut, the Regular Board registered 68 Class A, 1 Class B and 17 miscellaneous graduates, a total of 86. The Homeopathic Board registered 1 Class A, 3 Class B, 1 Class C and 2 miscellaneous graduates, a total of 7, while the Eclectic Board registered 3 Class B, 65 Class C and 3 miscellaneous graduates, a total of 71.

5. Illinois harbors the Chicago Medical School, one of the eight Class C medical colleges existing in the United States.

6. Massachusetts has in Boston two Class C colleges, the College of Physicians and Surgeons and the Middlesex College of Physicians and Surgeons. The board does not have authority to refuse recognition to low grade institutions.

7. Of the 26 graduates of Class C institutions registered in Oklahoma, 6 were osteopaths.

8. Of the 34 graduates of Class C colleges licensed in Texas, 29 were osteopaths, 3 of whom were registered as physicians and surgeons by examination and 26 by reciprocity. Texas, which does not recognize Class C medical colleges, nevertheless accepts graduates of osteopathic schools which are, in fact, medical schools of a still lower grade.

It will be seen that eight states accepted altogether 19 Class C graduates through reciprocity where they did not license any by examination. On the whole, 264 Class C graduates were licensed by examination and 130 through reciprocity, a total of 394.

By both examination and reciprocity the largest numbers of Class C graduates were licensed in Connecticut, 66; California, 47; Illinois, 45; Texas, 34; Oklahoma, 26, and Colorado, 25. The largest number of Class B graduates were licensed in California, 85; Ohio, 84; New York, 73; Tennessee 30, and Michigan, 26.

Of all physicians licensed, 4,445, or 70 per cent., were graduates of Class A medical schools; 585, or 9.2 per cent., from Class B schools; 394, or 6.2 per cent., from Class C schools, and 924, or 14.6 per cent., from foreign and miscellaneous colleges.

TABLE J.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1921

STATE BOARDS OF	Total Reg. by Recip. Ea. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U.S.A..U.S.N..etc	Nat. Bd. Med. Ex.	U. S. Territories	Foreign
Number	.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Alabama	14	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	2	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	3	..	..	..
Arkansas	51	..	..	..	..	..	7	..	..	1	1	..	3	..	..	..	2	4	..	1	..	1	..	5	..	..	1	..	..	..	..	1	..	..	..	3	..	1	..	..	..	11	5	..	..	1	..	..	1	..	..	..	..	..
California	397	..	4	1	..	6	2	..	2	1	5	4	76	16	26	10	6	7	4	5	13	13	14	1	19	10	7	4	3	3	1	30	..	2	7	3	3	13	..	1	6	5	10	13	1	3	14	..	10	1	12	..	..	..
Colorado	79	4	2	1	2	..	..	..	..	..	2	..	8	3	6	5	3	1	1	2	..	1	3	..	8	..	4	..	..	2	..	1	..	1	4	1	..	2	..	..	2	2	3	1	..	..	1	..	2	..	1	..	..	..
Connecticut	16	..	..	10	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Delaware	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Dist. of Col.	15	..	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	2	..	2	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	..	..	2	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..
Georgia	18	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	1	..	4	1	..	..	1	..	..	..	..	..	..	..	..
Idaho	19	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	3	..	..	1	..	1	..	..
Illinois	51	..	..	1	..	..	..	..	..	..	..	..	..	..	2	2	5	..	1	2	..	1	1	..	20	..	2	..	..	1	..	3	4	..	1	..	..	4	..	..	..	..	1	..	..	..	1	..	..	..	1	..	..	1
Indiana	37	1	..	..	..	2	..	1	1	..	..	..	13	..	..	..	4	..	..	2	..	2	..	..	3	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..
Iowa	65	..	..	..	..	..	..	..	..	..	..	..	25	1	..	2	..	..	..	1	..	2	6	..	4	..	12	1	..	..	1	..	1	..	2	..	..	1	..	..	..	..	1	..	..	1	..	1	1	2	..	..	..	..
Kansas	53	..	..	..	..	1	..	..	..	..	..	..	6	..	1	..	..	..	..	1	1	1	..	..	23	..	1	..	..	..	..	..	..	..	1	3	..	2	..	..	..	6	1	..	..	1	..	..	2	..	..	..	..	..
Kentucky	40	2	..	..	..	..	..	..	..	..	2	..	1	1	1	..	..	1	2	2	1	2	1	1	2	..	..	..	1	..	..	..	..	..	2	2	..	..	..	..	..	9	2	..	..	1	..	2	..	..	2	..	..	..
Louisiana	11	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	2	..	..	1	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Maine	6	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Maryland	37	1	..	..	..	..	..	2	4	..	3	..	2	1	..	1	1	..	..	1	..	..	..	1	1	..	..	..	..	..	..	2	2	..	1	..	..	2	..	1	..	2	..	..	1	2	..	5	..	..	..	1	..	..
Michigan	72	..	..	..	3	..	1	..	1	..	3	..	16	2	4	1	1	1	1	5	4	..	..	..	2	..	..	..	..	..	..	4	..	..	7	3	..	3	..	..	..	5	..	..	..	..	2	1	2	..	..	..	..	..
Minnesota	95	2	..	..	..	..	..	..	2	..	..	..	23	2	7	..	..	1	3	6	..	7	..	1	3	..	5	..	..	..	..	..	..	4	3	..	..	5	..	..	2	1	..	..	..	1	1	..	5	..	..	11	..	..
Mississippi	19	3	..	2	1	..	..	..	1	..	..	..	1	..	..	..	..	4	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	33	..	..	2	..	..	..	..	..	..	2	..	2	..	1	6	..	..	..	3	..	1	2	1	..	..	5	..	..	..	..	..	..	..	1	2	..	1	..	..	..	..	2	1	..	1	..	..	..	..	..	..	..	..
Montana	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Nebraska	35	..	..	..	1	..	..	..	..	..	..	..	8	1	8	3	..	1	..	..	..	..	2	..	3	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	1	1	..	1	2	..	..	..	..
Nevada	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hamp.	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
New Jersey	138	1	..	..	1	..	..	3	1	..	3	..	6	..	..	..	..	..	2	6	1	1	..	1	3	..	2	..	..	..	..	69	4	..	3	..	..	16	..	..	..	5	..	..	1	4	1	1	1	..	..	2	..	..
New Mexico	18	2	..	1	..	..	..	..	..	..	..	..	1	1	3	2	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2
New York	67	..	..	..	3	..	..	1	..	..	1	..	14	3	1	1	..	..	2	..	3	5	..	..	..	1	..	..	..	5	..	..	1	..	5	..	1	2	..	..	..	..	1	2	1	8	..	..	1	..	..	..	1	4
No. Carolina	50	2	..	..	1	..	..	..	1	1	3	..	1	1	..	..	1	1	1	3	2	2	..	..	1	..	..	..	2	..	..	3	..	..	..	..	..	1	1	4	..	2	..	..	..	12	..	1	..	..	3	..	..	..
No. Dakota	8	..	..	..	..	..	..	..	..	..	..	..	4	..	2	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ohio	119	3	..	1	1	..	..	1	3	..	..	..	13	7	3	1	12	..	3	5	..	18	1	1	10	..	1	..	..	..	..	8	..	..	..	1	..	17	..	..	..	..	1	..	..	2	1	5	..	..	..	..	..	..
Oklahoma	70	2	..	7	1	1	..	..	..	1	3	1	..	1	2	10	5	..	..	1	..	1	..	..	8	..	1	..	..	..	1	..	..	..	2	..	..	..	..	1	..	10	9	..	..	1	..	..	..	..	..	1	..	..
Penns'vania	31	..	..	..	..	..	..	2	1	..	1	..	2	1	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	..	..	..	1	1	..	1	..	..	11	4	..	..
So. Carolina	12	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	1	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
So. Dakota	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Texas	118	6	1	3	3	2	..	..	..	..	1	..	7	2	2	5	5	11	..	4	..	2	2	3	31	..	2	..	..	1	..	2	1	1	2	5	..	1	..	..	..	10	..	..	..	..	..	..	1	..	1	1	..	..
Utah	12	..	1	2	2	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..
Vermont	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Virginia	21	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	1	4	..	..	..	..	1	..	..	..	3	..	..	..	..	..	1	..	..	6	..	..	..
Washington	138	..	..	..	3	..	..	..	..	..	..	9	42	3	8	4	..	..	..	..	..	4	7	..	4	24	2	..	..	..	..	..	..	6	4	2	..	5	..	..	1	2	..	1	..	..	..	..	3	2	..	1	1	..
W. Virginia	37	..	..	..	..	..	..	..	..	..	2	..	3	1	..	..	4	..	1	..	..	..	..	1	4	..	..	..	..	1	..	..	2	..	7	1	..	1	..	1	..	..	2	..	1	5	..	..	..	..	..	..	..	..
Wisconsin	60	..	..	..	..	..	..	..	..	..	..	..	20	2	1	1	..	..	..	..	..	4	..	2	2	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	1	2	1	..	..	..	..	..	..	20	..	..	..
Wyoming	14	..	..	..	..	..	..	..	..	..	..	..	4	1	1	..	..	..	..	..	..	..	1	..	1	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..
Totals	2109	31	8	33	23	18	10	10	20	4	40	14	304	50	81	54	56	40	26	63	31	70	47	24	158	41	48	5	10	15	3	135	21	15	58	27	6	92	3	10	11	91	43	21	11	52	27	18	30	8	61	23	2	7
Number	.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered by each state through reciprocity during 1921. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right the table shows that North Dakota registered 8 candidates through reciprocity in 1921 and that of these candidates 4 came from Illinois, 2 from Iowa and 1 each from Kentucky and Minnesota. Read from above downward the table shows that from North Dakota 2 candidates went to California, 1 to Colorado, 4 to Minnesota, 1 each to South Dakota and Texas, and 6 to Washington. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 2,190, or 349 less than in 1920. This total includes 36 osteopaths, 6 in Oklahoma, 26 in Texas, and 2 each in Utah and Wisconsin, who were granted full privileges as physicians and surgeons.

TABLE K.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1917	1918	1919	1920	1921	
Alabama	8	12	27	32	31	110
Arizona	6	4	7	6	8	31
Arkansas	41	24	72	58	33	228
California	2	5	14	23	23	67
Colorado	14	10	22	13	18	77
Connecticut	0	2	12	9	10	33
Delaware	4	11	8	6	10	39
District of Columbia	16	14	30	37	20	117
Florida	1	2	2	3	4	12
Georgia	28	10	38	47	40	163
Idaho	4	6	7	11	14	36
Illinois	176	125	325	367	304	1297
Indiana	22	30	57	52	50	211
Iowa	44	40	71	88	81	324
Kansas	32	28	75	65	54	254
Kentucky	44	31	71	68	56	270
Louisiana	13	5	36	43	40	137
Maine	8	8	18	16	26	76
Maryland	34	25	61	62	63	245
Massachustts	20	10	36	59	31	156
Michigan	42	24	69	58	70	263
Minnesota	28	20	27	66	47	188
Mississippi	59	11	48	17	24	159
Missouri	84	65	144	143	158	594
Montana	1	1	8	17	41	68
Nebraska	49	36	60	71	48	264
Nevada	5	7	8	9	5	34
New Hampshire	7	4	24	5	10	50
New Jersey	16	15	30	27	15	103
New Mexico	2	6	9	3	3	23
New York	83	74	197	163	135	652
North Carolina	9	16	24	15	21	85
North Dakota	13	4	17	25	15	74
Ohio	43	27	73	98	58	299
Oklahoma	17	28	53	26	27	151
Oregon	3	7	15	18	6	49
Pennsylvania	62	57	113	123	92	447
Rhode Island	3	1	4	1	3	12
South Carolina	7	4	5	11	10	37
South Dakota	3	6	3	15	11	38
Tennessee	67	34	124	102	91	418
Texas	20	23	38	33	43	157
Utah	13	6	17	22	21	79
Vermont	13	7	25	18	11	74
Virginia	42	36	61	59	52	250
Washington	10	12	21	23	27	93
West Virginia	24	16	41	41	18	140
Wisconsin	28	13	51	35	30	157
Wyoming	4	4	6	7	8	29
Army, Navy, P. H. Service	1	10	130	108	61	310
Natl. Bd. of Med. Exam.	2	1	19	18	23	63
U. S. Territories and Possessions	1	1	4	8	2	16
Foreign and Misc.	1	....	2	8	8	19
Totals	1279	972	2459	2458	2109	9277

This table shows that 9,277 candidates were registered through reciprocity during the last five years. In 1918 there was a marked decrease due largely to the war. In 1919 there was an increase of 1,487 due to a large migration following the return from military service, and in 1920 this large number was continued. In 1921, there was a reduction of 349, but the number is still higher than in 1917. It will be noted that 130 were registered in 1919 on the basis of military service. A study of the totals for the different states shows that of the 9,277 registered during the five years 1,297, or 14 per cent., obtained their original licenses in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only nine other states where Illinois has such relations with twenty-nine.

the original license returns the favor. Had not reciprocal relations been established by the forty states shown in Table J, 2,109 physicians—many of whom had been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table K shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 9,277 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,297, who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,[1] only 652 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-nine states, while New York has relations with only nine.

TABLE L.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

There are now forty-two states (counting Alaska Ter.) which have adopted requirments of preliminary education in addition to a standard four-year high school education. Of this number 38 now require the two year standard. These states, the number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	....	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
Arkansas[1]	1915-16	1919	1918-19	1922
California	1915-16	1919	....	....
Colorado	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	....	....
Delaware*	....	....	....	....
District of Columbia†	....	....	....	....
Florida	1914-15	1918	1918-19	1922
Georgia	....	....	1918-19	1922
Idaho	....	....	1915-16	1919
Illinois	1915-16	1919	1918-19	1922
Indiana	1910-11	1914	1911-12	1915
Iowa	....	....	1911-12	1915
Kansas	1910-11	1914	1918-19	1922
Kentucky	1914-15	1918	1918-19	1922
Louisiana	1915-16	1919	1918-19	1922
Maine	1915-16	1919	1916-17	1920
Maryland	1914-15	1918	1918-19	1922
Massachusetts†	....	....	....	....
Michigan	1914-15	1918	1918-19	1922
Minnesota	....	....	1908-09	1912
Mississippi	1915-16	1919	1919-20	1923
Missouri*	....	....	....	....
Montana	1914-15	1918	1918-19	1922
Nebraska*	....	....	....	....
Nevada*	....	....	....	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1917-18	1921
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	....	....	1908-09	1912
Ohio*	....	....	....	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon	....	....	1920-21	1924
Pennsylvania	1914-15	1918	....	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	....	....	1918-19	1922
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	....	....
Utah	1913-14	1917	1922-23	1926
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	1920-21	1924
Wisconsin	....	....	1915-16	1919
Wyoming†	....	....	....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas are evidently not enforced by the sectarian licensing boards of that state.

IMPROVED STANDARDS OF LICENSURE

Table L shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses are affected by the increased requirements. This table shows the rapidity with which requirements of preliminary education have been advanced by state boards since 1908, prior to which no state was requiring more than a four year high school education. As will be noted, there are now forty-two states which have adopted the higher standard, and thirty-two of these require as a minimum two years of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology. As shown in the footnotes, in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been fixed.

TABLE M.—ADVANCES IN STATE LICENSE REQUIREMENTS IN SEVENTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1922	Increase	
Preliminary Education—				
Any requirement	20	47	27	3[1]
A standard four-year high school education or higher	10	47	37	3[1]
One year or more of college work	0	42	42	8[2]
Two years of college work as a minimum	0	38	38	12[2]
That all applicants be graduates of a medical college	36	49	13	1[3]
That all applicants undergo an examination for license	45	49	4	1[4]
Requirement of practical tests in the license examinations	1	13	12	37
Hospital intern year required	0	10[5]	10	40
Full authority by board to refuse recognition to low-grade colleges	14	47	33	3[6]
Boards refusing to recognize low-grade colleges	5	47[7]	42	3[8]
Reciprocal relations with other states	27	44	17	6[9]
Single boards of medical examiners	36	45	9	5[10]

1. District of Columbia, Massachusetts and Wyoming.
2. See Table L.
3. Colorado.
4. New Mexico.
5. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
6. District of Columbia, Massachusetts and Wyoming.
7. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
8. The states named in Footnote 6.
9. Alaska, Arizona, Connecticut (regular board), Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
10. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

In Table M the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in forty-two states—referred to in Table L. An equally great increase is in the number of states—now forty-seven—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a greater or less extent in a few other states.

PHYSICIANS NOT IN ACTIVE PRACTICE

Table N gives the total number of students graduating from the medical colleges of the United States and Canada during each of the last twelve years and the number in each year for whom licenses have not been reported. The larger numbers during the last three years doubtless include some who are still serving as interns in hospitals and who for various reasons have delayed the securing of the license. The numbers for 1917 and previous years, however, appear to be fairly stable and are doubtless made up of those who have gone into other lines of work or have gone to other countries. Of the 42,769 students who graduated from medical schools in the United States in the last twelve years, 622 or 1.4 per cent. still remain unlicensed.

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[1] THE JOURNAL, Aug. 13, 1920, p. 535, Table 11.

TABLE X.—MEDICAL GRADUATES NOT YET REPORTED AS HAVING RECEIVED LICENSES

Year	Medical Schools of the United States		Canadian Medical Schools	
	Total Graduates	Number Not Reported as Licensed	Total Graduates	Number Not Reported as Licensed
1910	4,440	38	308	5
1911	4,273	45	342	9
1912	4,483	24	263	6
1913	3,981	22	305	6
1914	3,594	24	321	15
1915	3,536	34	318	11
1916	3,518	46	206	24
1917	3,379	37	315	32
1918	2,670	64	270	55
1919	2,656	82	296	57
1920	3,047	83	251	75
1921	3,192	123	406	115
Totals	42,769	622	3,601	410

There are doubtless others who, although having obtained licenses, are not engaged in the active practice of medicine, and still others who have retired. Including those who occupy all-time teaching positions, those who are engaged in public health work, and those who are otherwise not in practice, it is believed that the total number would not exceed 2,000. Including those whose entire time is given to insurance examinations, or in industrial plants, and those entirely engaged in diagnostic work in laboratories, the total would possibly reach 2,500 or, at the very extreme, 3,000. These estimates are based on the total number of physicians in the United States, namely, 145,680.

In Conclusion

In the publication of these statistics, the endeavor has been to present the facts, a knowledge of which is always beneficial. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. We believe the information here published will be of service not only to the medical colleges and the state boards, but also to the public.

National Board of Medical Examiners

The National Board of Medical Examiners, which was organized in 1915, consists of nineteen members, including the Surgeon-Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to December 31, 1921, ten examinations have been held as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Feb., 1920	Chicago, St. Louis	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23.3
Feb., 1921	Rochester, Minn.	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Forty medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Percentage Failed
Boston University School of Medicine	2	1	1	50.0
Columbia Univ. Coll. of P. and S.	11	11	0	0.0
Cornell Univ. Med. College	4	4	0	0.0
Emory Univ. School of Med.	1	1	0	0.0
Georgetown University	1	1	0	0.0
George Washington University	1	0	1	100.0
Harvard University Med. School	31	31	0	0.0
Howard Univ. School of Med.	1	0	1	100.0
Indiana Univ. School of Medicine	2	1	1	50.0
Jefferson Medical College	8	3	5	62.5
Johns Hopkins Univ. Med. Dept.	24	22	2	8.3
Stanford University School of Medicine	1	1	0	0.0
Marquette University	1	1	0	0.0
McGill Univ. Faculty of Med.	1	0	1	100.0
Northwestern Univ. Med. School	25	20	5	20.0
Rush Medical College	56	49	7	12.5
State Univ. of Iowa Coll. of Med.	5	2	3	60.0
Syracuse University	1	1	0	0.0
Tufts College Medical School	1	0	1	100.0
Tulane University	1	1	0	0.0
Univ. and Bellevue Hosp. Med. College	1	0	1	100.0
University of Buffalo Med. Dept.	1	1	0	0.0
University of California Med. School	1	1	0	0.0
University of Colorado Sch. of Med.	1	1	0	0.0
University of Georgia	1	1	0	0.0
University of Illinois	3	1	2	66.6
University of Maryland Sch. of Med.	2	2	0	0.0
University of Michigan Med. School	6	4	2	33.3
University of Minnesota Med. School	11	4	7	63.6
University of Nebraska Coll. of Med.	2	1	1	50.0
University of Pennsylvania Sch. of Med.	95	84	11	11.6
University of Pittsburgh Sch. of Med.	1	1	0	0.0
University of Texas Dept. of Med.	4	3	1	25.0
University of Utrecht	1	1	0	0.0
University of Virginia Dept. of Med.	2	1	1	50.0
Vanderbilt University	3	1	2	66.7
Washington University	4	4	0	0.0
Western Reserve Univ. School of Med.	2	1	1	50.0
Woman's Medical College	5	5	0	0.0
Yale University School of Med.	1	1	0	0.0
Totals	325	268	57	14.4

In 1921 the board adopted the following plan of conducting its examinations: Part I, a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; physiology, physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, a written examination in: Medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) Clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any Class A medical school and Part III is entirely practical and clinical and given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville. The fee is $25 each for the first and second parts and $50 for the third.

Holders of certificates from the National Board of Medical Examiners are registered without further examination in the following twenty-one states:

Alabama
Arizona
Colorado
Delaware
Florida
Georgia
Idaho
Iowa
Kentucky
Maryland
Minnesota
Nebraska
New Hampshire
New Jersey
North Carolina
North Dakota
Pennsylvania
Rhode Island
South Carolina
Vermont
Virginia

A holder of the National Board certificate is eligible for the regular medical corps of the United States Army and the United States Navy without further professional examination if a review of his examination papers by the boards of examiners of those services is satisfactory. In 1920, a recommendation was adopted by the Triple Qualification Board of Scotland providing that holders of the National Board certificate be admitted to its final examination, and in January, 1921, similar action was taken by the Conjoint Examining Board of England.

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SATURDAY, APRIL 29, 1922

STATISTICS OF THE STATE BOARD EXAMINATIONS

This week, for the nineteenth consecutive year, THE JOURNAL publishes statistics based on official reports of examinations conducted by state medical boards, and of registrations by reciprocity and other methods. During these nineteen years the work has met with an increasing support and cooperation from the secretaries of state licensing boards, who have furnished reports of their examinations. The reports have been carefully checked with alumni lists furnished by the deans of medical colleges, and by this cross-checking, errors have been corrected and the state boards concerned have been notified. Thus, not only are the statistics accurate and reliable, but also state board records have been corrected. We express our acknowledgments for the cooperation of the officers of both state licensing boards and medical colleges by which the publication of these statistics has been made possible.

These statistics are of great importance, as they relate to medical education and to medical licensure. For each state they show the number and qualifications of physicians admitted to examinations; the character of the colleges from which they graduated; the numbers registered and rejected, and the percentages. The material is so arranged that the facts regarding any one college or state can be compared with other colleges and states. The statistics show that in some states people are well protected against illiterate and incompetent physicians, while in others, in varying degrees, the opposite situation prevails.

CONNECTICUT AND ARKANSAS

Two glaring instances in which the people are not protected are found in Connecticut and Arkansas. In these states, although reasonably high standards are enforced by the regular medical boards, an open door for those with inferior qualifications is provided by a separate board of eclectic medical examiners. In Connecticut the eclectic board licensed seventy-one physicians, sixty-one of whom graduated from low-grade medical colleges, and three graduated from the Pacific Medical College of Los Angeles, an institution which was never recognized by the California board as a professional school of any type, while the authenticity of the credentials of one candidate who was licensed is seriously in doubt. This eclectic board assumed the authority to examine not only the graduates of eclectic medical schools, but also all others who applied. Of the seventy-one licensed, only twenty-five graduated from eclectic colleges, while forty-six, or 70.7 per cent., were graduates who would supposedly apply to the regular medical board. This group included thirty graduates from the St. Louis College of Physicians and Surgeons, a nominally regular medical school which is reported as not recognized by the Connecticut (Regular) Medical Board. It is reported as not recognized also by the licensing boards of Missouri and forty-five other states.

In Arkansas, out of twenty-three candidates licensed by the eclectic board, twenty were graduates of low-grade medical schools. Most of these were from the Kansas City College of Medicine and Surgery, a nominally eclectic institution, reported not recognized by the licensing boards of forty-two states. Why should Connecticut and Arkansas longer tolerate these eclectic boards, which are making these states the literal dumping ground of graduates of inferior medical schools?

THE LICENSING OF OSTEOPATHS

During the last five years a few boards have admitted osteopaths to their examinations, and have licensed many of them as physicians. The objection to this is not that these candidates are osteopaths, but that they are not required to present educational qualifications equal to those demanded of physicians. In two of these states—Colorado and Texas—the boards refuse to admit graduates of low-grade medical colleges to their examinations. Nevertheless, they admit graduates of osteopathic colleges which are not comparable with the lowest type of medical school. Reputable medical schools require for admission two years of college education in addition to a four-year high school course. Not one of the osteopathic colleges requires more than a high school education for admission, and only two enforce even this requirement. Inspection also discloses that osteopathic colleges lack properly equipped laboratories; they lack expert, trained instructors in the fundamental medical sciences, and they seriously lack clinical facilities. In the instruction, also, the osteopathic idea is so emphasized that many other valuable therapeutic measures are neglected. Despite these serious deficiencies in instruction, ninety-two osteopaths were licensed last year as physicians—twenty-nine in Texas, twenty-five in California, thirteen in Colorado, eight in Massachusetts, seven in Wisconsin, six in Oklahoma, three in Utah and one in Oregon.

QUALIFICATIONS OF PHYSICIANS LICENSED

Special attention is called to Table I,[1] which shows the classification of the medical colleges from which the physicians licensed in each state were graduated.

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[1] Page 1311.

A review of this table in the state board numbers for 1917 to 1921 inclusive shows that California licensed 342 graduates of low-grade medical colleges, the largest number licensed in any state during the five years. The next largest numbers licensed were 167 in Illinois, 134 in Missouri, 130 each in Arkansas and Texas, and 106 in Colorado. In Missouri, the number of such graduates licensed during the last three years was greatly diminished; but, unless there is a repeal of the recent amendment which weakened the medical practice act, the number will again be increased. Table I shows also that in eight states the boards granted licenses by reciprocity to graduates of low-grade medical schools, although they avowedly do not admit them to their examinations.

EFFECTS OF PUBLICITY

The effectiveness of publicity in medical licensure may be noted in Table M, on page 1313. Higher standards of preliminary education have been adopted; all states but Colorado require that applicants must have graduated from a medical school; all but New Mexico require an examination of all applicants; forty-seven states have obtained and are using the authority to refuse recognition of low-grade medical colleges; forty-four states have established reciprocal relations with other states; ten states require a hospital internship as an essential for the license, and all but two states — Arkansas and Connecticut — have abolished their separate boards of eclectic medical examiners or have limited their authority.

On medical education the effect of these statistics has been even more pronounced. The publicity regarding the failures of graduates at state licensing examinations and regarding the nonrecognition of various colleges (Table D) has impelled medical schools to improve greatly their facilities for teaching. Such improvements are evidenced by the larger number of colleges which are now recognized in all states as compared with five years ago.

Briefly, to each medical school these statistics show what improvements are essential if its graduates are to succeed in state board examinations; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show the qualifications of the physicians licensed as compared with those licensed in other states, and the further improvements which are needed in its educational standards and methods of examination. Owing to political conditions and other factors, standards in certain states fluctuate considerably; but on the whole, there has been decided progress. Continuous publicity has led to a general improvement and a greater uniformity in the methods of examination; there has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of incompetent practitioners.

THE CONTINUANCE OF OUTBREAKS OF BOTULISM

In spite of the publicity that has been given to the subject of botulism in this country for several years, outbreaks of this highly fatal malady continue to be recorded. One is described in this issue;[1] the daily press has recently reported another in a hospital at Kendallville, Ind., and two have occurred in California.

It is impossible to tell whether botulism is increasing or diminishing. Certainly reports of this form of food poisoning have become more numerous, but this may well be due to the difficulties of accurate diagnosis at an earlier time. Many of the reported outbreaks have occurred in isolated farmhouses in thinly settled communities where it has not always been easy to secure prompt medical attention. Until recently, detailed descriptions of clinical details and of possible modes of origin have not been available to the American practitioner. It is quite probable that a considerable proportion of the apparent increase in incidence of botulism is due simply to the bringing to light of cases that a decade or two ago would have remained unrecognized. On the other hand, it is possible that an increase in the use of food preserved by heat may have occurred and may be in part accountable for an increase in botulism.

It is evident that, so far as we now know, cases of botulism may appear at any time in any part of the country. Prompt recognition is important, both in order that the offending food may be recognized and, when necessary, official measures of control instituted, and in order that botulism antitoxin may be given a fair trial. Animal experiments have somewhat encouraged the use of antitoxin treatment, but little if any benefit from the administration of botulism antitoxin has resulted in human cases. One reason is undoubtedly the same as that long known in diphtheria, namely, failure to administer the antitoxin early enough. Most patients with botulism die within four or five days after the fatal meal. Early recognition of the disease and prompt requisitioning of botulism antitoxin constitute at present almost our only hope.

A few established facts need to be restated whenever opportunity offers. In Europe the outbreaks of botulism first recorded were due to such foods as preserved meats and sausages (whence the name botulism). In the United States, botulism has been almost always associated with canned vegetables. Both home-canned foods and commercially canned foods have caused botulism poisoning, the former much more frequently than the latter. *Bacillus botulinus* itself is apparently never able to invade the human body and produce its toxin in the tissues, but owes its dangerous character solely to the poison that it produces in food substances outside the body. In general, the incriminated food manifests obvious signs of having become spoiled, but this is not invariably the case; in some instances those who consumed the toxin-containing food declared that it appeared perfectly sound and palatable. Thorough heating of canned foods before serving lessens the danger of botulism poisoning, since the toxin is destroyed by boiling. The reheating or reprocessing of visibly spoiled food is, however, hardly to be permitted.

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[1] Whiteman, R. T., and Wilkinson, E. A.: Outbreak of Botulism at Cambridge, Idaho, this issue, p. 1278.

While the actual number of deaths in a year from botulism is not very large, probably considerably less than 100 in the whole United States, its high case mortality (more than 60 per cent.) and our present therapeutic helplessness—even greater than in the much dreaded rabies—combine to urge a further intensive study of the continuing outbreaks.

POSSIBLE RELATION OF CHRONIC COPPER POISONING TO HEMOCHROMATOSIS

A decade ago it was the custom of some canners to add solutions of copper salts to canned vegetables; this was done to give the food a green and fresh appearance. In 1913, the Referee Board of the United States Department of Agriculture disapproved this process on the general principle that the amount of this heavy metal retained in the body cannot be considered desirable; however, it was also found that the amount present in foods thus treated is apparently not sufficient to cause any demonstrable harm in man.

Copper, as is well known, often enters food in unintentional ways, as from use of the metal in cooking utensils and distilling apparatus, or as an ingredient of insecticidal sprays used on plants. The fact that men in trades in which copper is used show no particular effect from it also adds support to the view that copper in small amounts has no harmful results. Nothing could be more striking than the saturation with this metal of the workers in some branches of the copper industry, for not only is the hair green, but the urine and even the bones are of the same color; yet colonies of such workers have been observed with the greatest care and for generations, always with the verdict that no injurious effects can be ascribed to the copper. Such copper-saturated men live as long as others, are robust and active, have no special symptoms ascribable to the copper, are subject to no special diseases, and may work in an atmosphere full of copper dust until they are octogenarians. Certainly most of the animal experimentation heretofore reported has supported the clinical evidence of the harmlessness of copper in small doses, even though repeated for a long time.

Recently Mallory, Parker and Nye[1] found that, in rabbits given small amounts of copper salts by mouth daily for from six to twelve months, a pigmentary hepatic cirrhosis results which, in essential details, resembles the pigmentary cirrhosis of human hemochromatosis. They therefore advance the hypothesis that this rare but interesting disease may depend on the binding, by copper, of the hemoglobin set free during normal hemolysis, so that it is prevented from passing through the normal cycle of processes that leads either to new formation of hemoglobin or to the excretion of iron from the body. The copper pigment compound is deposited in the tissues, especially the liver, and there, acting as a foreign body, leads to fibrosis. This is an interesting suggestion, but difficult of proof in view of the infrequency of human hemochromatosis. If true, one might expect a high incidence of bronze diabetes in those Asiatic countries where throughout life virtually all the food is cooked and served in copper vessels, and where relatively large amounts of copper are found in the livers of the inhabitants.

Current Comment

THE HEALING ART IS THE PRACTICE OF MEDICINE

By any logical manner of thinking, all methods by which human ailments are treated are covered by the term "practice of medicine." And yet, owing to the various forms of "drugless" healing, confusion has arisen in the administration of medical practice laws, through misconceptions of what is meant by this simple term. It is evident that any one who is to treat human disorders, regardless of the method used, should have a knowledge of the fundamental medical sciences by which he can make a reasonably accurate diagnosis. It follows, also, that the educational qualifications required of one—the physician—should be required equally of all who profess to treat the sick. Legislators have at various times overlooked these facts, have listened to the claim of would-be healers that because they "did not use drugs" they were "not practicing medicine," and have granted them authority to practice on lower qualifications than are required of physicians. Such action is illogical. That the practice of medicine is not limited to the giving or withholding of drugs, but includes any and every useful means of diagnosing or treating human disorders, has been recognized repeatedly by the national supreme court. In the Texas case[1] it was declared that osteopaths, like physicians, should be required to have scientific training, and a clear distinction was made between osteopaths, on the one hand, and nurses and masseurs, on the other. Osteopaths, it was implied, gave treatment without a physician's diagnosis or instructions, while nurses and masseurs performed their functions after a physician had ordered the treatment or care. The decision applies with equal force to any other class of healers with limited training and scope. Recently a decision has been rendered by the United States Supreme

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[1] Mallory, F. B.; Parker, Frederic, and Nye, R. N.: Experimental Pigment Cirrhosis Due to Copper and Its Relation to Hemochromatosis, J. M. Res. **42**: 461, 1921.

[1] The United States Supreme Court and Medical Cults, Current Comment, J. A. M. A. **64**: 1431 (April 24) 1915.

Court[2] which clears the atmosphere in Ohio. Chiropractors, it has been ruled, must secure licenses from the medical board or they will be subject to prosecution for practicing illegally. The various healers in bombarding the legislatures—too often successfully—to secure special privileges in regard to practice, have indeed caused confusion in medical licensure, but the confusion is beginning to be cleared away. The issue should be tested on the basis of reasonable educational qualifications, and then, if necessary, each case should be carried through to the United States Supreme Court, where the merits of the claims may be determined. The forces for law and order in each state should not rest until one standard for educational qualifications has been established which will be equally fair to the physician and to every one else who is authorized to practice the healing art. Even granting that there is some good in the methods emphasized by any group of healers, this good will in no way be diminished if those applying such methods are required first to have had a training in the fundamental medical sciences.

THE NEW METHODS OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

A few months ago the National Board of Medical Examiners adopted a new and what has proved to be an unusually successful plan for conducting its examinations. Formerly each examination was held in one isolated city, so that applicants were required to spend time and money in railway travel that few could afford. The only variation was in the occasional selection of a different city for the examination. Under the new plan, the examination is divided into three parts: Part I to be taken by students at the end of the sophomore year; Part II at the end of the fourth year, and Part III, a practical examination, on completion of the student's hospital intern year. Of great importance, however, is the fact that Parts I and II of the examination may be taken by the student in any Class A medical school, and even Part III may be taken in any one of fifteen large cities in different parts of the country, in which the examinations are held simultaneously—a plan similar to that repeatedly suggested by The Journal.[3] Under the new plan, also, instead of a nominal fee of $5, the examination fee has been increased to $100, $25 each for Parts I and II, and $50 for Part III. The results of the first examination under the new plan have just been received. Instead of from ten to sixty—the latter the highest number heretofore—108 students appeared at this examination, eighty-seven in Part I and twenty-one in Part II; and this in spite of the higher fees. The results of the new plan, therefore, are most encouraging. The more convenient arrangement for the examination, the larger numbers taking it, and the larger income obtained constitute a greater guaranty of the permanence of this board. Instead of being dependent on the charity of a great foundation, it will hereafter be on a self-supporting basis. As shown this week on another page,[4] the recognition of the certificate granted by this board is being widely extended. It is now recognized by the Army and Navy for admission to the medical corps of those services; it is accepted by twenty-one state licensing boards in lieu of their own written examinations, and it is accepted by the Triple Qualification Board of Scotland and the Conjoint Board of London for admission to their final examinations.

NO, THE PUBLIC IS NOT AN ASS!

An eminent but somewhat irascible statesman, on being informed that the public had rejected a measure in which he was interested, remarked bluntly: "The public is an ass." Physicians who have viewed with astonishment, if not with dismay, the apparent popularity and financial advancement of ignorant mechanics, clerks and even ne'er-do-wells who have entered the healing art by the chiropractic route, have been inclined to approve the veracity of this caustic dictum. But recent developments seem to indicate that after all, that kindly, trusting, quizzical, little gentleman, Mr. Common Peepul, is beginning to see the light and to distrust appearances. The series of articles in *Leslie's Weekly*, previously mentioned in The Journal, revealed some of the obvious fallacies and a few of the rather secret commercial methods of the exponents of this push and shove school of healing; more recently *Collier's*, through Uncle Jim Henry, than whom no better exponent of the common people exists, expressed some querulous doubts as to whether all was right in the land of chiropractic; and now the *Scientific American* (this issue, page 1338) sums up the situation in a simple logical statement. The public, honorable Sir, is not an ass, because an ass never learns. The public is awakening. The little toy balloons of the medical cults go sailing upward, but when they reach the rarefied atmosphere of scientific inquiry they explode with a mild pop and sink into oblivion.

AUGUSTUS D. WALLER AND THE ELECTROCARDIOGRAPH

Within the last few years, electrocardiographic equipment and a personnel capable of employing it have become an accessory not only of institutions for medical teaching and research but also of well organized clinics and hospitals. Electrocardiography has become a recognized department in various diagnostic establishments. The contraction of the cardiac muscle, like that of the skeletal muscle, is attended by electrical changes. The spread of the excitatory wave over the different heart cavities is associated with corresponding electrical changes resulting in differences of potential. It has long been known that such electrical variations can be detected with a suitable electrometer, and today the information gained by such procedures is the basis of clinical electrocardiography.[5] It plays a part in the identification and treatment of various cardiac arrythmias, of heart block and valvular disease, of auricular fibrillation, paroxysmal tachycardia, pulsus alternans, pulsus bigeminus, and other changes. The pages of The Journal have often attested of late to its growing importance. It is an occasion for regret to record the untimely death of one of the pioneers in this field, the London physiologist Dr. Augustus D. Waller, F.R.S., at the age of 66 years.[6] The son of a distinguished physiologist whose name is perpetuated by his discovery of the phenomenon commonly described as wallerian degeneration in nerves, he doubtless received some inspiration in relation to the electrical phenomena of the heart from Burdon Sanderson, in whose laboratory he worked for a time. The younger Waller conceived the idea of studying the variation in the action currents of the human body by applying electrodes to suitable places on the surface, and observing the changes in a sensitive electrometer.[7] For this purpose he first employed a capillary electrometer of the type devised by Lippman. Waller's demonstration of the action currents of the human heart at the International Congress of Physiologists in London in the summer of 1890 was epoch-making. Subsequently, the more sensitive types of string galvanometers devised by Einthoven of Leyden came into use. Employed in connection with delicate photographic devices, they represent the instruments perfected into the models of the present day for electrocardiographic application.

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[2] Ohio News, J. A. M. A. **78**: 1060 (April 8) 1922.

[3] National Board of Medical Examiners, Current Comment, J. A. M. A. **66**: 475 (March 4) 1916, and **74**: 1104 (April 17) 1920.

[4] Page 1314.

[5] Lewis, T.: Clinical Electrocardiography. London, Shaw and Son, 1913.

NEED OF PRACTICAL LICENSING EXAMINATIONS

A study of the statistics published this week shows that the examination given by the average state licensing board is not a satisfactory test of the applicant's qualifications to practice medicine. In several states, graduates of inferior medical colleges and of institutions having little or no equipment for the training of physicians seem to have little difficulty in securing licenses. In most states the examination still consists of the answering in writing of a series of questions, some of which are to be found in ordinary quiz compends. No written examination, taken alone, is a proper test of the applicant's qualifications. It should be supplemented by practical laboratory and clinical tests, wherein the applicant must demonstrate his ability to examine a patient and make a reasonably accurate diagnosis. Although the value of these practical tests has been frequently referred to in the annual conferences on medical education and licensure, they are being utilized by only a few states. The licensing boards at present have an opportunity to see practical tests applied in the examinations conducted by the National Board of Medical Examiners. Cannot some satisfactory plan be arranged whereby the National Board and the state licensing boards can cooperate in establishing efficient examinations in all states? This would be of great service in providing a better guaranty to the public that only those properly qualified will be licensed to treat the sick.

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[6] London Letter, J. A. M. A. **78:** 1139 (April 15) 1922.
[7] Waller, A. D.: Phil. Tr. Roy. Soc. London (B) **180:** 169, 1889.

Association News

THE ST. LOUIS SESSION

Identification Certificates Necessary

In order to take advantage of the special fare authorized by the several passenger associations, it is necessary to deposit an "identification certificate" with the agent selling the railroad ticket. On request accompanied by a self-addressed, stamped envelop, these "identification certificates" may be secured by members and Fellows of the Association from the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago. The "identification certificate" is more than a means of identifying a physician as a member; it is an order on the local ticket agent directing him to sell a special rate ticket to St. Louis and return.

ROUND TRIP FARES AND PULLMAN RATES

Through the courtesy of the Illinois Central Railroad Company, the following table—an extension of the one published last week—has been prepared. This table announces the round trip excursion fare and the price for one-way Pullman accommodations.

		Fare	Lower	Upper	Drawing Room
Atlanta		$33.80	$6.75	$5.40	$24.00
Buffalo	Via Chicago	38.49	3.75[2]	3.00[2]	13.50[2]
Buffalo	Direct	38.49	7.50	6.00	27.00
Boston	Via Chicago	65.37	10.13[2]	8.10[2]	36.00[2]
Boston	Direct	65.37	12.00	9.60	42.00
Birmingham		26.97	5.63	4.50	21.00
Chicago		15.62	3.75	3.00	13.50
Cleveland	Via Chicago	28.65	3.75[2]	3.00[2]	13.50[2]
Cleveland	Direct	28.65	5.63	4.50	21.00
Columbus	Direct	23.04	4.50	3.60	16.50
Cincinnati	Direct	18.60	3.75	3.00	13.50
Denver		49.20	10.13	8.10	36.00
Detroit	Via Chicago	30.32	3.75[2]	3.00[2]	13.50[2]
Detroit	Direct	26.64	4.50	3.60	16.50
Des Moines	Via Chicago	30.00	3.75[2]	3.00[2]	13.50[2]
Des Moines	Direct	18.32	3.75	3.00	13.50
Duluth	Via Chicago	39.21	4.50[2]	3.60[2]	16.50[2]
Duluth	Direct	39.21	3.00[3]	2.40[3]	10.50[3]
El Paso	Via New Orleans	70.40	13.50	10.80	48.00
El Paso	Direct	69.93	13.50	10.80	48.00
Houston	Via New Orleans	44.10	9.75	7.80	34.50
Houston	Direct	44.10	9.75	7.80	34.50
Indianapolis		13.31	3.75	3.00	13.50
Jacksonville		50.90	10.50	8.40	37.50
Kansas City		15.06	3.75	3.00	13.50
Los Angeles	Via New Orleans	120.21	22.50	18.00	70.50
Los Angeles	Direct	110.46	22.50	18.00	79.50
Minneapolis	Via Chicago	31.11	3.75[2]	3.00[2]	13.50[2]
Minneapolis	Direct	31,11	5.63	4.50	21.00
Memphis		16.79	3.75	3.00	13.50
Milwaukee	Via Chicago	20.21	3.00[2]	2.40[2]	10.50[2]
New Orleans		38.06	7.88	6.30	28.50
New York	Via Chicago	59.48	9.00[2]	7.20[2]	31.50[2]
New York	Direct	57.09	10.88	8.70	39.00
Omaha	Via Chicago	37.10	4.50[2]	3.60[2]	16.50[2]
Omaha	Direct	22.65	4.50	3.60	16.50
Philadelphia	Via Chicago	53.48	8.25[2]	6.60[2]	30.00[2]
Philadelphia	Direct	52.23	10.13	8.10	36.00
Pittsburgh	Via Chicago	34.62	4.50[2]	3.60[2]	16.50[2]
Pittsburgh	Direct	33.36	6.38	5.10	22.50
Portland	Via Chicago	118.76	23.63[2]	18.90[2]	84.00[2]
Portland	Direct	118.76	22.50	18.00	79.50
St. Joseph	Via Kansas City	18.53	3.75[1]	3.00[1]	13.50[1]
St. Joseph	Direct	17.61	3.75	3.00	13.50
St. Paul	Via Chicago	31.11	3.75[2]	3.00[2]	13.50[2]
St. Paul	Direct via C.B.& Q.	31.11	5.63	4.50	21.00
San Antonio	Via New Orleans	49.98	10.88	8.70	39.00
San Antonio	Direct	49.98	10.88	8.70	39.00
San Francisco	Via New Orelans	120.21	22.50	18.00	79.50
San Francisco	Direct	110.46	22.50	18.00	79.50
Seattle	Via Chicago	119.90	23.63[2]	18.90[2]	84.00[2]
Seattle	Direct	119.90	22.50	18.00	79.50
Washington	Via Chicago	49.46	8.25[2]	6.60[2]	30.00[2]
Washington	Direct	48.81	9.00	7.20	31.50

1. From Kansas City. 2. To Chicago only. 3. To St. Paul only.

Reunion of Medical Officers

The Camp Merritt Base Hospital Officers' Association will hold a dinner on Friday evening, May 26, 1922, at the Planters Hotel, St. Louis, at 7:30 p. m. Dr. David P. Ferris, 1000

Carleton Building, Sixth and Olive streets, St. Louis, is the chairman of the local committee on arrangements for this reunion. Physicians who have served at this base hospital and who will participate in this dinner are requested to write to him for detailed information.

Jefferson College Smoker

The Alumni of Jefferson Medical College of Philadelphia will hold a smoker at Missouri Athletic Association, St. Louis, Wednesday, May 24, 8:30 p. m. Those desiring to attend should notify the committee, Horace E. Happel, A. P. Munsch and H. R. Barton, chairman, 315 University Club Building, St. Louis.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Health Officer Reelected.—Dr. Samuel W. Welch has been reelected state health officer for a term of five years.

Health Lecturer Fined.—It is reported that C. Khiro, an ex-service man, who was arrested recently in Anniston for giving a series of health lectures in which he guaranteed to cure a number of ailments, was fined $50 and costs, April 6, for practicing medicine without a license.

Malaria in the Southern States.—A thoroughly equipped laboratory has been established in Brewton for the study of the various breeds of mosquito, the means of transmission, and the control of malaria as it exists in the Southern states. Dr. A. M. Barber, who has spent several years studying this disease in the Philippine Islands and other insular possessions, is in charge of the laboratory.

State Medical Meeting.—At the fifty-fifth annual meeting of the Medical Association of the State of Alabama, held in Birmingham, April 18-21, under the presidency of Dr. Dyer F. Talley, the following officers were elected for the current year: president, Dr. Walter S. Britt, Eufaula; vice president of the northern division, Dr. William D. Gaines, La Fayette, and secretary, Henry G. Perry, Montgomery (reelected). The next meeting of the association will be held in Mobile, April 17-20, 1923. The association was entertained by the Jefferson County Medical Society.

CALIFORNIA

Municipal Fly Catching.—The city of Riverside has created the office of municipal fly catcher, the purpose of which is to make a flyless city. Traps are baited with old bananas and other foods and a spraying machine is used. Daily rounds are made through alleys, slaughtering plants and other places where flies are in evidence.

Judgment Reversed.—It is reported that the court of appeals recently reversed the judgment of the superior court in the action brought by Dr. Philip W. Dyment, Pasadena, against the state board of medical examiners, who issued a reciprocity certificate to practice medicine to Dr. Dyment in 1917, and in 1920 revoked it on the grounds that the physician had been guilty of fraud in obtaining it. The superior court confirmed this, but the district court of appeals reversed the judgment, stating that Dr. Dyment had a right to know what the specific charges against him were, which had not been stated by the medical examiners.

CANAL ZONE

Reception for Dr. Strong.—President Porras, Panama, held a reception for Dr. Richard P. Strong, professor of tropical medicine, Harvard University, April 7. Dr. Strong is director of the Gorgas Memorial Institute, which will be established at Panama, and recently arrived there to make a tour of the interior for investigation purposes.

GEORGIA

New Medical Association.—At a meeting of the physicians of Burke County, held recently in Savannah, the Burke County Medical Association was organized, with Dr. Cicero H. Cox as president.

ILLINOIS

Foreign Professors to Address Meeting.—At the annual meeting of the Tri-State Medical Association to be held at Peoria in the fall, Prof. Rafaele Bastianelli, Rome, and Prof. Théodore Tuffier, Paris, will give addresses.

New County Health Unit Established.—At a conference in Jacksonville, April 19, between Dr. Isaac D. Rawlings, state director of public health, and local county and city officials, final arrangements were completed for the establishment of a public health unit in Morgan County. The initial personnel of the organization will consist of a full-time county health officer and two rural public health nurses. The expenses of the public health unit will be partially borne by the International Health Board.

Chicago

Personal.—Prof. Alexander Maximoff, professor of histology and embryology at the Imperial Academy, Petrograd, has arrived in Chicago from Russia to accept an appointment in the department of anatomy at the University of Chicago.——Dr. Gustavus Blech recently addressed the Elgin Medical Club and was elected an honorary member of the society.

Report of Committee on Medical Needs of Chicago.—At a meeting of the governors of the Institute of Medicine, March 24, the chairman was directed to appoint a committee to make recommendations concerning medical needs of Chicago. This committee has reported that in the opinion of its members results of great value may be obtained by the careful study of concrete medical needs, e. g., the needs of otology and other special branches for increased facilities for scientific study and more liberal support; the needs of certain classes for better hospital care; the need for promotion of medical jurisprudence in its various phases, and the need for a better publicity and education in respect to medical matters. The committee has recommended that small committees be designated from fellows of the institute to study particular problems and to report their results and recommendations to the governors; furthermore, that the board of governors support the work now recommended by such financial aid as may seem necessary to secure the most desirable results.

INDIANA

Radium Lost.—It is announced by Dr. Arthur Cole, Indianapolis, that he and his partner recently lost through theft 55 mg. of radium, which was taken from a combination safe. Fifty mg. in two tubes in an applicator were overlooked by the thief. Evidence in connection with the theft points to an organized gang of radium thieves, going about the country. It is possible that a thief with a radium burn may come under the notice of some physician with this information in mind.

Personal.—Dr. Homer B. Gable has resigned as city health officer of Monticello.——Dr. Chester N. Frazier of the Irene Byron Tuberculosis Sanatorium, Fort Wayne, will leave about July 1, for China to accept a position with the Rockefeller Institute, Peking.——Dr. Byron E. Biggs, superintendent of the Mississippi Colony for Feebleminded, has been appointed superintendent of the Fort Wayne State School for Feeble-Minded Youths.——Dr. William J. Molloy, Muncie, was awarded $2,500, against the Lake Erie and Western Railroad for damages to his automobile.——Dr. Charles S. Woods has resigned as superintendent of the Methodist Hospital, Indianapolis.——Dr. William Shimer, bacteriologist and pathologist of the Indiana State Board of Health, has resigned to accept the same position at St. Vincent's Hospital, Indianapolis. It is planned to reorganize and extend the hospital service.

KANSAS

Kansas Public Health Association.—At the annual meeting of the association held in Kansas City, April 11, the following officers were elected for the ensuing year: president, Dr. Earle Brown, Topeka; vice president, Dr. Milton O. Nyberg, Wichita (reelected), and secretary, Dr. J. C. Montgomery, Columbus.

KENTUCKY

Personal.—Dr. Louis E. Young has been appointed county physician of McCracken County for a two-year term, to succeed Dr. R. Holt.——Dr. Leslie Logan has been elected president of the Knox County Medical Society.——Drs. James A. Ryan and Clifford N. Heisel, both of Covington, sailed for Europe, April 12, where they will take graduate courses in Vienna.

LOUISIANA

New Medical Society.—At a meeting of the secretaries of the various parish medical societies held during the annual meeting of the Louisiana State Medical Society, at Alexandria, April 11-13, the Association of Parish Medical Society Secretaries was organized. The following officers were elected for the ensuing year: Dr. Buford K. Parrish, Mansfield, president, and Dr. Mary Elizabeth Bass, New Orleans, secretary. Meetings of this association will be held annually, in conjunction with the state meeting.

New Science Building.—Ground was broken, April 10, for a new building which will accommodate the departments of botany, zoology, pharmacology and physiologic chemistry at Tulane University of Louisiana School of Medicine, New Orleans. The building is to be four stories high and will be erected at a cost of about $180,000, $125,000 of which has been subscribed by the general education board. The laboratory will be equipped at a cost of $30,000 and it is expected that the institution will be completed in December.

MAINE

Physicians for Small Towns.—Plans for supplying physicians for small towns in Maine which at present have none have been formulated by the council, secretaries and permanent committee of the Maine Medical Association. The furnishing of young physicians for such localities will be presented to the medical colleges throughout the country by the foreign relations committee, of which Dr. Sylvester J. Beach, Manchester, is chairman.

MARYLAND

Personal.—Dr. Warfield Theobald Longcope, New York City, has been appointed professor of medicine, Johns Hopkins University Medical Department, Baltimore, and physician in chief at the Johns Hopkins Hospital, beginning July 1, when the one-year term of Dr. H. Canby Robinson will expire. Dr. Robinson went to the hospital with the understanding that at the end of one year he was to return to his post as professor of medicine and dean of the Vanderbilt University Medical Department, Nashville, Tenn. Dr. Longcope was formerly Bard professor of medicine at Columbia University, and physician in chief at the Presbyterian Hospital, New York City.

Smallpox in Harford County.—From one case of smallpox at Havre de Grace, resulting fatally, officials of the state department of health have traced three new cases which have developed there and in the vicinity, after the patients had come in contact with the first patient while in the hospital at Havre de Grace. The situation is in charge of Dr. F. W. Steiner, health officer at Havre de Grace, and Dr. W. B. Kirk, health officer of Harford County. The state department, represented by Dr. Josiah S. Bowen and Dr. John Collinson, Jr., who is in charge of the diagnostic work, will assist the local man. The state officials will begin an inspection of the schools and vaccinate all children who have not recently been vaccinated. The department of health has put quarantine restrictions about the Havre de Grace Hospital, and the commanding officer at the Aberdeen Proving Grounds has ordered vaccination of the military personnel.

MASSACHUSETTS

Health Board Organizes.—The Arlington Board of Health was organized recently. Dr. Ezekiel Pratt was appointed physician to the board and bacteriologist.

Restoration to Practice.—Eldredge D. Atwood, an osteopath, who shot and killed another member of the cult several years ago, has been reinstated as practitioner of medicine in the commonwealth by the board of registration in medicine.

Public Lectures at Harvard.—Dr. William C. Quinby delivered the Harvard Medical School public lecture on "Diseases of the Bladder and Prostate," April 9. Dr. Harris P. Mosher will discuss "Deformities of the Nose and Diseases of the Esophagus," April 23.

Health Conference.—Mayor Curley called a conference of all life, health and accident insurance companies and other organizations engaged in health work, in Boston, April 11, in an endeavor to enlist public interest in the proposed establishment of new health units in the congested districts.

Public Health Courses.—The Massachusetts Institute of Technology, in cooperation with the university extension of the Massachusetts Department of Education, announces summer courses in public health and health education, from July 10 to August 11, at the Massachusetts Institute of Technology, Cambridge.

MICHIGAN

Hospital Appointments.—Dr. Albert Wehenkel, who recently resigned as superintendent of the Roosevelt Memorial Hospital, Camp Custer, has been appointed superintendent of the American Legion Hospital, Battle Creek. Dr. Wilfred Haughey has been named chief of staff. Dr. Rudolph H. Lambert, Detroit, has been appointed superintendent to succeed Dr. Wehenkel, and Dr. C. J. Addison, former health officer of Muskegon, has been appointed assistant superintendent in the same institution.

Isolation of Typhoid Carriers.—According to a new ruling of the state department of health, persons contracting typhoid fever shall be isolated until a specimen of the feces taken not less than one week after clinical recovery from the fever has been found free from the typhoid bacillus. Patients were formerly released on apparent recovery without any scientific proof that they would not spread the infection. Forty-two counties have reported cases of typhoid since January 1, and in the first two months of the year twenty-four deaths occurred.

MINNESOTA

Hospital News.—Plans have been completed for the new tuberculosis sanatorium to be erected by the state board of control at Fergus Falls.—A $60,000 hospital building will be erected at Owatonna.

Southern Minnesota Medical Association.—The midsummer meeting of the association will be held at Rochester, June 19-20, under the presidency of Dr. William F. Braasch. In purchasing railroad tickets, a certificate will entitle visitors to one-half return fare. Mr. Roy Watson is chairman of the committee on arrangements.

MISSISSIPPI

Legislative News.—A new dental law has been passed by the state legislature. Among the provisions are: licensing by examination and recognition of dental hygienists, heavier penalties for practicing dentistry and dental hygiene without a license, penalties for fraudulent representations in examinations for license, examination fee $25, authority for the board of dental examiners to establish reciprocal relations with other states having equal standards of requirements, and discontinuance of temporary licenses.

MISSOURI

Personal.—Dr. Minard J. Armstrong has resigned as superintendent of the Jasper County Tuberculosis Hospital, Webb City, effective June 1.——Dr. Edgar E. Whiteside, Elvins, has been elected president of the St. Francois County Medical Society.

New Health Organization.—At a meeting held in Bolivar, April 6, the Polk County Health Association was organized, with William H. Picketts, U. S. Public Health Service, as president. Dr. Thomas Parran, Jr., Jefferson City, joint representative of the U. S. Public Health Service, the Rockefeller Foundation and the Missouri State Board of Health, was present at the meeting.

MONTANA

Physician Honored.—The Silver Bow Medical Association gave a dinner in honor of Dr. Isadore D. Freund, April 12, at Butte. Dr. Freund is a graduate of the University of Michigan, 1872, and recently celebrated his fiftieth year of practice. Dr. Thomas B. Moore was toastmaster.

NEBRASKA

Physician's Widow Awarded Judgment.—Mrs. Molly Rathburn, widow of the late Dr. Grove Rathburn of Fremont, recently won her second decision against the Globe Indemnity Company for $8,242. The company had refused to settle the claim, stating that, though Dr. Rathburn died two weeks after receiving injuries to his hip, during that time he was not altogether confined to his bed, and that the company was not liable for damages, because the policy holder must be completely disabled from the time of his injury until death before the beneficiaries could make any claim.

NEW JERSEY

Schick Test Clinic.—A clinic has been established at the city hall, Elizabeth, to make the Schick test available to the public. A small fee will be charged, and, if susceptibility to diphtheria is shown, the patient will be advised to have the family physician administer the toxin-antitoxin.

Hygiene Conference.—A social hygiene conference for the women of New Jersey was held, April 10, under the auspices of the Jersey City Board of Health, the state department of health and the U. S. Public Health Service. Dr. Daisy M. O. Robinson, regional consultant, U. S. Public Health Service, gave an address on "The Aim of a Women's Social Hygiene Conference." Dr. Margaret K. Sullivan opened the meeting.

NEW YORK

Lucien Howe Prize.—The Lucien Howe prize of $100, conferred by a committee appointed by the house of delegates of the Medical Society of the State of New York for the best original contribution to the knowledge of surgery, preferably ophthalmology, has been awarded to Dr. Arthur J. Bedell of Albany for an essay on cataract.

Exposition for Masonic Hospital.—A mammoth exposition is to be held in New York, May 8-13, to raise funds for the maintenance of the Masonic Memorial Hospital at Utica. The hospital was completed at a cost of $1,000,000 and $125,000 will be required yearly for maintenance for the next five years, until the endowment fund will be ample to cover its operation.

New York State Association of Public Laboratories.—The sixth annual meeting of the association was held in Albany, April 19. The following officers were elected for the ensuing year: president, Dr. Warren B. Stone, Schenectady, and vice president, Dr. John S. Noble, New York City. Dr. Hideyo Noguchi, New York City, spoke on "Leptospiras, Pathogenic and Nonpathogenic."

Aid for Russians.—Dr. Haven Emerson recently addressed letters to the presidents of 150 medical societies in the state, requesting aid for Russian physicians who lack all the essential tools of their profession. Dr. Emerson is the New York state chairman of the National Committee of Physicians and Surgeons, which was organized to appeal to the medical profession of New York on behalf of the American Medical Aid for Russia Committee, 103 Park Avenue, New York City.

The Women's Medical Society of the State of New York Elects.—This organization, which held its annual meeting in Albany on April 17, elected the following officers for the ensuing year: president, Dr. Harriet M. Doane, Fulton; first vice president, Dr. Clara A. March, Buffalo; second vice president, Dr. Marie L. Chard, New York City; third vice president, Dr. Emily Dunning Barringer, New York City; secretary, Dr. Mary Dunning Rose, New York City; treasurer, Dr. Florence A. Sherman, Albany.

Legislative News.—The Senate bill introduced by Senator Knight relative to the practice of nursing has been signed by Governor Miller, and is now known as Chapter 288, Laws of 1922.——Assembly Bill No. 1287, relative to habit forming drugs, passed both houses, but was vetoed by the governor. ——The assembly bill introduced by Dr. Lattin, having to do with the licensing of midwives, was signed by the governor and becomes Chapter 501.——The Medical Practice Bill, introduced by Senator Bloomfield, and in the assembly by Dr. Lattin, was disapproved by the governor.

Home for Indigent Physicians.—The home of David A. Mountain, a farm of 200 acres, situated in Allegany County, has been donated to the Physicians' Home, an institution incorporated under the laws of the state of New York, and will be converted into a home for indigent physicians, and physicians' widows and orphans. This gift was made by the present owners, Drs. William H. Mountain and Stephen V. Mountain, Olean, with the provision that the institution should be called the David A. Mountain Memorial, in memory of their father. Laboratories for research work and experiments, equipped with modern improvements, will be established in the home.

State Society Elects.—At its one hundred and sixteenth annual meeting held in Albany, April 18-20, the Medical Society of the State of New York elected the following officers for the ensuing year: president, Dr. Arthur W. Booth, Elmira; vice president, Dr. Nathan B. Van Etten, New York City; speaker of the house of delegates, Dr. E. Eliot Harris, New York City; vice speaker, Dr. George M. Fisher, Utica; secretary, Dr. Edward Livingston Hunt; assistant secretary, Dr. Wilbur Ward, New York City; treasurer, Dr. Seth Milliken, New York City; assistant treasurer, Dr. Charles Gordon Heyd, New York City.

New Site for Veterans' Hospital.—After a delay of thirteen months, a site and plans for a hospital for tuberculous veterans have been approved by the Treasury Department, the White Committee, and the National Tuberculosis Association, and arrangements for taking over the property are now being made. The property is the estate owned by Mrs. A. W. Church in Port Chester, N. Y., and comprises about 100 acres of rolling country and woodland. Construction work on the new hospital will be begun immediately and will be completed within six or eight months.——The Bronx General Hospital in New York, officially known as United States Veterans' Hospital No. 83, is now completed and ready for occupancy. This plant was purchased ready built at $2,000,000 and remodeled at a cost of several hundred thousand dollars.

Smallpox in New York State.—The state department of health has renewed its recent warning that New York is in danger of an invasion of smallpox. In Connecticut more than 250 cases have occurred since the first of the year and reports indicate that cases have been frequent along the Canadian border. Five cases have recently been reported from one town in St. Lawrence County, New York. A very severe case has been reported from the St. Regis Indian Reservation. The patient is an Indian who has been visiting three weeks in Canada and who developed smallpox six days after his return. State Health Commissioner Dr. Hermann M. Biggs points out that New York is facing a simultaneous attack on two fronts and that the best efforts of state and local health departments will be necessary to prevent serious local outbreaks.

New York City

Encephalitis in New York.—An increase in the number of cases of epidemic encephalitis reported to the health department during the past few weeks is announced. While the number of cases is still relatively light, there have been more than 300 cases reported since the first of the year, with seventy deaths, against 654 cases in 1920, and 528 cases in 1921.

Associated Outpatient Clinics.—At a meeting held in New York City, April 6, the following officers were elected for the ensuing year: president, Robert Olyphant; vice president, Dr. Alexander Lambert, and secretary, Dr. Willis G. Neally. Resolutions were adopted for unifying hospital wards and outpatient departments. The pediatric section is being reorganized and a section on ophthalmology has recently been established.

Two New Hospitals for Veterans Assured.—Major Leon Fraser, director of the Veterans' Bureau for the New York District, announces that with the signing of the Langley bill, providing for an appropriation of $17,000,000 for the erection of hospitals by the bureau, New York will have a tuberculosis hospital for ex-service men in the city and another in the mountains. Patients now in hospitals outside the district will be transferred to the Kingsbridge Hospital for nervous diseases.

Conservative Prescribing of Alcoholics.—The prohibition director of New York states that 12,500 physicians of the state, holding permits to prescribe alcohol in 1921, used only 20 per cent. of the prescription blanks allowed them, an average of only seventy-six prescriptions out of the allotment of 400 for the year. The *Weekly Bulletin* of the New York City Department of Health, commenting on this statement, says it is an eloquent answer to all who had suspicions that physicians would abuse their privilege to prescribe alcoholics.

Association for Medical Education Seeks Carnegie Gift.—The New York Association for Medical Education has issued an appeal to physicians to subscribe $3,000 in order to avail itself of a gift of $12,000 from the Carnegie Corporation conditioned on the former amount being raised. The association points out that it aims to make New York a progressive medical center by coordinating existing institutions and organizations so that men all over the country may be attracted by the opportunities offered in New York for the study of medicine. The committee in charge is composed of Drs. Haven Emerson, James F. McKernon, Otto V. Huffman and George Kosmak.

Personal.—Dr. Francis M. Rachemann of Boston read a paper on the "Treatment of Asthma" before the section on medicine of the New York Academy on April 18.——Col. R. H. Elliot of London, Dr. Ignacio Barraquer of Barcelona and Dr. E. Gallemaerts of Brussels gave presentations before the section on ophthalmology of the New York Academy of Medicine on the evining of April 17.——Dr. Henry H. M. Lyle has been awarded the Distinguished Service Medal for exceptionally meritorious services as director of the Army

Evacuation Ambulance Companies, A. E. F., in France during the World War.——Dr. Morris H. Frantz has been appointed attending neurologist to St. Vincent's Hospital, Staten Island.

Physicians Discuss Compensation Wrongs.—A joint meeting of the Medical Society of Kings County and the Professional Guild of Kings and Queens counties was held recently, for the purpose of discussing the Workmen's Compensation Act and of establishing a better understanding between physicians and insurance companies working under that act. The meeting was addressed by Henry D. Sayer, industrial commissioner of New York state, and Thomas J. Curtis, vice president of the state federation of labor.——The physicians are upholding the bill which has been introduced at Albany for several years, which would give injured employees the free choice of physicians and thus eliminate the insurance companies' practice of dictating to both employer and employee in the selection of a doctor.

NORTH CAROLINA

Joint Meeting.—A meeting of the Eighth District Medical Society and the hospital staffs of Winston-Salem, Greensboro, and High Point was held at High Point, March 28. Dr. Walter F. Cole, Greensboro, was elected president of the medical society, to succeed Dr. David A. Stanton, High Point, and Dr. John A. Williams was elected secretary.

Hospital News.—Exercises were held, April 6, for the opening of the new North Carolina Institution for the Feeble Minded, Charlotte. Dr. Hubert Royster, president of the state medical society, gave an address.——The former home of Dr. Wilson, containing 18 acres, and a house and lot adjoining, will be the site of the new $100,000 hospital to be erected at Shelby.——The Ambler Tuberculosis Sanatorium has recently been opened at Asheville.

OHIO

Society Changes Name.—The Allen County Medical Society recently changed the name of the organization to the Academy of Medicine of Lima. At a meeting, April 4, under the presidency of Dr. Aaron F. Basinger, Dr. Charles L. Bonifield, Cincinnati, gave an address on "The Human Melting Pot—A Fallacy."

Leprosy in a Chinese.—The first case of leprosy reported in Cleveland in nine years is under observation in the special ward of the City Hospital. The patient is a Chinese and steps will be taken to deport the man to the leper colony at Molokai, H. I., immediately, it was announced. In the meantime chaulmoogra oil treatment is being administered.

Akron Medical Library.—The Summit County Medical Association recently organized the Akron Medical Library Association, with the following officers; president, Dr. Edward S. Underwood; vice presidents, Drs. J. H. Seiler and Carl R. Steinke; secretary, Dr. John G. Gage, and treasurer, Dr. George M. Logan. The purpose of the new association is to equip and maintain a complete modern library of medical books and journals for the use of physicians, dentists and lawyers of Summit County. There will be several thousand volumes under the direction of Dr. Roy G. Pearce.

Supreme Court Upholds Ohio Law.—The United States supreme court has recently declined to review the opinion of the Ohio state court of appeals as affirmed by the state supreme court which held that chiropractors cannot legally practice in Ohio unless they have first secured licenses from the state medical board. The case was that of Luther M. Nesmith, a notorious unlicensed chiropractor of Wood County, who carried his case over several months of litigation through all the courts after having been indicted, tried and convicted for practicing without a license. This final action by the United States supreme court clears the way for vigorous prosecution of chiropractors who attempt to continue to practice in Ohio without first securing licenses.

OREGON

Personal.—Dr. Nellie S. Vernon, Astoria, has been appointed city and county health officer for the fifth time.——Dr. William D. Nickelsen, Hood River, has sailed for Europe, for service in the famine district area.

Health Institute.—For the betterment of the public health, a series of clinics, lectures and conferences was held in Portland, April 11-15, under the auspices of the U. S. Public Health Service and the state board of health.

PENNSYLVANIA

Mellon Lecture.—Sir Thomas Lewis, F.R.S., F.R.C.P., D.Sc., University College Hospital, London, England, will deliver the seventh Mellon lecture before the society for biological research of the school of medicine, University of Pittsburgh, May 8, on the subject of "Interpretations of the Initial Phases of the Electrocardiogram, with Special Reference to the Theory of 'Limited Potential Differences.'"

Condemnation of Olives.—The director of the Bureau of Foods of the State of Pennsylvania is investigating a large quantity of repacked ripe olives recently shipped into that state and which he has been advised are being shipped to some other state. The olives were found by the bacteriologists of the department to be soft and mushy in consistency and insipid to the taste as well as unfit for human consumption. So far as known, no sickness has been caused through this shipment.

Philadelphia

Campaign to Complete Hospital.—A campaign to raise $100,000 for the completion and equipment of the Northern Liberties Hospital has been opened by the board of trustees of the institution. The cornerstone of the hospital was laid several weeks ago.

War on Fake Doctors.—Mayor Moore instituted a campaign against illegal medical practitioners in Philadelphia after a conference with Dr. John Norman Henry and Dr. George A. Knowles of the Philadelphia County Medical Society. The mayor instructed Director Cortelyou that the department of public safety should give all possible assistance to the state authorities and the medical society in apprehending the illegal practitioners who are said to have been increasing in numbers here since the war.

Personal.—Dr. Thomas C. Stellwagon, Jr., is in the Jefferson Hospital suffering from a broken fibula, as a result of a fall on a slippery street.——Dr. John D. Donnelley, lately with the Phipps Institute, has been appointed assistant to the chief of the child health division, state department of health.——Sir Thomas Lewis, M.D., F.R.S., of London, will deliver the fourth Nathan Lewis Hatfield lecture, May 5, at the College of Physicians, his subject being "The Action of Digitalis in Cases of Auricular Fibrillation and Flutter."——Dr. Robert G. LeConte, chief surgeon of the Pennsylvania Hospital, addressed the graduate class of the Lankenau Hospital Nurses' Training School, April 19.

To Plan Training of Feebleminded.—Teachers of special classes for feebleminded and backward children from all parts of the state gathered at the University of Pennsylvania to work out from their own experience a program for statewide care and training of feebleminded children. The meeting, which is the first of its kind in any state except Wyoming, took place in Logan Hall, University of Pennsylvania. It is the result of invitations sent out by the Philadelphia Special Class Teachers' Association. There are approximately 3,400 mentally defective children in the Pennsylvania public schools, according to Dr. Francis N. Maxfield, director of the bureau of special education of the department of public instruction.

SOUTH CAROLINA

Personal.—Dr. William J. Pettus, Charleston, who has been on special duty as medical officer in charge of the office of the U. S. consul general in England, has returned to this country.——Dr. Bascomb L. Chipley has resigned as physician in charge of the Greenville Free Clinic, and has accepted a position with a medical house in New York. Dr. James E. Daniel has been put in full charge of the clinic.

State Medical Meeting.—At the seventy-fourth annual meeting of the South Carolina Medical Association, at Rock Hill, April 18-20, the following officers were elected for the ensuing year: president, Dr. Charles Fred Williams, Columbia; vice presidents, Drs. Samuel Lindsay, Winnsboro, and Joseph Roddy Miller, Rock Hill, and secretary-treasurer (reelected), Dr. Edgar A. Hines. The next meeting will be held in Charleston, in April, 1923. This will be a "home coming" meeting, to celebrate the seventy-fifth anniversary of the founding of the association in Charleston.

TENNESSEE

Restrictions of Narcotics.—New and more rigid restrictions to govern the prescribing of narcotics by physicians have been issued by the department of internal revenue, Chattanooga.

State Medical Meeting.—At the eighty-ninth annual meeting of the Tennessee State Medical Association, held in Memphis, April 11-13, under the presidency of Dr. William Britt Burns, the following officers were elected for the ensuing year: president, Dr. Holland M. Tigert, Nashville; vice presidents, Drs. Frank A. Jones, Memphis, James R. Bone, Lebanon, and Hampton L. Fancher, Chattanooga; secretary-editor, Dr. Larkin Smith, Nashville, and treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected).

Personal.—Dr. Reese Q. Lillard, Lebanon, has been elected secretary of the state board of health to succeed Dr. Olin West, who resigned recently.——Drs. Colvin C. Perdue and Earl C. Ford, Knoxville, have been elected medical inspectors of that city.——Dr. Robert P. Oppenhimer, Knoxville, has been appointed a member of the board of education.——Dr. John D. Carlton, Union City, has been elected president of the Obion County Medical Society, and Dr. Ira O. Park, secretary.——Dr. Harris T. Collier, McKenzie, was elected president of the Carrol County Medical Society, recently.

UTAH

Summer School.—Plans have been completed by Prof. Milton Bennion, dean of the University of Utah, for courses in medicine, to be held during the summer months at the university, beginning June 7. Students will be able to take a full quarter's work in anatomy and bacteriology, as well as the required premedical work. A psychology clinic will be one of the special features, under the direction of Dr. George S. Snoddy; also mental and physical health lectures.

VIRGINIA

Walter Reed Medical Society.—The second meeting of this society will be held in Williamsburg, May 10-11, under the presidency of Dr. Harry A. Tabb, Gloucester. This society was organized in the spring of 1921.

Hospital News.—The Sarah G. Jones Memorial Hospital, Medical College and Training School for Nurses, Inc., Richmond, was granted a charter recently. This institution was established for colored people.——The Edward McGuire Memorial Association will endow a cot in the Crippled Children's Hospital, Richmond, as a memorial to the late Dr. Edward McGuire.

State Medical Examiners.—The governor has appointed the following physicians as members of the state medical examining board for a period of four years: John H. Ayres, Accomac; Philip St. L. Moncure, Norfolk; Hack U. Stephenson, Toano; J. Bolling Jones, Petersburg; Isaac C. Harrison, Danville; John W. Preston, Roanoke; Philip W. Boyd, Winchester; Samuel W. Maphis, Warrenton; William W. Chaffin, Pulaski; Robert Glasgow, Lexington; Garnette W. Johnson, Danville, and Dr. Edward H. Shackelford, Richmond.

Personal.—Dr. Walter Nelson Mercer has been appointed clinical physician in charge of the tuberculosis division of the Richmond Health Bureau, to succeed Dr. Dean B. Cole, who resigned recently.——Dr. Richard R. Nevitte, Temperanceville, lost his home by fire, March 4. The estimated loss was $20,000.——Dr. James McLean Rogers, after spending several years in Soonchun, Korea, has returned to his home at Amelia.——Dr. Stephen Harnsberger has been elected president of the Warrenton Medical Society.——Dr. Garnette W. Johnson, Danville, has been elected member of the medical examining board of Virginia.

WASHINGTON

Hospital News.—The Mount Vernon General Hospital, Mount Vernon, has been purchased by William Hayton. Miss M. MacMillan will remain as superintendent of the institution. ——The renovated government hospital at Walla Walla will be officially opened, May 12, National Hospital Day.

Personal.—Dr. Arthur B. Cook resigned as health officer of Anacortes, April 22, and left for Alaska. Dr. Austin Shaw has been appointed to succeed him.——Dr. Maybelle M. Park, Seattle, formerly assistant medical inspector of public schools, has been appointed director of the juvenile department of Wisconsin, at Madison.

WISCONSIN

Hospital News.—A new hospital will be erected at Prairie du Chien, to be known as the Prairie du Chien Sanatorium. ——Plans have been completed for the new community hospital, at Edgerton, to be erected at a cost of $50,000.

Wisconsin Surgical Association.—At the annual meeting of the association, Dr. Frederick J. Gaenslen, Milwaukee, was elected president, and Dr. Daniel Hopkinson, Milwaukee, reelected secretary-treasurer. On the last day of the session a joint banquet was held with the Milwaukee Medical Society.

PHILIPPINE ISLANDS

Food Experiment in Lepra.—Miss Hartley Embrey, food chemist of the Rockefeller Foundation, recently made an experiment with 200 lepers, 150 adults and fifty children, on Culion Island, to discover the effects and influence of food chosen by her. These lepers were separated from the others and given uniform food of mungo or fish for protein, and vegetables and rice for carbohydrates. Thirty-five per cent. of the adults and 80 per cent. of the children gained from 1 to 10 pounds (0.45 to 4.5 kg.) each in three weeks under this diet. Miss Embrey states that the colony needs money and proper supervision before any decided betterment in conditions can be effected.

CANADA

Physicians' Building.—A building will be constructed in Winnipeg to be used exclusively for physicians and dentists, in the near future. The rents will be controlled by the members of the association and the building will be erected on a side street in order to avoid the high rentals.

Personal.—Surg.-Gen. J. T. Fotheringham has resumed active duty as associate professor of medicine and clinical medicine, University of Toronto Faculty of Medicine, Toronto, Ont., after a period of five years. Dr. Fotheringham was assistant director of medical service of the Second Canadian Division in France and director general of medical service in Canada.

Hospital News.—The General Public Hospital, Chatham, Ont., recently opened the new wing, which was erected at a cost of $92,000. This addition to the building contains sixteen rooms for patients, and other rooms necessary for the administration and work of the institution. The warden of Kent gave the opening address, during which he presented the hospital with a check for $7,500, the second and final payment of the county's $15,000 grant for the wing. Dr. Tecumseh K. Holmes, Chatham, also gave an address.——The contract has been awarded for the erection of buildings for the Provincial Mental Government Hospital, Essondale, at a cost of $550,000.

GENERAL

American Association of Medical Milk Commission.—The annual meeting of the association will be held in St. Louis, May 22-23, in conjunction with the Certified Milk Producers' Association of America.

American College of Physicians.—At the sixth annual meeting of the college, in Minneapolis, the following officers were elected for the ensuing year: president, Dr. James M. Anders, Philadelphia; vice presidents, Drs. Frederick Tice, Chicago, and Charles C. Bass, New Orleans; treasurer, Dr. Clement R. Jones, Pittsburgh, and secretary, Dr. Frank Smithies, Chicago.

Medical Officers' Reunion.—The Camp Meritt Base Hospital Officers' Association will hold their annual dinner at the Yale Club, New York City, May 13, under the presidency of Dr. Edward S. Rimer, New York City. Another dinner will be given by the association at St. Louis, at the Planters Hotel, May 26.

National Child Health Council.—The first report of the council has recently been issued. This organization came into being in 1920 and was organized by the American Child Hygiene Association, the Child Health Organization of America, the National Child Labor Committee, the American Red Cross and the National Organization for Public Health Nursing. It is a venture in coordination in the interests of the child. An appropriation of $200,000 was made by the Red Cross for a demonstration in the methods of solving the health problems of children. Dr. Walter H. Brown is director of this work at Mansfield, Ohio, the town chosen for the experiment.

Red Cross Meeting.—At the meeting of the Council of the League of Red Cross Societies, at Geneva, March 28, Ernest P. Bicknell, director general of the civilian relief of the American Red Cross, stated that the American organization would guarantee the budget of the league for the next two years by paying any deficit, if there should be one. It was proposed at this meeting to hold an Oriental Red Cross Conference this year, also a Pan-American Conference as soon after that as possible. The headquarters of the society will be moved from Geneva to Paris, in order to reduce expenses $15,000 yearly. Germany has also been allowed to join the league, France having withdrawn her opposition.

LATIN AMERICA

Leper Colony.—A leper colony has been practically completed about 15 miles from Santo Domingo City, under the direction of the United States military government of Santo Domingo.

New Hospital in El Salvador.—A new institution, "Hospital Salazar," was opened recently at La Libertad, Salvador, and a ward for tuberculous patients was also completed at Santa Ana Hospital.

Quarantine Laws.—Changes in the Cuban quarantine regulations have been announced, whereby vessels from New Orleans will be required to fumigate every six months instead of after each voyage, as at present.

Medical Students in Argentina.—According to a statement by authorities of the University of Buenos Aires, there were during the year 1920, 5,712 medical students enrolled; i. e., over 45 per cent. of the total number of students in the university (12,441).

New Cuban Society.—At a meeting held recently in Havana, the Cuban Society of Gastro-Enterology was organized, the following officers being appointed: president, Dr. F. Grande Rossi; vice president, Dr. F. Torralbas; secretary, Dr. F. Solano Ramos, and vice secretary, Dr. Pedro Barillas. Rules and by-laws were also adopted at the same meeting.

Public Health Graduate Course in Brazil.—Dr. W. G. Smillie, the director of the Institute of Hygiene of the Medical School of São Paulo, has instituted a graduate course in public health for physicians engaged in sanitary work. Among the professors will be Dr. Carlos Chagas, Dr. Salles Gomes, Dr. Belizario Penna, Dr. Mario Pernambuco, Dr. E. Ribas, Dr. Paula Souza, Dr. Lindemberg, Dr. Pereira Gomes, Dr. Borges and Dr. Smillie.

Latin American Delegates to the International Ophthalmological Congress in Washington.—At the International Congress of Ophthalmology, in Washington, D. C., April 25-28, 1922, are the following delegates from Latin America: Dr. G. M. Fernández, Cuba; Dr. Daniel M. Vélez and Dr. Antonio F. Alonso, Mexico; Dr. F. Pacheco Luna, Guatemala; Dr. Demaría, Argentina and Dr. Mejía, Bolivia. Dr. F. Poyales of Madrid will represent Spain.

Personal.—Dr. L. Morquio, a prominent pediatrician of Uruguay, has been appointed a corresponding member of the Academy of Medicine of Paris.—The government of Paraguay has engaged Dr. Pietro Marogna, assistant professor of clinical surgery of the Medical School of Genoa, Italy, to fill the chair of surgery in the Medical School of Paraguay.——The *Brazil-Medico* describes the banquet tendered recently by the medical faculty of S. Paulo to Dr. R. Pearce and Dr. F. Russell of the Rockefeller Foundation. The secretary of the interior presided at the banquet.——Dr. C. Bourroul was the guest of honor at a lunch given to celebrate his nomination as director of the medical faculty of S. Paulo. The tables were in the shape of a C and B.

Mary Kingsley Medal Awarded to Brazil.—The *Revista Medico-Cirurgica do Brazil* relates that the Liverpool School of Tropical Medicine has awarded the Mary Kingsley medal to the Oswaldo Cruz Institute of Rio de Janeiro in appreciation of the scientific work of the late Dr. Oswaldo Cruz. Dr. Carlos Chagas is the director of the institute now, and the letter accompanying the medal states that the Liverpool school had decided to award this medal "For Devotion to Science" to Dr. Cruz, but was waiting for the close of the World War before making any awards. The letter continues: "In the meantime Dr. Cruz had died, and the school now confers the medal on the Oswaldo Cruz Institute as a tribute to the memory of one of the greatest sons of Brazil. As the institute founded by him is destined to be the leading one of the institutions for medical research in tropical America, it is only just that it should receive this token of appreciation. . . . Dr. Oswaldo Cruz cleared Rio of yellow fever in the face of great opposition to his plans, and this without any advertising. The spectacular method adopted at New Orleans left much to be desired; the military procedures enforced at Havana were not to be recommended, and the foreign press paid little heed to what Cruz was accomplishing. Even the Brazilian press paid little attention to it. But throughout the medical world and especially for the institutes of tropical medicine, the campaign and the success of Oswaldo Cruz were hailed with the greatest interest and admiration. . . . Of course Dr. Cruz had colleagues that were eminent in such work, Laveran, Manson, Golgi, Gorgas and Carlos Finlay, to mention only a few of the thirty-seven in mind who have advanced so materially the science of tropical medicine."

FOREIGN

Morison Lectures.—Prof. G. Elliot Smith will deliver the Morison lectures before the Royal College of Physicians of Edinburgh, May 1-5, on "Evolution of the Human Intellect."

Ranvier Legacy.—The late Professor Ranvier, whose death was mentioned in the Paris Letter on page 1213, bequeathed to the city of Roanne a part of his fortune for the construction of a sanatorium for the tuberculous.

Cancer Research Fund.—The managing committee of the Dublin Skin and Cancer Hospital, Dublin, Ireland, has founded the Cancer Research Fund. The research department will be built as an annex to the hospital, in which ample material is available for research.

Imprisonment for Careless Use of Disinfectant.—The *Hygienisk Revy* of Lund records that the courts have imposed a penalty of two months of imprisonment on J. F. Sjögren as, in his disinfection of a house with hydrocyanic acid, the fumes proved fatal for two persons.

Plague in Portugal.—Several cases of plague have been reported from different places in Portugal, including Lisbon, and quarantine has been established at the Spanish frontier. The disease, however, seems to be on the decrease, no new cases having been reported in Lisbon.

New Hospital.—A children's hospital has recently been opened at Alexandropol, in the southern Caucasus, with 2,700 beds and forty wards. When fully completed the hospital will have a capacity of 6,000 beds. The institution is financed entirely by the Near East Relief, from funds sent from America.

Course in Heart Disease.—A special graduate course in heart disease and the diseases of women will be given at Franzensbad, Czechoslovakia, September 22-24, by local and foreign teachers. This course follows the annual meeting of the German naturalists at Leipzig. For information apply to the Stadthaus, Franzensbad.

Memorial to Woman Physician.—A tablet dedicated to the memory of Dr. Elsie Inglis was unveiled at St. Giles' Cathedral, Edinburgh, March 21, by Dr. Mary Scharlieg, C.B.E. The inscription reads: "To the beloved and honoured memory of Elsie Maud Inglis, surgeon, philanthropist, founder in 1914 of the Scottish Women's Hospitals, for Service with the Allies in France, Serbia and Russia. Born 1864. Died on active service 1917. *Mors janua vitae.*"

British Medical Association.—The Malaya Branch of the association held its annual meeting at Singapore recently and the following officers were elected for 1922: president, Dr. W. Fletcher; vice presidents, Drs. E. A. Elder, G. B. McHutchison and J. Sharp, and secretary and treasurer, Dr. J. W. Scharff. Dr. Horn, medical director, Malaya, announced that the Fifth Congress of the Far Eastern Association of Tropical Medicine would be held in Singapore in 1923.

Tokyo Municipal Hygienic Laboratory.—Owing to the increased work of the laboratory in the etiology of disease and in sanitary arrangements and the construction and repair of roads, it is planned to enlarge the capacity of the institution. When this plan is put in operation, the chemical and bacteriologic departments of the laboratory will occupy separate buildings, and the staffs will be greatly increased, in order to cope with the extension of the work.

Hospital to Be Named After Cajal.—The organizing committee in charge of the arrangements for the proposed Cajal celebration has decided to build a modern hospital which will be named after Cajal. In order to facilitate the undertaking, the buildings for the proposed international health exhibition, to be held in Madrid in 1923, will be constructed in such a form that they can be easily converted to hospital uses. All modern improvements will be incorporated in the plans and the hospital will be the first one in Spain intended for the middle class.

Physical Development in Schoolchildren.—A census of the development of schoolchildren in Manchuria and Japan was taken recently for the sake of comparison. The result of 23,165 tests proved that the Manchurian children were taller than the Japanese between the ages of 7 and 11 years, but the Japanese children over 12 years of age were taller than the Manchurians; and this is reversed again between the ages of 13 and 14. The children of both sexes in Manchuria are heavier than those in Japan, the boys in both countries being better developed than the girls.

Congress of Radiology and Physiotherapy.—This congress, which was postponed last year owing to the threatened railway strike in Great Britain, will be held in London, June 7-10, under the presidency of Sir Humphry Rolleston, and under the auspices of the section of electrotherapeutics of the Royal Society of Medicine and the British Association for the Advancement of Radiology and Physiotherapy. There will be three sections: radiology, physiotherapy and electrology. Dr. Béclère, Paris; Dr. Murdoch, Brussels; Dr. Peremans, Antwerp, and Drs. Colombier and Tribout, Paris, will be among the speakers.

Psychology in Industry.—At a meeting of the newly incorporated National Institute of Industrial Psychology, in London, March 27, Dr. C. S. Myers, director of the Cambridge Psychological Laboratory, submitted a resolution emphasizing the need for applying its methods and aims to the better utilization of the human resources of the nation. He dwelt on the appreciation of industrial psychology in the United States and Germany, and stated that a system of vocational selection was being recommended to employers, not as a substitute for, but as supplementary to, the ordinary interviews with candidates for employment, as a means of assigning to each worker the most suitable task.

The Hansen Prize Foundation.—By the will of the late Prof. E. C. Hansen of Copenhagen a prize has been founded to consist of a gold medal and a sum of at least 2,000 crowns, to be awarded every two or three years for distinguished work of a microbiologic order, published within the preceding years in Denmark or elsewhere. It is proposed in 1922 to confer the medal on some worker in general not medical microbiology. The *Tijdschrift voor Vergelijkende Geneeskunde* gives the details of the foundation which is in charge of the chiefs of the Carlsberg Laboratory at Copenhagen. Prof. C. O. Jensen and Prof. S. P. L. Sörensen. Professor Calmette of Paris and Professor Theobald Smith of Princeton are also on the committee of awards.

Personal.—Mr. T. Gray Clegg, F.R.C.S., has been appointed university lecturer in ophthalmology, Manchester, England. ——Dr. Melis, Brussels, has been appointed the first president of the new section of the history of medicine of the Royal Society of Archaeology of Belgium.—Professor Ehlers, Copenhagen, has received the honorary degree of doctor from the University of Paris.——The University of Jena recently renewed the diploma of Professor Penzoldt of Erlangen on the fiftieth anniversary of his graduation.——The Belgian Académie de Médecine at Brussels recently elected as foreign members, Dr. L. Camus, chief of the vaccine service at Paris, Dr. L. Martin of the Institut Pasteur, and Dr. Nicolas of Alfort.——The Liége Société Médico-Chirurgicale has elected for the current year Dr. Hougardy as president; Dr. Stockis and Dr. Honoré, vice presidents, and Dr. Delrez, secretary.

The Polish Red Cross.—In addition to various foreign Red Cross organizations operating in Poland in recent years, that country founded an organization of her own in April, 1919. The peace-time program of the Polish Red Cross contemplates establishing nurses' training schools in each of the nine districts in which Poland is divided for Red Cross administrative purposes, the organization of public health courses, and courses in disinfection, and first aid. It is also contemplated to organize work rooms to teach disabled soldiers how to make medical supplies, to organize sanitary units for mobilization in case of war, and to collaborate with the ministry of health in popular health instruction by means of posters, pamphlets, and lectures. The organization of health centers will be undertaken on a wide scale. Child welfare work to which Poland's attention has been directed by recent activities of the American Red Cross, will be undertaken, and a special interest shown in the younger ex-soldiers. The extent of the work may be better judged by the budget, which for 1921 was 300,000,000 Polish marks.

Deaths in Other Countries

Dr. **E. F. Podestá** of Rosario, Argentina, president of the local public health service, aged 33.——Dr. **H. Schaumann,** formerly of the Tropical Disease Institute at Hamburg, later of the Physiology Institute at Halle, one of the early workers on beriberi. He was born in Brazil and was recently elected to membership in the "Leopoldina," aged 66.——Dr. **V. Berglund,** instructor in tuberculosis at the University of Lund, aged 45.——Dr. **E. Lorentz** of Buenos Aires, chief of the laboratory of the Military Hospital, a pioneer in the serodiagnosis of hydatid cyst.——Dr. **S. Garnier,** physician in chief of the Dijon asylum near Paris for twenty-five years, aged 73.——Dr. **Edwin Dening,** formerly president of the Oxford branch of the British Medical Association, died, March 7, in Gloucestershire, England, aged 67.——Dr. **James Erskine,** lecturer on aural surgery, Anderson's College Medical College, Glasgow, Scotland, died recently.——Dr. **William Sturdy Bramley,** formerly chaplain to the Manchester workhouse, having given up the practice of medicine to take holy orders, died in Devonshire, England, aged 84.——Lieut.-Col. **George Westby,** retired surgeon, R. A. M. C., died in Liverpool, recently, aged 76.——Dr. **Edwin Rayner,** formerly treasurer of the British Medical Association, died recently.——Dr. **John Turner,** author of "Pathology of Epilepsy," who was awarded the bronze medal of the Medico-Psychological Association for his article on "Appearances Indicating Phagocytosis in Brains of the Insane," in 1897, died recently, in England, aged 62.——Dr. **Charles Pinkerton,** founder and at one time president of the Southport Medical Society, England, died recently, aged 65.

Government Services

Distribution of Hospitalization Funds

Plans for the distribution of the $17,000,000 authorized by Congress for hospital construction for ex-service men are soon to be announced by the Veterans' Bureau at Washington, D. C. Recommendation for the construction of new hospitals, under consideration by Director Forbes of the bureau, include a program for supplying 12,000 beds for veterans suffering from mental diseases, according to a report recently submitted by a conference of specialists on mental diseases. Director Forbes has stated that the recommendations of the specialists have been under consideration by the bureau, and present indications are that these recommendations will be in part at least adopted. This hospital construction program would include a new hospital of 500 beds in the western part of Massachusetts in the Connecticut Valley, to receive patients from Vermont, New Hampshire and northern Connecticut. Fort Porter at Buffalo could be made available for patients in the western part of New York State, according to the report, which also suggested that an additional 200 beds be provided the hospital now at Perryville, Maryland, and 350 additional beds be provided at Gulfport, Miss. A new hospital of 500 beds, to be increased later to 1,000 beds, was recommended for the Seventh Veterans' Bureau District, which includes Ohio, Indiana and Kentucky, and a hospital of 1,000 beds, to be later increased to 1,500 beds, to be provided for District No. 8, which includes Michigan, Illinois and Wisconsin. A 500-bed hospital was recommended for District No. 9, which includes Iowa, Missouri, Kansas and Nebraska, and a similar institution for District No. 10, which includes Minnesota, North Dakota, South Dakota and Montana. A hospital of 250 beds to be later increased to 500 beds, was recommended for District No. 13, which includes Oregon, Idaho and Washington. This hospital would also care for patients from California, Nevada and Arizona. It was also recommended that the hospital now being built at Fort Logan H. Roots, Little Rock, Ark., with a capacity of 240 beds, be immediately increased to 440 beds, and ultimately to 750 beds.

Establishment of Base Hospital Units

In reorganizing the army, a large number of hospitals and other medical units, officered by members of the Officers' Reserve Corps, will be established. The War Department is new prepared to take the initial step in the organization of these units. Initial classification of those in the Reserve Corps has been completed, and the same principle will be followed in future appointments, to the end that officers may be carefully classified to insure assignments in accord with their special qualifications, previous service, and preference. It is planned, as far as practicable, to reestablish the old base hospitals (now called general hospitals) and to preserve the identity of the units that served during the World War. To meet the needs of the reorganized army, the organization of one or more of these units in every Class A medical school, and in every approved internship hospital is contemplated. General hospitals so formed will not be subject to disorganization in time of war by transfer of their personnel to combat units, which will be supplied with medical officers from the Territorial Assignment Group, to which suitable officers have already been assigned. The officer personnel for general, evacuation and surgical hospitals is thirty-eight, thirty-six, and eighteen, respectively. Further information of a specific nature concerning the organization of these units will be forwarded by the Surgeon General, on request.

Rehabilitation Work in Indiana

The Marion National Sanatorium, formerly the Soldiers' Home, National Military Home, Indiana, created by a congressional enactment in 1888, with an appropriation of $200,000, and consisting of 300 acres by the Mississinewa River, is being converted into a sanatorium for disabled veterans of the World War suffering from mental or nervous diseases. A part of the institution was opened in January, 1921, with thirty patients and a 330 bed capacity. The reconstructing of a modern sanatorium from the soldiers' home is well under way and, while the alterations are being made more than 800 patients are receiving treatment. There will be room for 150 additional ex-service men when the present changes are completed. The organization consists of more than 500 members, including twenty-three physicians, sixty graduate nurses, eleven educational aids, fifteen teachers, and other operative employees. The sanatorium has its own farm, laundry, postoffice, theater, water works, ice plant, heating and dry cleaning plant, and maintains a complete complement of shops, including a carpentering, a plumbing, a painting and a blacksmithing shop. A system of schools for the teaching of occupational therapy is provided and the prevocational training is conducted in the wards. It has fully equipped departments as follows: roentgen ray, biochemistry, gastro-enterology, pathology, bacteriology, basal metabolism, neurology, dental offices and a laboratory with three units. For amusement there are trained athletes who organize all kinds of games, and arrange boxing and wrestling matches. Another recreational feature is a portable moving picture machine which can be moved from ward to ward and the pictures thrown on the walls or on the ceiling if necessary. The former barracks are called cottages, and each one is complete, with its recreational center and sleeping quarters. The medical library of the main building contains more than 1,000 books and thirty current medical journals. The entire property of the home represents an expenditure of between $4,000,000 and $5,000,000. Ground has been broken recently for a new eighty bed tuberculosis hospital which will be located at the southern end of the drill grounds, and will be opened September 1.

Supervision of Deafness and Speech Defects

Under the reorganization of the Rehabilitation Division, U. S. Veterans' Bureau, Washington, D. C., the training of ex-service men with defects of speech and hearing has been placed under the direction of Mr. Arthur Holmes, supervisor for the blind. The central office regional representatives for the blind have been instructed to supervise the training of the deaf and those having speech defects, in addition to their work for the blind.

Longevity Pay and Allowances for Reserve Officers

Medical officers of the Reserve Corps and the National Guard are given all longevity pay and allowances by a bill that has passed the Senate and is now before the House of Representatives for action. This longevity pay and allowance is computed on the same basis as prevails in the Regular Army.

Foreign Letters

PARIS

(From Our Regular Correspondent)

April 7, 1922.

Pituitary Extract and Eclampsia

Recent observations tend to show that eclampsia may occur after the use of pituitary extract. Van Cauwenberghe of Ghent observed an attack of eclampsia seventeen hours after delivery, in a multipara who showed no albumin in the urine but who was given an injection of pituitary extract at expulsion. Weymeersch of Brussels witnessed eclamptic attacks becoming more frequent and more violent after injection of pituitary extract. On the other hand, H. Vermelin reported to the Society of Obstetrics and Gynecology of Nancy the case of a primipara in Fruhinsholz' service who had two eclamptic attacks after the injection of 1 c.c. of pituitary extract. There was no positive contraindication to the pituitary medication; the urine did not contain albumin. These facts are of special interest in view of Hofbauer's conception that eclamptic convulsions are due mainly to the exaggerated activity of the hypophysis during pregnancy, causing vascular spasms in the brain.

The New Tincture of Iodin

Recently I mentioned a death occurring from painting a tonsil with tincture of iodin. This drew attention to the 10 per cent. tincture of iodin of the French pharmacopeia of 1908 (made from iodin and alcohol only), which is so caustic, when fresh, that surgeons reduce it by one half. Its causticity, however, increases with age and when more than a month old it contains hydriodic acid. On account of these drawbacks, the supplement to the 1920 French pharmacopeia contains a tincture of iodin (nearly 7 per cent.) made from iodin, alcohol and potassium iodid, which is not only weaker but also less liable to change, on account of the small content of potassium iodid. In its last session, the Commission du Codex decided that this new tincture of iodin would henceforth be the only official tincture of iodin, but this decision will become official only when printed in the new pharmacopeia or in one of its supplements. [This new tincture is practically the same as that of the United States Pharmacopeia. —Ed.]

Antityphoid Vaccination of Civilian Population

Monsieur Strauss, minister of social hygiene, public charity and social welfare, has sent to all prefects of departments a circular giving the reasons in favor of antityphoid vaccination of the civilian population. This circular bases its argument on army statistics. It recalls the fact that during the period of nonvaccination or of free and insufficient vaccination, the number of typhoid cases in the army was about 10 per cent., with a mortality of 1.2 per thousand. In 1916-1918, notwithstanding unfavorable conditions, the morbidity rate was only 1.92 per thousand; in 1919-1920, it dropped to 0.25 per thousand. The mortality during the period of compulsory vaccination was 0.1 per thousand of the whole effective force. The circular emphasizes the importance of vaccination for the personnel of hospitals and calls the attention of hospital authorities to this point. Prefects are requested to ask the collaboration of physicians, with a view to carrying on an active propaganda in favor of antityphoid vaccination.

The French Red Cross and Russian Soviets

In consideration of the famine now prevailing in Russia, which drove the soviet authorities to solicit the help of foreign countries, the French Red Cross has just concluded with the Russian soviets an agreement permitting the use of six million francs voted by the French parliament to succor the Russian people. The French Red Cross will send to Russia a mission purely humanitarian. The members of the mission are under strict obligations to make no political or religious propaganda, nor carry on any commercial operations in Russia. The special object is to distribute food, clothing and medicine in the name of France, especially to the sick and to children, and, in general, to all famine sufferers, regardless of sex, religion, nationality, political opinions or social positions.

The French Red Cross will appoint a general delegate in Moscow, who will insure constant contact between the relief committee and the authorities, so that the French Red Cross will work in harmony with other foreign Red Cross societies and the Russian Red Cross. The latter can be represented in local organizations of the relief committee. The French Red Cross will have in Russia the French personnel that it judges necessary and its choice will not be objected to by the soviet authorities. The choice of the general delegate alone will be subjected to the approval of the soviets, but the approval of the authorities will also be necessary for any one who left the soviet territory after March 12, 1917, or who participated in any manner in a movement directed against the soviet confederation. The Russian auxiliary personnel will be recruited exclusively in soviet Russia. The members of the French mission will be exempt from any contribution in work or in money. Complete freedom and protection will be given to the members of the mission, to whom documents and safe-conducts necessary for the accomplishment of their duties will be delivered. The French Red Cross' messengers will be entitled to cross the Russian frontier with sealed packages, which will not be subjected to inspection; but the weight of these packages shall not be more than 1 kg. The French Red Cross will have the same rights as governmental institutions in the use of wireless telegraphy, the telegraph, telephone, cables, mail and messengers for communications needed to fulfil its duties. The buildings occupied by it can be inspected by the soviet authorities after notification given to the general delegate or to any other member of the mission representing him locally, and in his presence, except in a case of violation of the law. This right of inspection, however, does not permit a search or inquiry into the affairs of the members of the French mission, who cannot be subjected to search or arrest. If the soviet authorities have found an infraction of the law or rules of the agreement on the part of one of the members of the mission, proof shall be submitted to the delegate of the French Red Cross, who shall then dismiss that member. In case of nonexecution of the clauses of the agreement on the part of one side or the other, the French Red Cross will have the right to suspend its activities and the soviet authorities the right to ask the Red Cross to leave the soviet territory. In such case, the soviet authorities agree to give the French Red Cross all facilities and protection until complete evacuation of its personnel and material is effected, and, if need be, until their embarkation from the ports of the Black or the Baltic Sea.

Medical Supervision of Athletic Sports

At the last session of the Société d'éducation physique et de sports, Dr. Diffre, of Roubaix, proposed the adoption by athletic societies and clubs of a "physiologic index card" and of a method of medical supervision before, during and after athletic sports. This proposition was unanimously adopted by all physicians present at the session.

The Government Is Not Responsible for Its Physicians

A postman having died from the effects of a fall, his wife asserted that the accident had not been grave enough to cause his death, and that it had been due to the careless treatment of the physicians attached to the postal administration. She demanded an annual pension of 2,400 francs. The tribunal declared that her claim was unfounded, as the administration could not be held responsible for errors made by its physicians, even when their responsibility was involved.

Death of Dr. Guilleminot

Announcement is made of the death of Dr. Guilleminot, associate professor of medical physics in the school of medicine of the University of Paris. He published several works on roentgenoscopy and roentgenography, and a book entitled "Les nouveaux horizons de la science" in which he reviews matter, molecules, radiation, etc.

LONDON

(From Our Regular Correspondent)

April 3, 1922.

The British Medical Association and the Voluntary Hospitals

A largely attended conference of the representatives of the voluntary hospitals has been held at the invitation of the British Medical Association to consider hospital policy. A similar conference was held in 1920, and the subject has frequently been discussed by the council of the association, which has prepared a report consolidating the policy of the association (summarized in my previous letter to The Journal). At the present conference there were two representatives for each hospital of more than 100 beds and one representative for each hospital of fewer than 100 beds The report of the council was accepted as the basis of discussion and its recommendations were considered in succession, and adopted, though with some dissent. To the association's claim that the essence of the voluntary hospital system is voluntary management, an amendment was moved to include in the definition "support mainly by voluntary contributions" (which has always been understood to be the basis of voluntary hospitals), but the motion was lost. The demand that a percentage of payments made by or for patients to hospitals should become a part of a fund at the disposal of the honorary medical staff aroused the most opposition. The objection was made that the hospitals could not get the poor to contribute unless they knew that the medical staffs were working gratuitously. An amendment was moved that, when the payment was not more than was sufficient for maintenance, no percentage should be received by the medical staff. The amendment was lost by a large majority, and the original paragraph of the report carried by a majority of 85 to 28.

This desire to share in the payments of patients has given rise to much criticism. In a leading article, the *Times* characterizes the resolution as a mistake, and points out that a hospital appointment is of itself a considerable reward. It means increased prestige and so increased practice. The competition for even the junior posts is keen. In a joint letter to the *Times*, Mr. H. J. Waring and Dr. John Fawcett, members of two of the largest voluntary hospitals and medical schools (St. Bartholomew's and Guy's) express complete agreement with the *Times*. They deprecate a scheme whereby money is diverted in part from the contributions paid by patients for maintenance in hospital into a fund for payment of the staff. This would radically alter the relations of the staffs to the governors, to patients and to the public. The management of large voluntary hospitals in London have hitherto been based on the cooperation of a voluntary board of managers, a voluntary staff, and a voluntary system of contribution; and on this the invaluable work of the hospitals and their medical schools has been based. A committee recently appointed by the government to consider the position of the voluntary hospitals found that: "If the system of carrying a percentage to a staff fund is confined to cases in which the full cost of maintenance and treatment is paid by, or on behalf of the patient, not much objection can be taken to it, but any extension of the practice beyond these limits appears to endanger the future of the voluntary hospitals." As paid officials, the medical staff would no longer occupy the position of independent advisers to the governing bodies as to the care and treatment of patients.

The charitable donor has been accustomed to believe that he is supporting institutions in which the governors and staff work for the benefit of the patients. The acceptance of a percentage of payments by the staff would be likely to have a disastrous effect on subscriptions. On the other hand, it is pointed out that, as many private patients are now tending to become hospital patients, the hospital physician has to seek compensation by remuneration from his hospital work.

Autosuggestion

The visit to this country of M. Coué, head of the Société Lorraine de Psychologie Appliquée at Nancy, who has given lectures in French and English and has treated patients by his method of autosuggestion, has attracted enormous attention. His crowded audiences have comprised society leaders, and the press has daily devoted columns to him. An institute for the practice of autosuggestion, of which he is the president, has been opened. His method depends on monotonous repetition. The patient is instructed as follows:

> Every morning before you are fully awake and every evening as soon as you are in bed, close your eyes and murmur twenty times: "Day by day in all respects I grow better and better." It is well to be provided with a piece of string with twenty knots tied in it so that the counting may be mechanical. Let this autosuggestion be made with confidence and with faith. The greater the confidence, the more rapid and certain the results. Further, each time, whether by night or by day, a physical and moral suffering is experienced, affirm instantly to yourself that you will not consciously encourage its existence and that you can make it disappear. Then, if possible, close your eyes and isolate yourself in thought, pass your hands lightly over the seat of pain, or on the forehead if the suffering be mental, and say as quickly as possible aloud, as long as is necessary, "It's going." On each recurrence of the pain, employ the same method. These exercises must be made with great simplicity and above all without effort.

It has of course been pointed out that M. Coué has nothing new to offer in either his theory or his practice of autosuggestion, but he is obviously honest; he accepts no fees for treatment, and he has a most impressive personality. The faith which he inspires is directed to the treatment of neurotic and hysterical conditions; and in organic disease to the alleviation of symptoms, as there may be in organic disease a considerable mental or hysterical element, aggravating or producing symptoms.

Operations for Enlarged Tonsils and Adenoids

Much criticism has lately been leveled at the frequency of operations for enlarged tonsils and adenoids and the manner in which the operations are performed. The council of the laryngologic section of the Royal Society of Medicine has made the following suggestions: 1. All clinics, whether at hospitals or schools, should be in charge of surgeons with special experience as to diseases of the nose, throat, and ear, so that, *inter alia,* a wise selection may be made of cases requiring operation, and others not requiring operation may be appropriately treated. 2. All patients requiring operation for enlarged tonsils and adenoids should have inpatient treatment, and a stay of at least forty-eight hours should be insisted on. 3. Parents should be given printed instructions as to the preparation of the patient for operation and preparation of the room to which the patient will return. 4. Before the patient is admitted for operation, inquiries should be made by a responsible authority as to the home conditions, especially with reference to infectious disease. 5. When the patient leaves the hospital, printed directions with regard to after-treatment should be given. 6. Anesthetics should be given by anesthetists with special experience in these operations. 7. After the patient leaves the hospital with the printed instructions for after-treatment, arrangements should be made for the supervision of a qualified visiting nurse.

Street Accidents

A return issued as a parliamentary paper states that 2,845 deaths in the United Kingdom in 1921 were due to street accidents, as compared to 2,837 in 1920. Of the total, 2,314 were due to accidents in which mechanically propelled vehicles were concerned, 326 were due to horse-drawn vehicles and 205 to pedal cycles. In London, 571 fatal accidents occurred in the streets, of which 490 were due to mechanically propelled vehicles, sixty-one to horse drawn vehicles and twenty to pedal cycles. Of the total, omnibusses were responsible for fifty-four deaths and tramcars for thirty. Nonfatal accidents during the year amounted to 61,272, as compared with 54,910 in 1920.

"Steel Scrubbers," a New Domestic Danger

In the *Lancet*, Dr. Andrew Wylie of the London Throat and Ear Hospital has called attention to a new domestic danger. He has had several cases lately in which pieces of wire were found in the throat and larynx, owing to cooks cleaning kitchen utensils with a steel scrubber. The scrubber consists of steel shavings rolled into a ball. In course of time, pieces of steel get detached and, being very small and almost colorless, escape the cook's notice and are served with the food.

VIENNA

(From Our Regular Correspondent)

April 4, 1922.

Venereal Disease During and After the War

Professor Finger, director for diseases of the skin and genital organs, in Vienna, writing to one of our contemporaries, points out that venereal disease was years ago much commoner in Austria than in the western part of Europe. As compulsive military service was formerly the lot of nearly every healthy man between 21 and 48, the incidence of such disease among this portion of the population can be taken as a guide in estimating the general distribution of venereal disease. In peace times, out of each thousand soldiers doing active service, the number of those reported yearly as suffering from gonorrhea or syphilis was: in Prussia, 18; Bavaria, 20; France, 27; Belgium, 28; Germany, all together, 31; Austria-Hungary, 61; Austria alone, between 39 and 52. The high figure mentioned for the dual empire was due to its semi-Asiatic or Balkan provinces, now forming independent states. The vicissitudes of the war produced a marked increase of the incidence, so that at times up to 12 per cent. of the active army were reported as being under treatment for sexual diseases. Definite figures are available, according to Dr. Finger's report, only to Aug. 1, 1917. On that day, the total number of combatants reported diseased in the first three years of the war was, in this country, 1,275,885 (Report of the Committee of Military Health). It is safe to assume that, up to the end of the war, at least another 30 per cent. were added. Valuable statistics have been worked out, showing that more than 43 per cent. of the infected soldiers were married, carrying infection to their wives when they returned home; 57 per cent. of the total number were single; 54 per cent. came from rural districts; 15 per cent. from larger communities and cities, and 31 per cent. from smaller towns.

Similar conditions prevailed also in the hinterland, where a marked increase of sexual diseases was noted both among males and females, especially as regards the juvenile portion of the population. The figures obtainable from Vienna are given herewith. In 1913, there were 42 out of each thousand diseased males under 20 years; in 1918, the figure was 111. As regards juvenile females, their percentage rose from 129 per thousand to 213; and for married women the figure was, in 1913, 100, and in 1918, 230 (as regards infected cases). While wartime was pernicious for those in the field and those at home owing to the increasing demoralization and the easy spread of infection by the soldiers visiting their friends, the breakdown of the military organization and the consequent revolution resulted in a complete failure of the prophylactic measures intended to check or prevent the infection of women by the return of the army. Demoralization was fostered by hunger and pauperization, and the spread of infection among girls assumed alarming proportions, as shown by the reports of the police. In raids on so-called "hourly hotels," the favorite haunt of the nonprofessional prostitute, an ever increasing number of juveniles are encountered. In 1918, only 33 per cent. of the females were below 18 years. In 1919, there were 46 per cent. below that age, and in 1920, 48 per cent.

These conditions have resulted in energetic efforts being made to obtain a legal weapon against the public menace, for these diseases are now assuming proportions which Professor Finger claims are equivalent to other infectious diseases, threatening to work and spread like epidemics or pandemics. In his words, "They cease to be merely sexual disease." As long as the male partner is not also examined and, if he is found infected, is not also treated in the same manner as the infected female, no effective control can be hoped for. The measures hitherto adopted (detention of the infected women in a hospital for treatment and regular weekly control of the public prostitutes) are only a farce; they are absolutely useless. Legislation must enable the officers of public hygiene to deal with both sexes, and thus to eradicate the potent sources of infection. It is expected that, within a short time, a bill dealing with this most urgent problem in the manner suggested will be considered by the Austrian legislative chamber; and thus we will be enabled to establish case centers for the sexually—and morally—infected persons in the more thickly populated districts of the republic.

Reform of the Care Centers for Infants

Hitherto, we have had a large central institution for the care of infants who had nobody to care for them, i. e., the foundlings and such babies as could not be brought up by their mothers—mostly illegitimate children. These two groups of infants were concentrated in a large, spacious institute, but numerous reasons of a religious, financial and ethical kind cooperated in making the home unnecessary from the standpoint of modern sociologic welfare care. The first foundling houses of Europe were founded in the eleventh century, but they were far from humanitarian; on the contrary, their inmates, nearly all of illegitimate birth, were not too well protected from premature death. In Austria, the first foundling house was established in 1780, and the mother was entitled to remain unknown—anonymous even to the authorities. In fact, she was allowed, if she chose to do so, to wear a mask concealing her features, even when she gave birth to her child in the obstetric department annexed to the foundling house. Or she could put her child into the gateway box arranged for that purpose and then disappear. In 1785, already 1,366 foundlings were cared for in the home; the numbers increased steadily, and in 1880 there were 9,820. Each child could stay ten years in the institute, so that in 1880 no less than 36,000 children had to be cared for. But a steady decline in numbers began. In 1910, less than 8,000 babies were received; in 1914, only 3,416; in 1920, 778, while the next year the number was only 524. Nearly half of them were taken away very soon, so that one can say this institute has outlived itself. The causes for the rapid change of conditions are manifold: the modern laws protecting illegitimate mothers and their children, which regulate the financial claims of such persons as regards the child's father; the modern laws of inheritance; the sickness and maternity insurance clubs, the most up-to-date arrangement of foster parents and guardians, and finally, the totally changed attitude of society toward the illegitimate mother and her child. Consequently, the necessity for separating herself from her baby is no longer paramount for the mother of a child born outside of wedlock, and thus hardly any foundlings are found now. Therefore, the central institute mentioned above will no longer serve as a foundling hospital. This term will be abolished altogether. In future, it will not be required that a baby be of illegitimate birth in order to be admitted to this home. Only actual poverty and the danger to life resulting from it will serve as a criterion for admission. Any mother who is not in a position to safeguard the life or the proper upkeep of her baby can apply for a place in the institute. When she is in the obstetric clinic—as is now usually the case with the poorer classes, who cannot afford to pay for a confinement at home—special investigators will find out whether the mother is fit for admission. If so, she may come with her infant for a few weeks to the institute, until she is fit for work in her own home; or she may leave her baby alone for some time there and may return home, so as to be relieved from the baby's care for a reasonable time; or she may leave it there indefinitely, and go to work and earn her living, as the case may be. The principal purpose of the new arrangement is to lighten the burden of the mother and make her confinement less trouble and more like a natural episode for her. It is hoped that with such facilities, the prospective mothers, married or not, will not resort so often to criminal abortion, and that child mortality will go down, thus helping to prevent race suicide.

One Year of "Free Choice" of Physicians in the Health Insurance Society

An understanding was arrived at some time ago, as mentioned in a previous letter to The Journal between the medical organization of Vienna and the government, by which all the officers of civil service, as well as their families, and also those on retired pay or receiving old age pensions, were entitled to free medical help and medicines. By paying a not too high premium from their salaries or pensions, they obtained the benefit of selecting any one of the physicians on the list of the institution called "Bundeskrankenkasse" (health insurance society of the union). The physicians were paid by the society according to the work done, specialists receiving about 100 per cent. higher fees than the general practitioner. Within a short time, the advantages offered by this arrangement became manifest to all physicians, as well as to the persons in civil service, and now about 95 per cent. of all practitioners in this country are on the list. The fees are stipulated by the organization and the managing board of the "kassa" and are the result of careful consideration of the standard of life and the costs of living of the classes of people concerned. They increased constantly according to the "index," of the statistic bureau of the government, and are fixed monthly, so that the profession gets the benefit of the calculation. The fees are now about eight times what they were a year ago, corresponding nearly exactly to the actual rise of prices, on an average. There is a list containing quite a number of services to be paid for separately—injections, catheterization, massage, electric treatment, examination of excretions or secretions, night work, or offensive work. Specialists have a series of services for which they receive extra pay, varied according to the nature of the service. Fees for operations are very reasonable indeed; and due allowance for anesthesia and assistance is made so that general satisfaction with the working of this arrangement has been repeatedly expressed. The costs to the pockets of the insured persons are not heavy, about 1 to 1.5 per cent. of their salaries being deducted "painlessly," so to speak, by the state, the latter contributing an equal sum to the costs out of its own revenues. Thus it is possible to pay the physicians about 50 per cent. of what they charge private patients; and, at the same time, a vast number of patients who otherwise would go to the outpatient departments or hospitals are retained for the practice of the profession generally. The results obtained by this scheme are most welcome, and will form a formidable weapon in the coming fight for the "free choice of physician" in all sickness clubs. Already the municipality of Vienna is negotiating with the organization, in order to obtain for its officers a similar arrangement. This would mean an additional 80,000 to 100,000 club members, who are now treated by only a few appointed physicians and will then fall to the lot of the 3,000 Vienna physicians. In a short time, statistical data as to the incidence of mortality and morbidity, and the costs of medical aid and medicines will be published by a managing board of the "kassa." They will serve as a further guide for regulating the relations between the profession and insured persons. Should the financial position of the kassa permit, it is intended to raise the fees to the minimum private fee; but already the entire scheme is working in a most satisfactory manner, a success through reason and firmness and good will on both sides.

BERLIN

(From Our Regular Correspondent)

April 1, 1922.

Death of Professor Blaschko

Professor Blaschko, the dermatologist, died, March 28, in Berlin, at the age of 64, from the recurrence of a carcinoma of the intestine, which was operated on, apparently successfully, a year ago. Blaschko became more generally known in 1897, as the result of his excellent work on the incidence of leprosy in the region of Memel. Owing to his thorough investigations, the attention of the public health authorities was called to the fact that leprosy may occur in Germany. Blaschko became instrumental in the founding of a leprosarium in Memel. He also displayed great talent for organization and indefatigable energy in public welfare by securing the adoption of measures to combat venereal disease. Through his efforts the German society for the control of venereal disease was founded, and although Professor Neisser, who, at that time, was the most prominent dermatologist in Germany, was chosen as president, Professor Blaschko was, in reality, the one who furnished the dynamic energy and the untiring interest in the undertaking. After Neisser's death, he became president of the society. It was due mainly to his initiative that the law with reference to the control of venereal disease, to which I referred in a recent letter, was drafted. Among his writings in this field, his book "Syphilis and Prostitution from the Standpoint of Public Health Administration" is deserving of special mention. Two years ago, Blaschko wrote for Weyl's compendium the article on the hygienic aspects of venereal disease, a contribution which met with universal recognition. He also made a German translation of Flexner's work on prostitution.

Recent Labor Troubles in Relation to the Care of Patients

The beginning of February, the strike of the railway employees and, more especially, of the workmen employed by the public utilities of Greater Berlin, besides causing many other inconveniences, embarrassed to no inconsiderable extent the management of the city hospitals, owing to the fact that the electric, gas and water plants were shut down. At the suggestion of the Prussian minister of public welfare, a consultation between the medical directors of the Berlin hospitals, representatives of the city of Berlin and of the *Landesversicherungsgellschaften* (insurance companies), the Berlin health insurance societies, and other societies, took place recently to discuss the question as to whether, and if so, to what extent, the strike of the workmen employed in municipally controlled public utilities affected the management of the hospitals, and whether any measures could be taken to ward off such dangers for the future. The sudden shutting down of the water plant, February 4, immediately caused great embarrassment, owing to the fact that houses and institutions with hot-water heating plants could not be heated adequately during the severe cold spell that prevailed. The preparation of food by means of steam-cooking apparatus became impossible. The flushing of toilets, adequate means of cleansing night vessels and the effective removal of various forms of waste material were jeopardized. Perhaps still worse was the lack of water for the necessary hand scrubbing of physicians in connection with operations; also for the cleansing and disinfection of instruments, bandaging material, etc. Many operations had to be performed without the disinfection, which is such a necessary precaution in the interest of the patients; many urgent operations had to be omitted or postponed. The sudden failure of the supply of gas and electric current was found to be exceedingly inconvenient; for instance, in some institutions where water was available the surgical instruments could not be disinfected readily for the reason that the necessary gas apparatus was not functioning. Instruments which could only be used with the aid of electric power were useless; for instance, roentgen-ray examinations were for many days impossible. In one institution in which the heating system was controlled by electric current the rooms could not be heated, although water was available. The result was that, for several days, it was with extreme difficulty that a temperature of 5 C. was maintained in the wards, and the patients, among them a number suffering from tuberculosis and rheumatism, had to endure the frightful cold. Most of the elevators in the larger institutions being electrically operated could not be used, which made it next to impossible to transport bedridden patients from one story to another or to the operating rooms. The lack of electric or gas illumination during the evening hours and at night was attended with the greatest inconvenience, since, naturally, petroleum lamps and candles, especially in the larger institutions, scarcely served to satisfy the most urgent demands. Still more serious consequences were only prevented by the fact that the water supply became available again in a short time and that through the previous organization of a corps of technical experts to be called on in case of emergency the gas and electric plants could be put in operation again in a few days.

Health Certificates as a Requisite to Marriage

The Prussian ministry of public welfare recently presented to the *Landtag* (legislature of Prussia) a memorial on the question of health certificates as a requisite to marriage. In this treatise the problem is discussed in detail, reference being made to the experiences of the United States and Sweden in the matter of denying marriage licenses to persons who cannot furnish a clean bill of health. The ministry takes the stand that the resolutions which were adopted last year by the Council on Health of the Empire in regard to this subject should be upheld. According to the tenor of these resolutions, the imperfect state of our knowledge of the laws of heredity as affecting man and the difficulty of procuring reliable data on which to base a decision make it impracticable to form an absolutely certain judgment, in every case of prospective marriage, as to whether such a union is assailable or not. In many cases, however, a medical examination of the applicants for a license to wed will reveal the fact that, either in the interest of posterity or of one or the other of the contracting parties, such marriage is inadmissible. In other cases, it will be found that the medical examiner will be in a position to give advice which, if followed, will ward off danger to either spouse and will protect posterity against possible harm. Mere enlightenment of the people in regard to the importance of a certificate of health as a requisite to marriage and with reference to the value of medical advice given to the parties to a marriage contract is, in itself, helpful, but it does not solve the problem in toto, for the reason that marriage is generally looked on solely as a private affair, on which account it cannot be expected that medical advice will be followed, to any great extent. It seems, therefore, essential to require by law that both parties to a marriage contract shall submit to a medical examination, and that, when application for a marriage license is made, such parties shall present a certificate of health, executed by a physician within the four weeks past, together with affidavits to the effect that each party has read and knows the contents of the health certificate of the other party to the contract. It seems further desirable that certain physicians be appointed "counselors on marriage." On the basis of medical certificates presented to them and of the results of their own examination, in case they should find such an examination desirable, they would issue official health certificates to the contracting parties. Definite instructions in regard to the manner of conducting examinations and with reference to the framing of a medical opinion should be furnished such counselors. The certificate of the counselor should contain simply the statement that no medical objections can be raised to the contraction of marriage by the applicants, or, on the contrary, that such contraction of marriage is, for the time being, inadvisable, for reasons of health. No details in regard to the condition of health of the applicants should be given. The right to appeal from the decision of the counselor to a higher authority should be granted. As to what use shall be made of the medical certificates and as to whether they will consummate the marriage in spite of the opposing medical advice, these questions should be left to the decision of the contracting parties. After duly considering the problem from all its angles, the ministry of public welfare reached the conclusion that, in spite of the fact that the institution of legal measures to bring about a certain control of health conditions in applicants for marriage licenses might work hardships to some persons, the time is, nevertheless, at hand when, in the interest of the future health of the people, this question must be earnestly considered.

Marriages

CHARLES WILLIAM HEITZMAN to Mrs. Jane Gray Thomas, both of Muskogee, Okla., in San Antonio, Texas, February 7.

THOMAS DEWITT GORDON, Grand Rapids, Mich., to Miss Anabel Campbell Paterson of Toronto, Ontario, recently.

BLAKE FERGUSON DONALDSON, Hauppauge, N. Y., to Miss Harriet Ransom of New York City, April 22.

JAMES WILLIAM MCMONAGLE, Philadelphia, to Miss Martha Flynn of Paulsboro, N. J., February 22.

FRANK L. RAY, Charlotte, N. C., to Miss Ethel Graham Woods, Purley, N. C., March 19.

JOSEPHUS C. YOUNG to Miss Willie Price Mizell, both of Dallas, Texas, April 1.

THOMAS KLEIN to Miss Josephine Tomlinson, both of Philadelphia, February 11.

L. A. STEVENS, Dallas, Ore., to Miss Martha Richardson of Portland, in March.

Deaths

Edwin Walker ⊕ Evansville, Ind. Evansville Medical College, 1874; New York University Medical College 1879, died at his home April 23, aged 69, from carcinoma of the spine. He was for a time demonstrator of anatomy and subsequently professor of anatomy in the Evansville Medical College, also professor of gynecology and diseases of the nervous system. He had been first vice president of the American Medical Association, president of the Indiana State Medical Society and of the Mississippi Valley Medical Association. He was well known as an abdominal surgeon and for his contributions to medical literature. On the reorganization of the American Medical Association, he was a member of the first House of Delegates, which position he occupied for several years. In 1894 he established the "Walker Hospital." He had been president of the associated charities of Evansville for twenty years and was formerly a member of its city council, president of the board of health and a member of the board of trustees of the Medical College of Indiana.

Edward Kellogg Dunham ⊕ New York City; Medical School of Harvard University, Boston, 1886; formerly professor of pathology and bacteriology, University and Bellevue Hospital Medical College, New York City; at one time bacteriologist for the Massachusetts Board of Health; served in the M. C., U. S. Army, during the World War with the rank of major; member of the American Association of Pathology and Bacteriology, the New York Pathological Society, the New York Academy of Sciences and the American Chemical Society; died, April 15, aged 62, from angina pectoris.

Kemp Plummer Battle, Raleigh, N. C.; University of Virginia Department of Medicine, Charlottesville, 1881; Bellevue Hospital Medical College, 1882; formerly professor of physiology, Leonard Medical School, Raleigh; professor of diseases of the ear, nose and throat, University of North Carolina, Raleigh, 1903-1910; honorary member of the Medical Society of the State of North Carolina; member of the state medical examining board, and of the American Academy of Ophthalmology, Otology, Laryngology and Rhinology; died, March 23, at Philadelphia, aged 63, following a long illness.

Henry Hamilton Deane, Watertown, N. Y.; University of Vermont College of Medicine, Burlington, 1876; also an attorney; formerly demonstrator of anatomy at the University of Vermont College of Medicine; at various times president, vice president and secretary of the Jefferson County Medical Society; delegate to the Medical Society of the State of New York; formerly city physician, pension examiner, and health officer of Watertown; died, April 10, aged 72, at Ogdensburg, from injuries received in 1919, when he fell from the porch roof of his residence.

Frank Seward Johnson ⊕ Chicago; Northwestern University Medical School, 1881; died in Pasadena, Calif., April 23, aged 66. Dr. Johnson was emeritus dean and professor of medicine in the medical department of his alma mater and consulting physician to the Michael Reese and Mercy hospitals. He was a member of the American Climatological Association, and the National Association for the Study and Prevention of Tuberculosis. During the last few years he had resided in Pasadena on account of failing health.

John L. Elsner ⊕ Denver; Bellevue Hospital Medical College, New York, 1866; served with the M. C., U. S. Army, in 1886; formerly county physician; founder of the first hospital in Denver County and of the Gross Medical College, also of the National Jewish Hospital for Consumptives; artist and linguist; died, April 1, aged 77, from heart disease.

Maurice Louis Mallas, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1918; assistant demonstrator of dermatology, Jefferson Medical College, Philadelphia; member of the Medical Society of the State of Pennsylvania; died, April 6, aged 32, from postoperative bronchopneumonia.

Charles W. Tangeman ⊕ Cincinnati; Miami Medical College, Cincinnati, 1879; clinical professor of ophthalmology, University of Cincinnati College of Medicine; member of the American Academy of Ophthalmology and Oto-Laryngology; oculist for the Big Four Railroad; died, April 2, aged 65.

Thomas Napoleon Bogart ⊕ Excelsior Springs, Mo.; Barnes Medical College, St. Louis, 1893; formerly vice president of the Missouri State Medical Association and president of the

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⊕ Indicates "Fellow" of the American Medical Association.

Clay County Medical Society; served on the city council, and as member of the school board; died, March 28, aged 53.

Robert B. Gibb ⊕ Pittsburg, Kan.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1900; formerly chief of staff of Mount Carmel Hospital; member of the Clinical Surgical Society of America; died, April 9, aged 45.

Thomas Gray Merritt, West Pittston, Pa.; Kentucky School of Medicine, Louisville, 1891; member of the Medical Society of the State of Pennsylvania; died, March 22, aged 41, at the Wilkes-Barre City Hospital, following the effects of a motor accident received two years ago.

Lewes B. Wilson, Washington, D. C., Medical Department of Columbian University, Washington, 1888; served as examiner in the patent office, Washington; on the staff of the National Homeopathic Hospital; died, March 30, aged 56, from heart disease.

Julian Augustus Ward, Quitman, Ga.; University of Georgia Medical Department, Augusta, 1905; member of the Medical Association of Georgia; served in the M. C., U. S. Army, during the World War; died, April 6, aged 46, from pneumonia.

Henry P. Coile, Knoxville, Tenn.; Jefferson Medical College, Philadelphia, 1875; for several years president of the East Tennessee Anti-Tuberculosis Association; served during the World War at Camp Taylor, Ky.; died, April 6, aged 69.

Chauncey Harry Wilder, Oakland, Calif.; College of Physicians and Surgeons, Chicago, 1895; veteran of the Spanish-American, and World Wars; died, April 9, aged 55, at the Southern Pacific General Hospital, San Francisco.

Harry W. Gobble ⊕ Greenfield, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, Mo., 1895; formerly mayor of Greenfield; member of the board of education; was killed, April 2, in an automobile accident, aged 53.

Jacob H. Behler, Nesquehoning, Pa.; Jefferson Medical College, Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; former coroner of Carbon County; died recently, aged 56, from pneumonia.

Nathan Alexander Cohen, Wildwood, N. J.; Jefferson Medical College, Philadelphia, 1892; member of the Medical Society of New Jersey; formerly health officer of Wildwood; died, April 11, aged 58, from septicemia.

Jesse Thomas Hancock, Oneonta, Ala.; Medical College of Alabama, Tucaloosa, 1877; formerly president of the Alabama State Medical Society; was run over and instantly killed by a passenger train, March 29, aged 80.

Joseph Jason Medros, Hayward, Calif.; Cooper Medical College, San Francisco, 1894; member of the Medical Society of the State of California; died, April 5, aged 52, at the Providence Hospital, Oakland.

Theodule Morriseau, Warren, R. I.; Albany Medical College, Albany, 1893; formerly member of the state legislature; served on the Warren Town Council and as health officer; died, April 9, aged 63.

Frederick Sumner Pratt, Bennington, Vt.; Medical Department of Columbia College, New York, 1885; former village president; died, April 4, aged 62, from angina pectoris and diabetes mellitus.

Henry H. Summa, St. Louis Medical College, St. Louis, 1875; member of the Missouri State Medical Association; died suddenly, April 9, aged 68, at West Palm Beach, Fla., from heart disease.

Simon P. Rentz, Branchville, S. C.; University of Maryland School of Medicine, Baltimore, 1891; died, March 22, when the car in which he was riding overturned and his neck was broken.

Edward J. Sexton, Gillette, Wyo.; Medical Department of Columbia University, Washington, D. C., 1888; health officer of Campbell County; died recently, aged 61, from lobar pneumonia.

William Wade Olive ⊕ Durham, N. C.; University of Maryland School of Medicine, Baltimore, Md., 1906; president of the Durham-Orange County Medical Society; died, April 6, aged 44.

John A. Black ⊕ Pueblo, Colo.; Medical Department of Columbian University, Washington, D. C., 1882; formerly attending surgeon at the Saint Mary Hospital, died, April 5, aged 63.

J. Eugene Jordan, Seattle, Wash.; Hahnemann Medical College and Hospital of Chicago, 1888; at one time member of the city council; died, March 21, aged 71, following a long illness.

Charles M. Wilson, Gouverneur, N. Y.; Bellevue Hospital Medical College, New York, 1871; member of the Medical Society of the State of New York; died, April 4, aged 76.

William John Stewart, Pittsburgh; University of Pittsburgh, 1908; served as a lieutenant and captain in the M. C., U. S. Army, during the World War; died recently, aged 37.

Francis E. Hinch ⊕ Ste. Genevieve, Mo.; St. Louis Medical College, St. Louis, 1882; formerly president of the Ste. Genevieve County Medical Society; died recently, aged 65.

Henry Ettinger ⊕ New York City; Bellevue Hospital Medical College, New York City, 1890; died, April 8, aged 63, at the New York Post-Graduate Medical School and Hospital.

Eugene Colburn Knight ⊕ Evanston, Ill.; University of Illinois College of Medicine, Chicago, 1898; died suddenly, April 19, at the Evanston Hospital, from pneumonia, aged 56.

Agnes Clara Weaver, Chicago; University of Michigan, Ann Arbor, 1890; formerly of Oklahoma City; died suddenly, April 20, at the Atlantic Hotel, from heart disease.

Kemper L. Colley, Bigheart, Okla.; University of Louisville Medical Department, Louisville, Ky., 1907; served as captain during the World War; died, February 27, aged 45.

George W. Heinitsh, Spartanburg, S. C.; Jefferson Medical College, Philadelphia, 1879; member of the South Carolina Medical Association; died, April 4, aged 63.

Edward P. Gould, Chattanooga, Tenn.; Keokuk Medical College, Keokuk, Ia., 1891; member of the Tennessee State Medical Association; died, April 5, aged 72.

John S. Hollingsworth, Indianapolis; Medical College of Indiana, Indianapolis, 1893; died, April 8, aged 65, from injuries received in an automobile accident.

E. McIvor Law, Arcadia, Fla.; Maryland Medical College, Baltimore, 1903; was electrocuted, March 9, while making a roentgen ray examination; aged 53.

Charles H. Wittenbrook, Woodsfield, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1888; died, March 22, aged 66, from chronic nephritis.

Edward Kellan Newton, Whiting, Ind.; University of Colorado School of Medicine, Denver, 1913; died, April 7, aged 34, from accidental poisoning.

Leon Alfred Snyder, Mahanoy City, Pa.; Hahnemann Medical College of Philadelphia, 1875; died recently, aged 70, from dilatation of the heart.

I. N. B. Spence ⊕ Social Circle, Ga.; University of Georgia Medical Department, Augusta, 1877; died, March 23, aged 71, from pneumonia.

Abraham M. Kyser, McComb, Ohio (licensed, Ohio, 1896); died, April 9, aged 88, from the effects of burns he received some time ago.

George M. Swepston, McArthur, Ohio; Eclectic Medical Institute, Cincinnati, 1890; died, February 23, aged 60, from heart disease.

Harry Bromilow Joynson, Chicago; Baltimore University School of Medicine, 1897; died, March 25, aged 57, from pneumonia.

Manzanito B. Bolton, Quincy, Calif.; California Medical College, Los Angeles, 1899; died, March 27, aged 47, from pneumonia.

William E. J. Michelet ⊕ Chicago; Rush Medical College, Chicago, 1879; died, April 19, aged 64, from streptococcus infection.

Eugene C. Fetter, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1895; died, April 13, aged 48.

Henry William Wardle, Moore, Mont.; Rush Medical College, Chicago, 1897; died, March 22, aged 51, from septicemia.

John W. Lowe, Eustis, Fla.; Columbus Medical College, Columbus, Ohio, 1877; died suddenly, April 1, aged 66.

L. Leo Newman, Ecru, Miss. (years of practice); died suddenly, March 30, aged 55, from heart disease.

Max Schnug ⊕ Durand, Wis.; Milwaukee Medical College, Milwaukee, 1905; died, April 2, aged 51.

Bishop B. Kelly, Billings, Mont.; Rush Medical College, Chicago, 1870; died, April 1, aged 75.

Jane Emma Bishop, Boston (licensed, years of practice); died recently, aged 83.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

ALBERT ABRAMS

A Defense by Upton Sinclair

A somewhat voluminous letter has been received from Mr. Upton Sinclair, which is a defense of Dr. Albert Abrams of San Francisco. We publish Mr. Sinclair's letter because we believe it is written in honesty and sincerity—and because The Journal readers will enjoy it! It is worth mentioning in this connection that Mr. Sinclair in his latest book devotes a few pages to a eulogy of Dr. Abrams and his methods. This material has not only been reproduced by Dr. Abrams in his "house organ" *Physico Clinical Medicine* but is reprinted in leaflet form and is being distributed by some of the individuals who are exploiting the Abrams methods. Such reprints have been sent to this office by both laymen and physicians.

MR. SINCLAIR'S LETTER

To the Editor.—A few weeks ago you published an article dealing with the discoveries or claims of Dr. Albert Abrams of San Francisco. I happen to be attending Dr. Abrams' clinic at the time and have discussed this article with him at some length. Dr. Abrams follows the policy of ignoring attacks on his work, taking the view that in the long run, the man who cures disease makes his way in the world in spite of all opposition. However, it is easy to see that he has been deeply hurt by this attack on his reputation, and as one of his friends and most ardent admirers I am taking the liberty of addressing a letter to you.

I do not know if the rules of your publication permit intervention in medical affairs by a mere layman. Permit me to introduce myself as a layman who for some twenty years tried faithfully to be cured of various diseases by many doctors of the best reputation in many parts of the world, and failed; and who, therefore, was compelled, as a matter of self-protection, to look into the question of health for himself. I have read so many different kinds of books on health and made so many experiments of my own that nowadays when I meet with a group of physicians I find that before long they come to accept me as one of themselves. You may not go that far, but at least you may be so generous as to allow me to tell you a little of what I have seen during the time I have spent in the clinic of Dr. Albert Abrams.

I observe that in the course of your two page article dealing with this subject, you nowhere have anything to charge against Dr. Abrams, nor do you show that you have investigated his work. You consider that all you have to do is to quote Dr. Abrams' own words as to what he can do, and that *these words refute themselves.* [Italics ours.—Ed.] Also you quote Dr. Abrams' schedules of prices, and imply that his motives are mercenary. I will take up these two questions one at a time.

WHAT DR. ABRAMS CAN DO

First, as to what Dr. Abrams can do: I have been here and have seen him do all that he claims to do. Therefore, you will understand that this portion of your argument does not produce much impression on me. I merely say to you, why do you not come and see, or why do you not send some reliable representative to see—before you take it for granted that Abrams is a knave or a lunatic? This man is not merely a colleague of yours; he is a fellow of the Royal Medical Society of Great Britain [We know of no such society.—Ed.] and surely he was entitled to a little elementary courtesy from you. Why did you not at least write to him and permit him to put before you a little of his evidence on the genuineness of his work? You admit that he is a graduate of the Universities of Heidelberg and Stanford; [Dr. Abrams is not a graduate of "Stanford."—Ed.] you admit that he was graduated from Heidelberg at the age of twenty. It happens that this was the youngest and remains the youngest age at which any man has taken a Doctor's Degree at that University in a hundred years. If you had inquired further you might have learned that ten years ago Abrams was one of the most respected physicians in San Francisco. What has he done since to forfeit the honors of a lifetime? All that he has done is to shut himself up in his laboratory and make the most revolutionary discoveries of this or any other age; and now when he emerges and offers this work to the world, you can think of nothing to do but jeer at him.

I spent two weeks in his clinic; then I took six months to write to his physicians all over the county, *and to experiment with his cures on a great number of my friends.* [Italics again ours.—Ed.] Now I am spending another two weeks in his clinic, and I venture to stake whatever reputation I have, or hope to have in this world, upon the statement that Albert Abrams has discovered the great secret of the *diagnosis and cure of all the major diseases.* [Again we must italicize.—Ed.] He has proven by diagnosing with the taps of his own sensitive finger tips over 15,000 people, and my investigation convinces me that he has cured over 95 per cent. of these who have taken his treatments. Moreover, he has taught his method to 200 or 300 other physicians, and some 80 per cent. of these have submitted to me answers to a questionnaire in which they claim thousands of cures.

You may say, perhaps, that I am not competent to judge of cures. For the sake of argument, I will grant that; but I assert that I am competent to judge of physicians, for I have tested several score of them, and if ever I knew a devoted scientist and a great humanitarian, it is Albert Abrams. In his clinic I have met perhaps a hundred physicians, and I venture to assert that a number of these are men both of integrity and capacity, and when I asked them why they came, I got invariably one answer: "Because I sent him blood specimens and I found that invariably he sent me a correct diagnosis." Not once, but at least two score times, I have seen Albert Abrams take a blood specimen brought to him, without even the name of the patient, and heard him diagnose cancer or sarcoma, and from the blood specimen locate the growth PRECISELY TO AN INCH. [Italics fail one here!—Ed.] Then I have seen the patient, an entire stranger to Abrams, brought into the clinic and examined, not merely by Abrams, but by a score of other physicians, and the growth found precisely at the spot indicated. (This was done twice between the time when this letter was dictated and the time when it was transcribed.) Three times, yesterday, I saw a diagnosis made of syphilis and the patient brought in, and all the standard reactions demonstrated. I have seen, not once, but hundreds of times, tubercular lesions diagnosed and located from the blood specimen and the patient brought in and the condition demonstrated by percussion. All these things are going on day after day. They are being done in other clinics in several score of cities, and you may have the addresses for the asking. Why do you not ask? [We have some such addresses in the Propaganda files.—Ed.]

THE ECONOMIC ELEMENT

I take up the second criticism, that Albert Abrams is mercenary. He charges $200.00 for the clinical course, which may last as long as the physician wishes. It seems to me that that price is to be judged somewhat in relation to what he has to teach. He maintains a large establishment; he has need of many assistants, and expensive apparatus for his research work. He charges for the use of his oscilloclast a deposit of $250.00, and a rental of $5.00 per month. The former item covers the cost of manufacturing the machine, and the second item must be compared with the fact that a great number of physicians who are using this instrument are today *enjoying incomes of from $1,000.00 to $2,000.00 per week.* [Once more, italics!—Ed.]

A few weeks ago I visited a physician who told me he had treated thirty-two patients that day with his one instrument, and that his income was over $1,300.00 for that week, and I could name several who have given similar accounts. It may be, of course, that you will say they should not charge so much. The average charge is about $200.00 for a *guaranteed cure of such diseases as syphilis, tuberculosis, cancer and sarcoma.* [Italics ours again.—Ed.] Do you know anyone who will guarantee to cure a cancer or sarcoma at any price? [No!—Ed.]

I am sure you will agree with me that it would be possible to find physicians who would be willing to put up many hundreds of dollars to guarantee that neither cancer nor sarcoma can at the present time be cured except by operation. And I can recall many cases in my lifetime when I paid hundreds and even thousands of dollars to be cured of diseases by the medical profession, and I am unable to recall a single case where I was ever cured of anything. [Still this need not be an indictment of scientific medicine.—Ed.]

Finally, as regards to the subject of mercenary motives, permit me to state that I have in my possession a letter from Dr. Abrams stating that what he desires is to have established an institute for the purpose of making his work known to the world, and that if such an institute is established he is prepared to give up all his other work and devote all his time, without compensation, to the institute. Furthermore, he is willing to furnish his instruments without charge to any medical institution which requests them. Within the last few days, on account of the enormous number of blood specimens brought into his clinic, Dr. Abrams has signed in my presence, and is prepared to issue a statement to the effect that his charge for examining blood specimens is to be raised from $10.00 to $25.00 and all checks are to be made payable to a Trust Fund which is to be immediately established, for the purpose of founding the institution above referred to. I do not see how the medical profession can ask for more than this; but if you do, I should be pleased to receive your suggestions and transmit them to my friend.

AN OLD STORY

Now, this failure to recognize a great medical discovery is an old story. It was the experience of Harvey [We knew poor Harvey would be dragged into this.—Ed.], of Jenner and of Lister. But the world moves on, and men's brains should improve, and it should be possible to shorten the time of persecution which the great pioneers of science have to suffer. I put to you this simple proposition: Send a reliable man of science to the clinic of Albert Abrams, and let him stay there as long as he pleases and see all that he wishes to see, and then send you a report, and if it indicates that you have blundered in your condemnation, be honest and say so, and save your profession from another black mark against its name.

Upton Sinclair, Pasadena, Cal.

Comment

A testimonial is of value to the extent that the person giving it is an authority on the subject on which he testifies. When Mr. Sinclair testifies on socialism we may listen respectfully, believing him competent to express an opinion; but when Mr. Sinclair gives a testimonial on certain bizarre methods of interpreting difficult and obscure problems in medicine, he leaves us cold.

Mr. Sinclair says that he has spent time in Dr. Abrams' clinic and is wonderfully impressed with Dr. Abrams' achievements. So is the small boy impressed with the marvelous facility with which the magician extracts the white rabbit from the silk hat. Mr. Sinclair is convinced "that Albert Abrams has discovered the great secret of the diagnosis and cure of all the major diseases." The small boy is equally convinced that the prestidigitator has solved the mystery of producing snow white bunnies from airy nothings.

Great store seems to be placed by Mr. Sinclair on the favorable reports that he obtained from those who are relieving the public—of from $1,000 to $2,000 a week—by the Abrams methods of diagnosis and treatment. What kind of evidence did he expect to get from such obviously *ex parte* sources? Mr. Sinclair's naïveté may be childlike, but it is not scientific. While the significance of the statement may not be apparent to Mr. Sinclair, it is a fact that when the names of the one hundred or more lessees of the Abrams "Oscilloclast" were checked up it was found that a number of these individuals were already in the Propaganda files in some other connection. That these disciples of Abrams, who are "enjoying incomes of from $1,000 to $2,000 a week," should speak favorably of the Abrams method was inevitable!

Some years ago Upton Sinclair wrote a book on his (at that time) panacea for human ailments. It was the "Fasting Cure." At that time he told of individual acquaintances suffering from various ailments: one was "dying of kidney trouble"; another was "in the hospital from nervous breakdown"; still another had "only a year to live," while a fourth was "a nervous wreck, craving for death." Of these Mr. Sinclair said at the time: "And there is not one of these people whom I could not cure if I had him alone for a couple of weeks."

MR. SINCLAIR AND THE MEDICAL PROFESSION

At that time Mr. Sinclair was greatly perturbed at the attitude of the medical profession toward his dictum that "the fast is Nature's remedy for all diseases." There was just one physician "who was really interested." This man lived "in an out of the way town in Arkansas" and asked Sinclair to "let him print several thousand copies of the article in the form of a pamphlet to be distributed among his patients." As Mr. Sinclair said at the time, "one single mind, among all the 140,000 [physicians], open to a new truth!" And this "open mind," that of a man who was practicing in a small town in Arkansas and needed "several thousand copies" of the Sinclair article to distribute to his patients!

After his "fasting cure" experience, Mr. Sinclair had the "raw food" fad—also abandoned in due time. In one of his recent books ("The Brass Check") he refers to his outgrown fads in the following words: "I . . . was willing to try anything in the hope of solving the health problem, which I have since realized is insolvable—there being no diet or system of any sort which will permit a man to overwork with impunity." He states further in this same connection:

"I look back in retrospect and have not a little fun over my 'monkey diet' days."

Who shall say that ten years hence Mr. Sinclair may not be able to look back, good humoredly, in retrospect, to another time when he was "monkeying" with a subject that was beyond his ken?

Correspondence

"CARDIOLOGY AND THE GENERAL PRACTITIONER"

To the Editor:—In his letter published in The Journal, April 1, Sir James Mackenzie makes some pointed and instructive remarks regarding the present status of cardiology. One must agree with nearly all he says. Especially timely and worthy of attention is the emphasis he lays on the importance of a thorough study and analysis of symptoms whose value as diagnostic aids is so easily overlooked in the enthusiasm for the findings revealed by physical and instrumental examination.

But is not Sir James a little too severe with the cardiologists? Are they or even the mass of intelligent and well trained practitioners—and we are justified in limiting the discussion to those who have received good modern instruction in medicine—really as bad as he makes them out to be? Are they all murmur-mad, laboring under the obsession that if a murmur is heard the diagnosis is complete and digitalis is to be prescribed? That this error has often been made must be admitted. But surely the day has passed when the clinician aims merely to make a diagnosis that will be shown at necropsy to be anatomically correct. And the notion that the valve is the all-important structure of the heart has long ago been given up. Juergensen, perhaps thirty years ago, in his volume on the heart, placed in heavy type, "Pancarditis is the diagnosis of the future." Krehl has written much on the disease of the heart muscle. Romberg devotes a large part of his textbook to a consideration of chronic muscular insufficiency. For many years there have been advocated various tests, most of them valueless, to be sure, to determine the functional power of the heart. But all this goes to show that the importance of the functional integrity of the heart muscle has been recognized. And this has been not alone in Germany but also in other countries, England and America included. The charge, therefore, that this fact is overlooked by practically all physicians—and by implication at least, this is the charge—seems unjust in that it is too sweeping.

And the opinion that the highest present day conception of cardiology "seems to be to use some mechanical device for the detection of the symptoms of disease"! It may be that the resentment one feels in reading this statement is an evidence that Sir James has touched one's hypersensitive raw spot. But does his statement, with the following context elaborating the same idea, correctly portray modern cardiology? Is it the highest conception of the few who employ the electrocardiograph to use it to detect symptoms? Fantastic views have occasionally been uttered regarding the information that this instrument can reveal, but the literature of electrocardiography is singularly free from claims that it is the supreme test in the diagnosis of heart disease. In this country, at least, no writer on electrocardiography has such a following as Sir Thomas Lewis. And the exhaustion of several editions of that marvelous little book, "Clinical Disorders of the Heart Beat," whose prime object was to acquaint physicians with the manner of recognizing cardiac irregularities without the aid of instruments, speaks strongly against the assumption of Mackenzie just quoted.

Mackenzie's strictures on the use of instruments in the diagnosis of heart disease have not been confined to the electrocardiograph or the polygraph. Elsewhere he has derided the sphygmomanometer, and he has said that at times he was inclined to believe that the invention of the stethoscope was a misfortune. We may make some allowance for the exaggeration of one justly indignant as he sees the abuses attending the use of these instruments; we may set down some of it to humorous overstatement whose object is to call attention to error in a striking manner. But, making all these allowances and granting the widespread improper use of these instruments in diagnosis, and granting, further, that they are unfortunately tending to supplement in a measure the trained eye, ear and finger; granting all this, I feel that a protest should be uttered against what seems to be a misrepresentation of the attitude of the majority of the better physicians regarding these instruments. He seems to put himself in a wrong light, for he must surely admit that, properly used, all these instruments are helpful and that at times they alone supply the very information needed to enable the physician to make an accurate diagnosis with its attendant prognosis and indications for treatment.

The student of the psychology of the crowd knows how easily it is swayed from one extreme to the other. Foolish and extravagant notions concerning the use of instruments in heart disease have had and are having their day with the mass of physicians. A craze of this kind is inevitable whenever remarkable results are announced as having their origin in hospital, laboratory or—we say it respectfully—in patient bedside work of a big-brained practitioner who was inspired to find out the reasons why. It has always been so, and probably always will be so. But because the crowd has gone wild we should no more decry the use of these instruments and by implication tell the practitioner to ignore them than we should teach that we should disregard leukocytosis or the Wassermann test because, forsooth, wrong and distorted values have been attached to them; or that we should discard the roentgen ray as an aid to diagnosis because daily its pictures are incorrectly interpreted and because many narrow-minded physicians place undue emphasis on this means of diagnosis at the expense of other simpler and often more important methods.

Instrumental and laboratory aids to diagnosis have come, and the nearer they are to being instruments and methods of precision, the surer have they come to stay. It would seem to be the part of wisdom not to belittle these methods, but to try to assess them at their true value and to fit them into their proper places in the scheme of medical practice. At present they should be adjuncts, at times nonessential, at times of essential importance.

I am venturing to make this criticism of Sir James' letter because it seems to me that it may easily convey, though it may not intend to do so, the wrong impression. Already I have seen more than once a tragic neglect of a heart murmur by practitioners who backed their position by quoting Mackenzie as saying that "a systolic murmur at the apex," etc., etc. They were incorrectly and incompletely quoting Sir James. But one whose word comes so far and with such weight of authority should be sure not only that the individual sentences and opinions convey his strict meaning, but also that the sum total, the general impression or tone of his communication, will be exactly as he intends, i. e., conveying the whole truth as he sees it.

James B. Herrick, M.D., Chicago.

To the Editor:—Certain statements in Sir James Mackenzie's letter (The Journal, April 1, p. 992) should not, I feel, pass unremarked. Coming as they do from so high an authority, they may lead to misconceptions which in the long run will hinder the advance of knowledge of diseases of the heart.

The statement that "the highest conception" of "present-day cardiology" is "to use some mechanical device for the detection of the symptoms of disease" is so far a misstatement that it could be more properly called the *greatest misconception.* Modern cardiologists, men who have been using the polygraph and electrocardiograph and sphygmomanometer for the last ten years or more, are unanimous in saying that the value of these instruments is great for certain special things but that we cannot rely on them for other sorts of information than they are qualified to give. One of the special features of the knowledge of a "cardiologist" is that he is able to say when such special instrumental examination is advisable.

The estimation of the blood pressure is not a proper basis for diagnosis unless a sphygmomanometer has been used, nor can the ventricular muscle be finally appraised until the electrocardiogram has been examined. True that in many cases we can say that there is probably no abnormality in the blood pressure, basing our statement on the general clinical features of the case and on feeling the pulse, but we know that we are certain to make mistakes if we do not use the sphygmomanometer. Similarly, in many cases we can say that there is probably no abnormality of the ventricular musculature, basing our statement on the clinical features of the case, listening to the heart sounds and perhaps an exercise test. Here again we are certain to make mistakes at times, for the other methods of investigation are not fitted to demonstrate structural disease of the muscle. In the same way, though we can in the majority of instances make a proper diagnosis of an arrhythmia by feeling the pulse and listening to the heart, yet we shall sometimes be wrong here too, but we shall never know that we are wrong unless instrumental records are taken.

I cannot believe that Sir James Mackenzie has clearly expressed his mind on this matter, for if so it is difficult to see how he could have spent so much time as he did in his earlier days on the instrumental examination of the arrhythmias. It was for the most part due to his efforts that we have our present clear insight into this abnormality.

His statement that "the use of instruments tends to foster the idea that they reveal matters which are most important" is certainly very true. The lay mind and the professional mind as well are liable to be impressed—overimpressed, probably—by polished metal and the photographic dark room, but this does not seem to be a proper reason for putting them aside. It is the duty of the "cardiologist" to use these methods of examination whenever they are indicated, and to fight strongly against the charm of their impressiveness to keep the information which they give—and they do give information which can be obtained in no other way at present—in its proper place in the general picture of the case.

It is true also, as Sir James says, that "the output of the heart is dependent upon the heart muscle." It is dependent on many other factors, though, for the peripheral resistance, the valve action, the respiratory function, the nervous system and even the body weight all have an influence on the effectiveness of the circulatory system, and may each contribute their part in the causation of circulatory failure. Without a thorough knowledge of the reason for failure in the given patient, we cannot take proper measures for its treatment, so that all of these systems must be investigated in some cases, and occasionally even the roentgen ray, most impressive of all instruments, will be called in to give information about the great vessels or about the lungs.

My purpose is not to take issue with Sir James Mackenzie, for his point of view is exceedingly sound and does not differ greatly from that of many others; but it seems that in decrying the *indiscriminate* use of instruments he has condemned *all* instrumental examination, and this is so far wrong that it should be plainly denied.

HAROLD E. B. PARDEE, M.D., New York.

"BLUISH DISCOLORATION OF THE UMBILICUS IN THE DIAGNOSIS OF RUPTURED EXTRA-UTERINE PREGNANCY"

To the Editor:—Apropos of the article in THE JOURNAL, March 4, on this subject, a case which was recently observed is of interest. Mrs. F., aged 36, ten days before admission to Montgomery Hospital, Norristown, Pa., had been treated for "intestinal grip." March 3, at 7 a. m., she was taken violently ill, fell unconscious to the floor and was sent to the hospital. On arrival she was still unconscious, and the skin much bleached. The pulse was normal, but very weak. The temperature was normal. There was no hemorrhage from the vagina, but an irregular mass was felt in Douglas' pouch. The abdomen was distended. The blood pressure was: systolic, 78; diastolic, 40. The urine was albuminous and contained casts. The erythrocytes numbered 1,110,000; the leukocytes, 19,400. The appearance of the umbilicus was exactly like that illustrated in Dr. Novak's article—greenish blue around the navel, but especially just below it, shading off to a greenish yellow. With our assistance, Dr. H. H. Drake operated. The abdomen was filled with dark blood and clots. There was a rupture in the posterior wall of the uterus, through which a foot of the 4½ months' fetus protruded. Hysterectomy was performed, and the usual treatment for shock and hemorrhage instituted. Death, however, occurred next day. Novak states that causes other than ectopic gestation are so rare that this sign of Cullen may be considered diagnostic of ruptured ectopic pregnancy. In our case it was not ruptured ectopic pregnancy, but ruptured uterus, probably due to criminal abortion. And there may be a sufficient number of such cases to make it advisable to modify former views, and consider it diagnostic merely of intraperitoneal hemorrhage from any cause. Dr. Drake thinks that its value lies in its being a delayed sign. The umbilical discoloration may often have been mistaken for an exaggerated linea nigra, which may be present at the same time.

W. W. DILL, M.D., and F. B. LITTLE, M.D.,
Norristown, Pa.

"'BASAL METABOLISM'—A DISCLAIMER OF RESPONSIBILITY"

To the Editor:—In Dr. Du Bois' communication (THE JOURNAL, March 25, p. 916), mention is not made of the fact that on October 22 he also said in his letter: "Personally, I have no objection to any one's making abstracts of my papers." On October 28 he wrote: "I have no objection to your quoting the entire article 'The Basal Metabolism in Fever,' provided you obtain the necessary permission from the American Medical Association. I can see how the change in title you suggested would fit in better with your table of contents which you kindly enclosed."

Dr. Du Bois' name was published in the book, Basal Metabolism, as one who had approved of an abstract, whereas, instead of an abstract his article was published in full by his permission.

F. B. SANBORN, Boston.

CONNECTION BETWEEN MASSAGE AND THE METASTASIS OF TUMORS

To the Editor:—In an article in the *Annals of Surgery* (**75**:129 [Feb.] 1922), Dr. L. C. Knox calls attention to the danger of massage of tumors as distributing metastatic particles throughout the body. She refers to a patient massaged by a physical healer with disastrous results. I am hearing from others of similar instances, and I believe that it would be very helpful if those who have an opportunity to observe patients whose tumors had been massaged with the idea that a cancer could be "dissipated" would report the results of their observations in THE JOURNAL. Such reports would unquestionably bring to a sudden stop the practice of tumor massage.

FRANCIS CARTER WOOD, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE EMERY TEST

To the Editor:—What is the present status of the Emery test as described on page 202 in "Stitt's Practical Bacteriology, Blood Work and Animal Parasitology," fifth edition? It is my desire to perform this test with serum which has not been inactivated, thus dispensing with the guinea-pig serum entirely. I would depend on the complement in the fresh serum of the patient. Would there be any objection to obtaining the red cell suspension by repeated washing of the blood of the patient in physiologic sodium chlorid solution? I plan to withdraw sufficient blood from the patient's vein to place from 8 to 10 drops of this blood in citrated physiologic sodium chlorid solution and the remainder in a centrifuge tube to obtain the patient's serum. The test would, of course, be performed within the next few hours before deterioration of either the red cells or the serum. I am planning to purchase from the Physicians Laboratory Supply Company of Chicago liquid acetone insoluble antigen, and antihuman amboceptor. If published, kindly omit my name.

J. W. V., Idaho.

ANSWER.—Neither the original Emery test nor the modification described in Stitt's "Practical Bacteriology" has been widely used, at least in this country. While it is similar to other tests in some respects, especially in that it utilizes human serum as the source of the complement, yet it does not seem that it is as reliable or as simple as some other tests, as for instance that of Noguchi (*J. Exper. Med.* **28**:43 [July] 1918). While the amount of serum used in the modification of Emery's test is small, there is no special advantage in this, as the amount of amboceptor is no less than in other methods. Further, the manipulation of minute quantities of the various factors of the test by the capillary tubes of Wright, as used in this test, requires more skill than the use of the usual graduated pipets employed in other methods.

This test is performed with the inactivated serum, thus utilizing the natural complement present. However, if the serum is old, the amount of complement is inconstant, in which case it is wise to inactivate the serum and restore the complement either by the addition of fresh human or guinea-pig serum. There is no objection whatever to the use of the corpuscles of the patient as the cells to be hemolyzed and, indeed, there is an advantage in this as it does away with the need of the worker pricking his finger to obtain the supply of cells. Of course, with this test, like any other modification of the Wassermann test, one must have reliable antigen and amboceptor and must have them carefully standardized and titrated.

While there is no objection to employing the test suggested, it would seem wiser, if one desires to use the homohemolytic system, to follow the method of Noguchi as given in the reference above rather than to employ the more uncertain modification of the Emery test.

PRESCRIPTION FOR HEMORRHOIDS

To the Editor:—Please criticize this prescription for hemorrhoids. If it can be improved, kindly make the necessary changes.

℞	Tincture of belladonna leaves	ʒ i
	Extract of stramonium	ʒ i
	Tannic acid	ʒ ij
	Cerated resinol comp.	
	Ointment of zinc oxid	āā q. s. ad ℥ ij

A. H. Staples, M.D., San Mateo, Calif.

Answer.—There is no reason for prescribing both tincture of belladonna leaves and the extract of stramonium in one preparation; their active principles are virtually identical. Furthermore, requiring the druggist to incorporate the tincture of belladonna leaves in an ointment is giving him unnecessary trouble, as ointments do not mix well with alcoholic fluids. Prescribing 1 dram of the extract of belladonna leaves instead of the two solanaceous preparations would provide at least as much and probably more of the active alkaloids, as the relation of the average alkaloidal strength of the extract of stramonium to the extract of belladonna leaves is as 1:1.2. As the tincture of belladonna leaves has an average of only 0.03 per cent. of total alkaloids, the total amount of alkaloids in the prescription given is approximately 0.0412 gm., while 1 dram of extract of belladonna leaves would contain approximately 0.048 gm.

It would be of advantage to dissolve the tannic acid in an equal weight of glycerin, as is done in the official ointment of tannic acid. In this manner, a smoother ointment is obtained—one less likely to produce irritation by reason of inadequate breaking down of masses of tannic acid crystals during their incorporation in the ointment.

The item "cerated resinol comp." is probably intended to read "ceratum resinae compositum," or "compound rosin cerate," which was official in the U. S. P. VIII, but which has been deleted because of a tendency to become of tough consistency on keeping. The formula for this preparation is now to be found in the National Formulary. The official rosin cerate would probably do as well.

The prescription, changed in accordance with these considerations, might, therefore, be written:

		Gm. or C.c.	
℞	Extract of belladonna leaves	4	ʒ i
	Tannic acid	8	ʒ ij
	Glycerin	8	ʒ ij
	Rosin cerate	20	ʒ v
	Zinc oxid ointment	20	ʒ v

Mix and dispense in collapsible tube with rectal tip.

SPECIAL DISEASE SUSCEPTIBILITIES OF PHOTOGRAPHERS

To the Editor:—We are gathering data and statistics as to the susceptibility of photographers to tuberculosis. Can you give us any mortality information along this line of investigation? R. S., Virginia.

Answer.—We are unable to find any special information as to susceptibility of photographers to tuberculosis. Workers in photographic establishments, especially those engaged in the developing process, are frequently exposed to bad air and light and to the industrial poisoning associated with the chemicals used. Cases of poisoning due to platinum paper and to metol have been reported in the literature.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Georgia: Atlanta, May 31-June 2; Augusta, June 7-9. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

Nevada: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

DOCTORS AND NEAR-DOCTORS

The public is ever impatient of the physician's doubtful diagnosis, of his inability to explain disease in a word and cure it with a word. It is ever eager to welcome a simple statement of why we get sick and how we may get well again. If this statement has any degree of inherent plausibility, it will impose upon large numbers of intelligent people.

A case in point is the newest school of healing, "chiropractic." Every physical process is of course directed through the nerves. These lie in part in the spine, branching off to their destinations. Spinal dislocations lead to pressure of bone on nerve, inducing paralysis and other disorders. Aside from the specific cure which resetting will effect, it is clear enough that spinal massage will be of much general value.

So far, so good. But the chiropractor makes the generalization that all disease, of whatever character, is due to spinal displacements of a mild sort for which he has invented the name "subluxations." He proposes to cure and to prevent *all* illness by fingering the spine and setting right its subluxations. He treats blindness and deafness in this way, though the nerves to eye and ear never leave the skull. Germ diseases that are too well established to be attacked as such he meets with the explanation that infection proceeds *only in the presence of subluxations*—if we but have perfect spines we may with complete immunity carry capacity cargoes of the deadliest bacteria. The chiropractic novice locates with a touch of the finger "subluxations" of which trained anatomists are able to find no slightest trace. The spines of investigators have been X-rayed before and after chiropractic treatment, with no visible change. As more than an adjunct to orthodox medical practice the thing is absurd.

Now the M.D. is compelled by law to be of good character; to have a common education admitting him to a university of standing; to study medicine for four years or more; to pass a stiff examination in his entire field. Then and only then is he free to "diagnose, treat, and claim to cure" under state license.

Anyone lacking the full equivalent of these medical requirements should be excluded from diagnosis, treatment and claim to cure, in no matter what guise; one who without this training practices in any way on the human mechanism is a menace. We cite a typical case, where a thoroughly honorable practitioner of one of these newer schools was treating a troublesome knee. The case was diagnosed as calling for ordinary manual treatment—massage, to call a spade a spade. For six months it got this; and the bone tuberculosis which was at the root of the matter has been diffused throughout the patient's body, so that she is now dying of pulmonary tuberculosis. Treatment without competent diagnosis of the most innocent-appearing malady necessarily involves risk or error as serious as this.

Another aspect is even more vicious. Frankly the chiropractic schools hold out the lure "no preparation needed beyond the ability to read and write." They urge the student to register now, before the state steps in and stiffens the requirements; they guarantee that if he does they will certify him as having met any new requirements which may be enacted before he graduates. An investigator, taking courses at one of these schools, was careful in his final examination in chemistry to answer every question incorrectly—and still he "passed." Half and quarter hours are substituted for full hours of study to conceal the extent to which an adequate course is not given. Graduates of correspondence schools are certified to practice, though they have never seen the inside of a classroom or clinic. The testimonial factory at Davenport, Iowa, circulated 100,000 copies of a document attesting to a miraculous cure in a case where investigation showed that recovery was had only after the chiropractor had failed to give relief and had been discharged. The recorded cures in any event follow the chiropractor's own diagnosis—which at best is incompetent and at worst is a deliberate exaggeration. The gentle art of "selling" his wares to the prospective patient is a large part of the course offered the chiropractic student, who in one case is recruited by means of street-corner soap-box orators. A member of the New York County Medical Society found a chiropractor who had been highly recommended to be a man whom he had known six months before as a chauffeur.

These are but the high spots. The reason why chiropractic has attracted persons of such caliber is because it affords a quick and easy way to set up a pseudo-medical practice that will earn specialist's fees, without meeting the requirements of honest medicine. As long as such an opening is available it will be used. To prevent this sort of "professional service" from gaining an established footing as well as to protect the individual patient, it ought to be a definitely established principle that no substitute for a doctor may advise or treat without a doctor's consent, unless he has learned as much as a doctor must learn and has learned it as thoroughly as a doctor must. The proposal now made in New York to license chiropractors or exponents of other cults after a rump preparation of a year or two is in every way bad.—Editorial, *Scientific American,* May, 1922.

Book Notices

Anatomy of the Brain and Spinal Cord. By J. Ryland Whitaker, B.A., M.B., Examiner in Anatomy, Royal College of Physicians, Edinburgh. Fifth edition. Cloth. Price, $3.50. Pp. 262, with 103 illustrations. Chicago: Chicago Medical Book Company, 1921.

This well known manual, which has introduced so many generations of medical students to the anatomy of the nervous system, has been out of print for nearly ten years. This edition has been revised in the light of recent advances without material increase in the size or change in the character of the work. The detailed anatomic descriptions of spinal cord and brain are preceded by directions for their dissection. The descriptions of meninges and vascular supply are full and clearly presented, though the account of the cerebrospinal fluid requires some revision in the light of Weed's researches. The description of the brain is taken up in this order: membranes, vessels, medulla oblongata, pons, cerebellum, cerebrum, origins of the cranial nerves, development. The arrangement adopted and the treatment do not facilitate an adequate functional interpretation of the complex conduction pathways of the brain stem, for the key to the analysis of this intricate picture is found only in the peripheral connections of the various systems of fiber tracts, and these are referred to only toward the close of the book and here inadequately. Functions of the parts are mentioned in passing, but nowhere does the student find a clear analysis of conduction pathways as these are knit together in functional systems. A wealth of anatomic detail is presented to the reader, but he is not materially aided in assembling these details in significant patterns. Assistance of this sort is the prime function of a textbook on the nervous system, for dissection and the memorizing of anatomic names are of no possible use to the medical student except so far as he can visualize the parts in action and diagnose the site of disordered function. The orderly demonstration of a dozen specific sensory and motor pathways in gross and microscopic preparations which the student himself makes (so far as possible) and, in any event, studies personally in leisurely fashion, and the linking of these tracts in functional sequences from the peripheral sense organ, through the complex web of tissue in spinal cord and brain stem, to the cerebral cortex and again back to the motor periphery, with a few illustrations of the patterns of subcortical reflex connections between these systems, is of more value to the medical student than are hundreds of detached anatomic facts. And this is quite within the grasp of the average student in the time usually set apart for neuro-anatomy in most of the American medical schools. But, to accomplish this result, the course must be so planned as to give the students skilled guidance in both laboratory and lecture room, and they should have in their hands textbooks in which the anatomic facts are organized in these functionally defined patterns, and details irrelevant to this program are excluded. The vascularization of the central nervous system, and an account of the cavities containing cerebrospinal fluid and the probable movements of the latter, are of great importance in such a course. This should be followed by a functional analysis of the roots of the peripheral nerves and the peripheral and central connections of each physiologically defined system of nerve fibers. Only on such foundation is a true understanding of the central conduction pathways and correlation centers possible.

Die örtliche Betäubing ihre wissenschaftlichen Grundlagen und praktische Anwendung. Ein Hand- und Lehrbuch. Von Prof. Dr. Heinrich Braun, Geh. Medizinalrat, Direktor der Krankenstiftes in Zwickau. Sixth edition. Cloth. Price, 100 marks. Pp. 508, with 213 illustrations. Leipzig: Johann Ambrosius Barth, 1921.

While this edition has not been enlarged by the addition of more pages, considerable new material has been added, space for which was made available by omitting many unnecessary references to the literature. Additions are noted in a more extended analysis of the toxic effects of local anesthetics and in the use of spinal and sacral anesthesia. Spinal anesthesia is held to be too dangerous, except in special cases, to come into competition with general narcosis. The chapter on sacral anesthesia or, as the author calls it, epidural anesthesia, is rather disconnected and somewhat unsatisfactory. Many of the after effects and some of the fatalities were undoubtedly due to the use of an unnecessarily strong solution. The strength of the solution should be no greater than is necessary to produce the desired effect, as the dangers increase with the strength. Even with the elimination of many of the references, already noted, the bibliography appended is most elaborate, filling forty pages of small type.

Grundiss der Wundversorgung und Wundbehandlung, sowie der Behandlung geschlossener Infektionsherde. Von Privatdozent Dr. W. von Gaza, Assistent an der Chirurgischen Universitätsklinik, Göttingen. Paper. Price, 56 marks. Pp. 279, with 32 illustrations. Berlin: Julius Springer, 1921.

This work serves the purpose of collecting into one volume virtually every phase of the subject of wound infection. The first part deals with fundamental principles, with biology and with pathology. In the second, general principles of treatment are discussed. The much abused problem of wound drainage is well handled. In the third part, special types of wound infection, such as diphtheria, tuberculosis and infected varices, and of special anatomic locations, such as the hand, ribs, pleura and peritoneum, are considered. In the fourth part the various antiseptic mediums, antiseptic powders, bismuth, hypertonic salt and sugar solutions, and chlorin preparations are discussed. The chief criticism of the work is that too much is attempted under the subject of wound infection. A wide range of important topics is covered all too briefly; infections of the hand are given no more consideration than in the average students' textbook. The subject of surgical tuberculosis, including lesions of bones, joints, ribs, pleura and tendon sheaths, can hardly be well covered in so short a space as the author devotes to them. On the other hand, the discussion of antiseptic powders and solutions could be materially reduced; comparatively, too little consideration is given the Carrel-Dakin treatment. It must be remembered, however, that wounds and wound infection form a difficult subject to present completely and satisfactorily.

Man—The Animal. By W. M. Smallwood, Ph.D., Professor of Comparative Anatomy in Syracuse University. Cloth. Price, $2.50. Pp. 223, with 56 illustrations. New York: The Macmillan Company, 1922.

Biology, heretofore, has been "in storage" under intricate locks and keys which only students held; but the time has come when the significance of that knowledge is better understood, and its wholesale application should be more emphasized. In this book, ten fundamental biologic laws are explained: the law of biogenesis, of the chemical composition of living things, of structure, of growth, of sensation, of maintenance of life, the law governing the relation of life to the living body, that governing the size and age of living bodies, and the law governing the fate of dead bodies. The chapters following on heredity, reproduction in man, the problem of learning, and biology and progress aim to apply briefly the foregoing laws. This book has been prepared for the layman; few writers present scientific facts more clearly.

A Form of Record for Hospital Social Work, Including Suggestions on Organization. By Gertrude L. Farmer, Director, Department of Social Work of the Boston City Hospital. Cloth. Price, $1.50. Pp. 81. Philadelphia: J. B. Lippincott Company, 1921.

This presents record forms and methods in social service record keeping designed to help those who have to devise or use any social record form or set of forms. The organization of the social record system is included, along with the development of the various subjects. The value of social records is made apparent, and the items that are vital in a social case record are pointed out. The forms illustrated are of sufficient elasticity to adapt them to a wide range and should in themselves be helpful to hospital social workers. Along with the discussion of forms is intervowen the evaluation of each of the various items that go to make up a social record.

What Is Christian Science? By M. M. Mangasarian. Paper. Pp. 63. Chicago: The Author, 1921.

The author is head of the Independent Religious Society of Chicago, and lectures regularly to large audiences. In this booklet he has compiled the usual statements as to the life of Mrs. Eddy, and as to the actual origin of the Christian science cult, and has added a somewhat searching analysis of doubtful statements in the book "Science and Health." The arguments as to the fallacies and faults of the cult are such as would convince any logical minded person, but are not likely to be more effective than other publications in convincing the fanatical believer who refuses to "listen to reason."

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Syphilis, Graduate School of Medicine, University of Pennsylvania. Fourth edition. Cloth. Price, $5, net. Pp. 626, with 265 illustrations. Philadelphia: W. B. Saunders Company, 1921.

In this edition the chapter on syphilis has been entirely rewritten because modifications of treatment, including even the selection of drugs, occur almost daily. Dr. Schamberg's views have appeared in periodical literature, and in this edition of his book these views are presented in their complete forms. The remaining portions of the book have also been brought up to date, so that the revision sustains the reputation this textbook has held for many years.

Atlas der Syphilis. Von Professor Leo v. Zumbusch. Cloth. Price, 120 marks. Pp. 31, with 64 illustrations. Leipsic. F. C. W. Vogel, 1922.

This atlas presents sixty-four colored illustrations of the lesions of syphilis. The illustrations were obtained by colored photography and are produced by lithographic methods. In the teaching of students, such details should serve a most useful purpose.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

American Association for the Study of the Feebleminded, St. Louis, May 18-20. Dr. R. W. Baker, Laconia, N. H., Secretary.
American Association of Anesthetists, St. Louis, May 22-24. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Association of Industrial Physicians and Surgeons, St. Louis, May 22-23. Dr. W. A. Sawyer, 343 State St., Rochester, N. Y. Sec'y.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Proctologic Society, St. Louis, May 22. Dr. Ralph W. Jackson, 245 Cherry St., Fall River, Mass., Secretary.
American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Middletown, Conn., Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society for Clinical Investigation, Washington, D. C., May 1. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia. Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Association for the Study of Internal Secretions, St. Louis, May 22. Dr. F. M. Pottenger, Title Insurance Bldg.. Los Angeles, Secretary.
California, Medical Society of the State of, Yosemite, May 15-18. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
International Congress of Ophthalmology, Washington, D. C., April 25-May 3. Dr. Luther C. Peter, 1529 Spruce St., Philadelphia, Sec'y.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Medical Library Association, St. Louis, May 22-23. Dr. John Ruhräh, 1211 Cathedral St., Baltimore, Secretary.
Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Jefferson City, May 2-4. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
North Dakota State Medical Association, Jamestown, June 1-2. Dr. H. J. Rowe, Lisbon, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 1. Dr. I. W. Leech, 111 Broad St., Providence, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. R. D. Alway, 423 S. Lincoln St., Aberdeen, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March, 1922, **30**, No. 2

Development of Cloaca in Birds; Origin of Bursa of Fabricius, Formation of Urodeal Sinus and Regular Occurrence of a Cloacal Fenestra. E. A. Boyden, Boston.—p. 163.

*Nature of Mitochondria. I. Observations on Mitochondria Staining Methods Applied to Bacteria. II. Reactions of Bacteria to Chemical Treatment. I. E. Wallin, Boulder, Colo.—p. 203.

Development of Saccus Endolymphaticus in Rana Temporaria Linne. B. Whiteside, Zurich, Switzerland.—p. 231.

Nature of Mitochondria.—The results obtained by Wallin in subjecting bacteria to mitochondrial staining methods and to the chemicals that have been utilized to determine the chemical nature of mitochondria appear to demonstrate that these methods are not specific for mitochondria, but have a similar reaction on bacteria. To the degree that these staining methods and chemical reactions are not specific, bacteria and mitochondria have a similar chemical constitution.

American Journal of Tropical Medicine, Baltimore

March, 1922, **2**, No. 2

Yellow Fever in Peru. Epidemic of 1919 and 1920. H. R. Carter.—p. 87.

*Inoculation of Experimental Animals with Malaria. C. C. Bass, New Orleans.—p. 107.

Photodynamic Action of Extracts of Various Grains with Special Reference to Pellagra. D. M. Gay and M. A. McIver, Boston.—p. 115.

*Systemic Blastomycosis. M. L. Graves, Galveston, Texas.—p. 123.

*Case of Paget's Disease Associated with Carcinomatous Infiltration of Breast of a Male Native of Sudan. R. G. Archibald, Khartoum, Egypt.—p. 133.

Conception that Sprue is a Mycosis Superimposed on a State of Deficiency in Certain Essential Food Elements. B. K. Ashford.—p. 139.

Filariasis and Its Relation to Other Tropical Lymphopathies. R. Ruiz-Arnau.—p. 151.

Experimental Malaria.—In three different sets of experiments made by Bass four guinea-pigs, five rabbits and one monkey (*Macacus rhesus*) were inoculated directly into the blood stream, with blood containing *P. falciparum.* The plasmodia were proved to be living and viable at the time they were injected into the animals, by the fact that cultures put up at the same time grew and segmented. The animals remained apparently well and repeated blood examinations extending beyond the incubation period of malaria in man failed to show plasmodia in any of the animals except in one guinea-pig twenty-four hours after the inoculation. These plasmodia did not seem to have grown, although those in the corresponding culture in human serum had practically all grown beyond the ring stage found in the animal. The plasmodia in cultures in serum from the different animals failed to grow, although those in the corresponding cultures in human serum grew in the usual way. The experiments furnish additional evidence that these particular animals, guinea-pigs, rabbits and monkeys (*Macacus rhesus*) are resistant to human malaria and tend to support the conclusion of other workers, that they are not susceptible to infection.

Systemic Blastomycosis.—In the case reported by Graves the premortem diagnosis was blastomycosis, systemic infection, septic pneumonia right and left lungs, acute nephritis. At the time of death, the patient's temperature was 95.2 F. At the necropsy were found (1) blastomycotic granulomas in both lungs, the middle lobe of the right lung being studded with little grayish areas of consolidation, and (2) an acute interstitial nephritis, but no evidence of blastomyces. Blastomycetes were found in several skin abscesses and were cultivated successfully.

Paget's Disease of Male Breast.—Archibald's case represents two points of more than usual interest: (1) the existence of Paget's disease of the nipple in a male breast; (2) its association with a carcinoma of the breast, in a male native, aged 35 years. There was no history of trauma in this case. Operation was refused.

American Review of Tuberculosis, Baltimore

March, 1922, **6**, No. 1

Experimental Studies on Tuberculous Infection. A. K. Krause, Baltimore.—p. 1.

*Behavior of Cultures of Chick Embryo Tissue Containing Avian Tubercle Bacilli. D. T. Smith, H. S. Willis and M. R. Lewis, Washington, D. C.—p. 21.

*Torus Palatinus: Alleged New Sign of Pulmonary Hypertrophic Osteoarthropathy. H. Schwatt and M. M. Steinbach, New York.—p. 35.

Utilization of Dextrose by Tubercle Bacillus. C. J. Gamble and M. C. Herrick, Boston.—p. 44.

*Table Utensils as Sources of Tuberculous Infection. C. Floyd and L. Frothingham, Boston.—p. 51.

*Destruction of Tubercle Bacilli in Sewage by Chlorin. J. M. Conroy, B. B. Conroy and A. T. Laird, Nopeming, Minn.—p. 63.

Type and Environment of Employment as Factors in Expectancy of Life of Working Class Consumptive. R. C. Wingfield, Frimley, Eng.—p. 69.

Action of Living Tissue Cells on Tubercle Bacilli.—The behavior of living cells toward living tubercle bacilli was studied by Smith et al. under experimental conditions which are not greatly injurious to either form. Their observations have shown that tubercle bacilli were taken in by clasmatocytes, fibroblasts, white blood cells, endothelial cells, mesothelial cells, ectodermal cells, liver cells, kidney tubule cells, and cells lining the bronchioles and alveoli of the lungs. No micro-organisms were observed in red blood cells, striated muscle cells, nerve cells, or ciliated epithelial cells. The phenomena accompanying the appearance of tubercle bacilli within these cells were precisely the same as those shown by similar cells in regard to other foreign bodies. Entrance into cells was dependent on the consistency of the cytoplasm of the cell, the composition of the foreign body, and also the position of the foreign body in relation to the surface of the cell. Contrary to the generally accepted idea, the cell did not make any active movements toward the bacillus, nor was any migration of bacilli toward the cell observed. The number of micro-organisms taken in by the cell and the rapidity of the process varied greatly with different types of cells. The clasmatocytes were the most active; after that, the giant cell, the nongranular white blood cell, the granular white blood cell, and the fibroblast, in the order named. Once inside the cell, the bacilli were moved back and forth in the cytoplasm in a manner characteristic of included foreign bodies. In the course of time a small vacuole formed about the micro-organism, which was eventually destroyed. The presence of tubercle bacilli within the cell or in the explant did not stimulate the formation of giant cells. The emulsion injected into the peritoneum of pigeons produced progressive disease of moderate severity.

Torus Palatinus.—Chassaignac first described a protrusion in the midline of the hard palate as exostose medio-palatine and looked on it as a pathognomonic sign of syphilis. Later, in 1844, Carabelli described this same protrusion and termed it torus palatinus, but did not associate it with any particular disease. Hyrth, in 1882, regarded it as harmless and even of normal occurrence in healthy persons. In order to determine whether torus palatinus has any relation to hypertrophic osteo-arthropathy, the patients in the Tugerculosis Division of Montefiore Hospital and Bedford Sanatorium were examined. Schwatt reports the findings of 269 cases, 42 presented a protuberance along the palatine suture, varying considerably in size and shape. Only a few cases of the size of half a pigeon's egg were found. Of the females 20.6 per cent. and of the males 11.6 per cent. presented a torus. Only seven cases with a torus showed clubbing of the fingers and toes and hyperconvexity of the nails, singly or in one or another combination. Slight clubbing of the fingers was associated in three, and slight to moderate hyperconvexity of the nails in six cases. In only one case was the hyperconvexity marked. Combined clubbing and hyperconvexity occurred in only three cases. Clubbing of the toes was present to a slight degree in two, slight hyperconvexity in three, moderate in two, marked in one and in only one case was it combined. The most marked cases of clubbing of the fingers and hyperconvexity of the nails did not exhibit a torus, while only three of the twenty moderate and none of the seven marked instances of the torus showed clubbing or hyperconvexity. Two patients in whom the torus reached its most extreme size showed typical tapering fingers and no signs whatsoever of hypertrophic osteo-arthropathy. Thickening of the carpal and metacarpal bones and of the corresponding bones of the feet, or enlargement of the lower ends of the humerus and femur or abnormal prominence of the malar bones, some of the most cardinal signs of hypertrophic osteo-arthropathy, were entirely absent in all cases of torus. No relation of the torus to the activity of the disease, its duration nor to the age of the patient could be established.

Table Utensils as Source of Tuberculous Infection.—This study made by Floyd and Frothingham of thoroughly washed table utensils used by open consumptives in twenty-five private homes, and of the water employed to wash this tableware, resulted in one positive guinea-pig inoculation from the utensils, and four from the wash water, that is, 2 and 21 per cent., respectively, if the guinea-pigs which were not under observation for at least three weeks are excluded. From these experiments it seems evident that the table utensils used by an open consumptive may be not only a menace to the patient himself and to others in his family, but also a general menace when the patient eats in public places. The inference also seems warranted that the dish towel used to wipe these utensils must become contaminated with virulent tubercle bacilli, and the more frequently it is used the more bacilli accumulate so that if employed for several days without thorough washing, a common practice in many homes, it becomes more and more a depositor of tubercle bacilli on the just washed utensils. It would seem, therefore, that the only way to control the danger of spreading tuberculosis by such utensils is to thoroughly sterilize the patients' tableware and the dish towel employed to wipe it, after each meal, and the simplest method to accomplish this is to boil them for several minutes.

Destruction of Tubercle Bacilli by Chlorin.—Tests were made by the Conroys and Laird of the effluent from the Imhoff tank at Nopeming Sanatorium, before and after treatment with chlorin, to determine the frequency with which tubercle bacilli are present in the effluent and the practicability of destroying them with chlorin. Of twenty-four guinea-pigs inoculated with effluent untreated with chlorin, twenty-one developed definite tuberculosis, and none of the thirty inoculated with effluent after the treatment with chlorin became tuberculous. It is evident that sewage from a tuberculosis sanatorium nearly always contains living tubercle bacilli, and that the use of a chlorin machine is a practical means of ridding such sewage of tubercle bacilli.

Archives of Neurology and Psychiatry, Chicago

April, 1922, **7**, No. 4

Cortical Motor Mechanism of Sheep Brain. C. Bagley, Jr., Baltimore. —p. 417.
*Paralysis of Associated Lateral Movements of Eyes. Symptom of Intrapontile Lesion. W. Freeman, Philadelphia.—p. 454.
Chemical Investigations of Central Nervous System Under Normal and Pathologic Conditions. M. L. Koch, Ward's Island, N. Y.—p. 488.

Paralysis of Associated Lateral Movements of Eyes.—The feature of prime importance in Freeman's case was the paralysis of associated movement for it rendered the thought of operation untenable. The symptom was striking. Barring nystagmus, the eyes could be moved normally to the right, upward and downward, but movements to the left of the midline were impossible. Yet the patient could converge to the physiologic limit, that is to say, the internal rectus of the right eye was paralyzed for associated movement to the left, but not for the same movement in convergence. At rest both eyes were in the primary position.

Boston Medical and Surgical Journal

April 6, 1922, **186**, No. 14

*Ovarian Hematomas of Endometrial Type (Perforating Hemorrhagic Cysts of Ovary) and Implantation Adenomas of Endometrial Type. J. A. Sampson, Albany, N. Y.—p. 445.
*Modifications of Apparatus and Improved Technic Adaptable to Benedict Type of Respiration Apparatus. I. Valves Versus Electric Impeller. P. Roth, Battle Creek, Mich.—p. 457.
Id. II. Technic. P. Roth, Battle Creek, Mich.—p. 463.

Ovarian Hematomas of Endometrial Type.—Sampson's interpretation of the usual origin and development of implantation adenomas of endometrial type is as follows: Tubal and uterine epithelium may at times escape into the peritoneal cavity through the fimbriated end of the tube. It lodges where such material would be likely to fall, especially on the lateral surface of the ovary and in the culdesac, the distribution corresponding to the distribution of pus escaping from the tube in salpingitis. Adenoma may develop wherever this epithelium falls on suitable "soil." We may, therefore, have implantations only on the ovary, especially on its lateral surface and free border. They may occur both in the ovary and in the pelvis or in the pelvis alone. The tubules arising in the ovary may develop into hematomas which usually perforate and give rise to implantation adenomas apparently usually more invasive (virulent) and with a wider distribution than the implantations found without evidence of an ovarian hematoma. Sampson considers the ovary as a sort of intermediary host, hotbed or incubator which imparts greater virulence to the epithelial cells developing in it, but it may not be an essential intermediary host in the origin of implantation adenomas of endometrial type.

Modified Benedict Respiration Apparatus.—The adaptation of valves in the Benedict type of respiration apparatus (discarding the electric impeller) is shown by Roth to be very practical while fully preserving its precision for the estimation of the metabolic rate. The "valve" apparatus, with other minor modifications, is described and its advantages are presented.

Delaware State Medical Journal, Wilmington

January, February, March, 1922, **12**, No. 5

Relation of Veterinarian to Prophylactic Human Medicine. R. R. Spahr, Middletown.—p. 2.
Bases of So-Called Neurasthenic States. T. A. Williams, Washington, D. C.—p. 9.
Indications for Nasal Submucous Resections in Air Service. W. F. Bonner, Wilmington.—p. 11.
What is Legitimate Medical Charity? E. H. Ochsner, Chicago.—p. 14.
Dangers and Duties of Hour. H. A. Hare, Philadelphia.—p. 21.

Iowa State Medical Society Journal, Des Moines

March, 1922, **12**, No. 3

Clinical Study of Fifty Cases of Pneumothorax. W. S. Lemon and A. L. Barnes, Rochester, Minn.—p. 81.
Acute Abdomen. E. F. Beeh, Fort Dodge.—p. 89.
Chronic Colitis. C. B. Luginbuhl, Des Moines.—p. 96.
Plan of Medical and Research Service of Iowa State Psychopathic Hospital. L. G. Lowrey, Iowa City.—p. 100.
Physicians Who Located in Iowa in Period Between 1850 and 1860. D. S. Fairchild, Clinton.—p. 103.

Journal of Biological Chemistry, Baltimore

March, 1922, **51**, No. 1

Preparation of Mannose. E. P. Clark, Washington.—p. 1.
Effect of Loss of Carbon Dioxid on Hydrogen Ion Concentration of Urine. E. K. Marshall, Jr., Baltimore.—p. 3.
Studies in Carbohydrate Metabolism. III. Study of Urinary Sugar Excretion in Twenty-Six Individuals. I. Neuwirth, New York.—p. 11.
Nitrogen Distribution of Proteins Extracted by 0.2 per cent. Sodium Hydroxid Solution from Cottonseed Meal. Soy Bean and Coconut. W. G. Friedemann, Stillwater, Okla.—p. 17.
*Separate Analyses of Corpuscles and Plasma. H. Wu, Peking, China. —p. 21.
New Colorimetric Method for Determination of Plasma Proteins. H. Wu, Peking, China.—p. 33.
*Studies on Experimental Rickets. XVI. Delicate Biologic Test for Calcium Depositing Substances. E. V. McCollum, N. Simmonds, P. G. Shipley and E. A. Park, Baltimore.—p. 41.
Calcium in Egg Shell Formation. G. D. Buckner, J. H. Martin, W. C. Pierce and A. M. Peter, Lexington, Ky.—p. 51.
Method for Estimation of Total Base in Urine. C. H. Fiske, Boston. —p. 55.
Fat Soluble Vitamin. X. Occurrence with Yellow Plant Pigments. H. Steenbock and M. T. Sell, Madison, Wis.—p. 63.
Water Soluble B Vitamin and Bios in Yeast Growth. E. I. Fulmer and V. E. Nelson, Ames, Iowa.—p. 77.
Reply to Fulmer, Nelson and Sherwood Concerning Medium F. W. H. Eddy, H. L. Heft and H. C. Stevenson, New York.—p. 83.
Hypobromite Reaction on Urea. P. Menaul, Stillwater, Okla.—p. 87.
Gasometric Determination of Urea. R. L. Stehle, Montreal, Canada. —p. 89.
Carbohydrate Content of Seep of Asparagus Officinalis L. W. E. Cake and H. H. Bartlett, Ann Arbor, Mich.—p. 93.
Chemical Study of Proteins of Adsuki Bean, Phaseolus Angularis. D. B. Jones, A. J. Finks and C. E. F. Gersdorff, Washington, D. C.—p. 103.
*Clinical Method for Estimation of Chlorids in Blood. H. Friend, New York.—p. 115.
Studies on Amino-Acid Nitrogen Content of Blood. S. Okada and T. Hayashi, Tokyo, Japan.—p. 121.

Hydrogen-Ion Concentration of Intestinal Contents. S. Okada and M. Arai, Tokyo, Japan.—p. 135.
Influence of Putrefaction Products on Cellular Metabolism. II. Influence of Phenylacetic and Phenylpropionic Acids on Distribution of Nitrogen in Urine. Y. Hijikata, Kyoto, Japan.—p. 141.
Cleavage Products of Crystalline Lens. Y. Hijikata, Kyoto, Japan.—p. 155.
*Do Amino-Acids Occur in Cow's Milk? Y. Hijikata, Kyoto, Japan.—p. 165.
*Kidney Factor in Phlorizin Diabetes. T. P. Nash, Jr., New York.—p. 171.
*Ammonia Content of Blood. T. P. Nash, Jr., and S. R. Benedict, New York.—p. 183.
*Determination of Uric Acid in Blood. S. R. Benedict, New York.—p. 187.
*Colorimetric Method for Determination of Sugars in Normal Human Urine. O. Folin and H. Berglund, Boston.—p. 209.
New Observations and Interpretations with Reference to Transportation, Retention and Excretion of Carbohydrates. O. Folin and H. Berglund, Boston.—p. 213.
Preparation of Inulin, with Special Reference to Artichoke Tubers as Source. J. J. Willaman, St. Paul.—p.275.
Unsaturated Fatty Acids of Liver Lecithin. P. A. Levene and H. S. Simms, New York.—p. 285.
Carbonic Acid and Bicarbonate in Urine. J. L. Gamble, Baltimore.—p. 295.

Plasma Analysis Versus Blood Analysis.—A method is described by Wu for the preparation of protein free filtrates of the corpuscles and the plasma suitable for all determinations included in the system of blood analysis of Folin and Wu. Sample analyses of the corpuscles and the plasma of normal human blood are given and the points of interest brought out are discussed. It is recommended that plasma analysis be substituted for whole blood analysis.

Biologic Test for Calcium Depositing Substances.—A diet is described by McCollum, et al., which is low in phosphate and in an undetermined organic substance and relatively high in calcium. This diet uniformly causes the bones of animals fed on it to be free from calcium as regards the epiphyseal cartilages and the metaphyses. These bones show an exaggerated type of florid rickets. The reappearance of the provisional zone of calcification after the addition of any substance to the rickets-producing diet (beginning healing of the rickets) constitutes a test for the calcium-depositing power of the substance (the so-called "line test"). Cod liver oil to the extent of 2 per cent. by weight of the diet causes the provisional zone of calcification to be reformed in these bones in five days (a positive "line test"); 0.4 per cent. of cod liver oil fails to cause the provisional zone of calcification to reappear in the bones; 1 per cent. of cod liver oil for five days does not cause so complete a calcium salt deposition as does 2 per cent. This test may be used to determine the ability of any agency to heal rickets.

Estimation of Blood Chlorids.—With Friend's method the protein of the plasma is precipitated by a neutral precipitant, made up to volume, filtered, and titrated directly against a standard silver nitrate solution. A chart is then consulted, avoiding all calculation. The reagents used are: aluminum cream, two hundredth-normal silver nitrate, and 5 per cent. solution of potassium chromate. The method is described in detail. Generally, such conditions as cardiac diseases, anemia and malignancy have shown high chlorid content, while fevers, diabetes and pneumonia have shown low figures.

Amino-Acids in Cow's Milk.—The amino-acids found in cow's milk by Hijikata were lysin, arginin and histidin. In addition the following substances were found: guanin and adenin in the purin base fraction; and cholin in the lysin fraction. Monoamino-acids, also, probably are present.

Kidney Factor in Phlorizin Diabetes.—Nash's experiments indicate that the kidneys, under the influence of phlorizin, do not acquire a specific sugar producing function. His results confirm an increased permeability of the renal epithelium.

Ammonia Content of Blood.—Facts are presented by Nash and Benedict which further substantiate their contention that ammonia is formed by the kidney.

Determination of Uric Acid in Blood.—Benedict describes new uric acid reagents based on the use of arsenic and phospho-arsenic-tungstic acids, and presents a method for uric acid determination in blood which can be applied directly to small quantities of the Folin-Wu blood filtrate.

Colorimetric Determination of Sugar in Urine.—In the process adopted by Folin and Berglund the preliminary treatment consists of shaking the urine with "Lloyd's alkaloidal reagent," a concentrated fullers' earth. This reagent removes most of the coloring matters together with the uric acid, creatin and the creatinin, yet, unlike all or most effective charcoals, does not take away the sugar. The colorimetric determination of the sugar in the filtrate is made in exactly the same manner as in the case of blood filtrates.

Journal of Immunology, Baltimore

March, 1922, 7, No. 2

*Bronchial Asthma and Allied Conditions. Clinical and Immunologic Observations. N. P. Larsen, R. Paddock and H. L. Alexander, New York.—p. 81.
Studies in Specific Hypersensitiveness. I. Diagnostic Cutaneous Reaction in Allergy. Comparison of Intradermal Method (Cooke) and Scratch Method (Schloss). A. Brown, New York.—p. 97.
Id. II. Comparison of Various Pollen Extracts with Reference to Their Therapeutic Value in Hay-Fever. A. Vander Veer, Jr., New York. p. 113.
Id. III. Constitutional Reactions: Dangers of Diagnostic Cutaneous Test and Therapeutic Injection of Allergens. R. A. Cooke, New York.—p. 119.
*Id. IV. New Etiologic Factors in Bronchial Asthma. R. A. Cooke, New York.—p. 147.
Id. V. Preparation of Fluid Extracts and Solutions for Use in Diagnosis and Treatment of Allergies: Collection of Pollens. A. F. Coca, New York.—p. 163.
Id. VI. Dermatitis Venenata. W. C. Spain, New York.—p. 179.
Id. VII. Age Incidence of Serum Disease and of Dermatitis Venenata as Compared with That of Natural Allergies. A. F. Coca, New York.—p. 193.
*Id. VIII. Relative Susceptibility of American Indian Race and White Race to Allergies and to Serum Disease. A. F. Coca, New York; O. Deibert and E. F. Menger, Lawrence, Kan.—p. 201.
Id. IX. Phenomenon of Hyposensitization (Clinically Lessened Sensitiveness of Allergy). R. A. Cooke, New York.—p. 219.

Vaccine Therapy of Asthma.—Of eleven asthma patients who were treated by autogenous vaccine eight were distinctly improved; there was no change in the remaining three. Two vaccines were used, each of a virulent *Staphylococcus aureus* strain, and it was found that apparent clinical improvement continued regardless of the nature of the organism predominant in the patient's sputum. An effort was made by Larsen and his associates to determine whether this effect was merely one of nonspecific protein. A typhoid-paratyphoid stock vaccine mixture was next given. Although slight continued improvement was noted in six of thirteen cases treated, two who had been doing well on the former regimen, became distinctly worse. No improvement was noted in the remaining four. After six weeks of this treatment, a stock staphylococcus vaccine was used, and seventeen cases were treated with this. Improvement was recorded in ten, questionable improvement in one, and none in the remaining six. The best results were obtained when vaccines were given in relatively small doses (100,000,000 of *Staphylococcus aureus*), at the outset, with an increment never larger than the original dose. Two interesting observations were made: This dose would frequently cause improvement for but three or four days, and was more effective when given twice a week. Likewise, when the dosage was increased too rapidly, relapse would frequently occur. In some cases in which improvement was not recorded, the asthmatic paroxysms disappeared, but the cough became worse. The difference in effect of the various types of vaccine is not impressive, except that in no instance when typhoid vaccine was used did the degree of improvement approximate that of the other organisms employed. The inference is made that, in asthma associated with signs of bronchial infection, vaccines, if given cautiously, are worth a trial. In some instances where other measures availed little, improvement began almost immediately after vaccine therapy was instituted. In others, the results were wholly disappointing. How these agents act has not been determined and further study is planned.

Inhalation of Dust Causes Asthma.—Cooke asserts that the group of substances absorbed by inhalation play a much more important part as specific causative factors of asthma than is generally considered to be the case by other investigators. The individual substances found to be of diagnostic importance in the 327 cases under consideration are given. Dust extract was important in 33 per cent. of the entire group. It is stated that diagnoses arrived at in accordance with this idea may be made with a greater degree of assurance on account of the fact that they are based on positive findings and not on negative findings, as is the case with the so-called bacterial asthma cases, which Cooke insists are to be more properly classified as undiagnosed. The new procedure of testing dust extracts has yielded valuable information in that it permits a study of the occupational or domiciliary environment of an asthmatic and establishes a positive diagnosis in certain cases not obtainable by any other means. Further, it has shown the presence of a substance in most house dusts that is in itself an important factor, but the nature and source of which is as yet unknown. The dust of hay, also, may act as a specific allergen and is not to be considered solely as a simple mechanical irritant.

Racial Allergy.—It has been found by Coca et al. that the American Indian is apparently much less frequently affected by the allergies than is the white race. An experimental study of the occurrence of serum disease in twenty-six volunteer full-blooded American Indians indicates that the Indian race is much less susceptible to that condition than is the white race. This similarity in the relative susceptibility of the two races to these two conditions suggests a similarity in the underlying mechanism of both of the conditions which, however, need not amount to a complete identity.

Laryngoscope, St. Louis

March, 1922, **32**, No. 3

Use of Radium to Effect an Atrophy of Pharyngeal Lymphoid Tissues. S. Withers, Denver.—p. 163.
*Histologic Control of Radium Treatment in Carcinoma of Larynx. J. G. Callison, New York.—p. 180.
Study of Rinné Test in One Hundred Cases. R. Sonnenschein, Chicago.—p. 184.
*Vertigo and Its Treatment Through Epinephrin. M. Vernet, Paris. —p. 205.
*External Nasal Deformities: Description of Operative Technic of New Method for Correction of Certain Types. J. D. Lewis, Minneapolis. —p. 214.
Rhinophyma; Report of Case. S. Israel, Houston, Texas.—p. 218.
Anterior Rhinitis Sicca: Its Origin and Cure. F. Hazlehurst, Baltimore.—p. 220.
*Grinding the Teeth a Symptom of Adenoid Growths. C. E. Benjamins, Utrecht, Holland.—p. 223.
Peritonsillar Abscess and Its Radical Treatment. W. K. Hughes, Melbourne, Australia.—p. 227.
Unsuspected Foreign Bodies in the Air Passages and Esophagus. C. E. Purcell, Paducah, Ky.—p. 229.

Radium Therapy of Cancer of Larynx.—Callison cites two cases of cancer of the larynx which were both particularly well situated for the application of radium, both being superficial and one backed up by a layer of cartilage. Both were treated efficiently according to the standards in vogue, and according to the judgment of the men administering the radium. In both cases, the treatments were without curative effect as judged by histologic standards. In both cases, the treatments had a greater effect on the supporting connective tissues than on the cancer cells themselves. This, in Callison's opinion, leaves open to serious question, the oft repeated statement, that radium and the roentgen rays have a selective action for new growths. It would seem to point to the conclusion that, in order to destroy a cancerous growth with these agents, it will be necessary to destroy the part concerned in the cancerous growth.

Epinephrin Treatment of Vertigo.—Vernet suggests the possibility of vertigo being of endocrine origin and claims to have obtained good results in treatment from the use of epinephrin given by mouth.

Intranasal Operation for Saddle Nose.—For the correction of saddle nose and tip irregularities Lewis makes an incision on the under surface of the tip of the nose parallel with the long axis of the nostrils converting the nasal tip into a hood. The implant or transplant used to straighten the nose is inserted into this pocket.

Grinding Teeth a Symptom of Adenoids.—Among 2,395 collected cases of adenoid growths, Benjamins states grinding the teeth was mentioned in 801 cases. Out of 1,791 personal cases Benjamins found: snoring, 1,085 times; impairment of hearing, 908 times; catarrh of the upper air passages, 873 times; grinding the teeth, 618 times; aprosexia, 566 times; enuresis, 462 times. Removal of the adenoids does not, however, always give relief from these symptoms.

Medical Record, New York

April 1, 1922, **101**, No. 13

Nonoperative Treatment of Ureteral Calculus. L. Buerger, New York. —p. 525.
Mortality from Biliary and Urinary Calculi in United States Registration Area. F. L. Hoffman, Newark, N. J.—p. 532.
Enzymes and Life: With Special Reference to Their Rôle in Cell. D. A. Laird, Iowa City.—p. 535.
Achylia Gastrica. M. Golob, New York.—p. 540.
Secretin, Defensive Factor Against Gastrointestinal Cancer. E. C. Prentiss, El Paso, Texas.—p. 542.
Specific Gravity and Acidity of Urine. M. W. Lyon, Jr., and V. B. Trager, South Bend, Ind.—p. 543.

April 8, 1922, **101**, No. 14

Cancer and Endocrine Disease. S. W. Little, Rochester, N. Y.—p. 567.
Exophthalmic Goiter: Problem of Recovery. I. Bram, Philadelphia. —p. 571.
Pyelitis: Etiology and Pathology, with Especial Reference to Internal Therapy. W. C. K. Berlin, Denver.—p. 575.
Medical Anthropology. E. Preble, New York.—p. 579.
Biochemic Explanation of Sulphur Molecule. P. R. Vessie, Gowanda, N. Y.—p. 586.
Successful Skin Graft with Slight Modification of Reverdin Method. F. Wehle, Buffalo.—p. 587.

New York Medical Journal

April 5, 1922, **115**, No. 7

Biology of Endocrine System. W. L. Brown, London, England.—p. 373.
Control of So-Called Hyperthyroidism by Digitalis and Water. G. W. Crile, Cleveland.—p. 376.
Thyroid. I. G. Cobb, London, England.—p. 377.
Psyche and Vegetative Nervous System with Special Reference to Some Endocrinopathies. S. E. Jeliffe, New York.—p. 382.
Thymus. L. Williams, London, England.—p. 388.
Diagnostic and Therapeutic Rôle of Endocrines in Functional Diseases. A. S. Blumgarten, New York.—p. 393.
Probable Function of Parathyroids. F. S. Hammett, Philadelphia. —p. 401.
Case of Parathyroid Insufficiency. A. F. Hurst, London, England. —p. 403.
Ovum as Internal Secretory Organ. A. L. McIlroy, London.—p. 404.
Anaphylaxis of Thymic Origin with Status Lymphaticus in Case of Cholecystitis with Jaundice. W. Neumann, Brooklyn.—p. 406.
Goiter. S. Pern, Melbourne, Australia.—p. 409.
Physiognomy and Endocrinology. P. Fridenberg, New York.—p. 415.
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Ohio State Medical Journal, Columbus

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Constitutional Nervous Symptoms. J. D. O'Brien, Canton.—p. 281.
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Rhode Island Medical Journal, Providence

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Southern Medical Journal, Birmingham

April, 1922, **15**, No. 4

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Syphilis of Nervous System. S. I. Schwab, St. Louis.—p. 254.
*Roentgen-Ray Diagnosis of Aortitis. T. Frazer and J. D. MacRae, Asheville, N. C.—p. 261.
*Temperature Variability in Certain Apparently Normal Children. F. C. Neff, Kansas City.—p. 268.
*Glossopyrosis. K. H. Beall, Fort Worth, Texas.—p. 272.
Prevalence of Endamebic Disease: Diagnosis and Treatment. G. C. Kilpatrick, Mobile, Ala.—p. 275.
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Spina Bifida with Associated Diverticulum of Bladder (Urachus) and Pyonephrosis. J. H. Smith, Memphis.—p. 302.

Postoperative Care in Surgical Conditions of Kidney. H. W. E. Walther, New Orleans.—p. 305.
Retrodisplacement of Uterus with Suggestions Regarding Proper Treatment. W. T. Black, Memphis.—p. 310.
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Conservative Treatment of Railway Injuries. W. H. Blake, Sheffield, Ala.—p. 318.
Tracheobronchial Diphtheria. H. Dupuy, New Orleans.—p. 321.
External Deformities of Nose and Their Correction by Intranasal Route. S. Israel, Houston, Texas.—p. 324.

Roentgen-Ray Diagnosis of Aortitis.—The signs sought for by Frazer and MacRae are: abnormal pulsations, palpable or visible, in the upper interspaces to the right of the sternum and in the suprasternal notch; upward displacement of the right subclavian artery; a thrill, usually systolic: a diastolic shock to the palpating hand; diminished resonance to the right of the sternum in the second interspace; a systolic murmur and an accentuated second aortic sound. The importance of general symptoms of aortitis, dyspnea, vertigo and cardiac distress or pain, is not sufficiently recognized. The physical signs may be slight and easily overlooked and unless a careful examination of the base of the heart be made, aortitis of the ascending arch frequently escapes detection. In diseases of the transverse portion there may be physical signs but not uncommonly suspicion is directed to the aorta on account of symptoms which suggest encroachment on other organs. Likewise, if the descending portion of the arch be involved severe pain or other pressure symptoms may locate the seat of disease. Not uncommonly, however, both subjective and objective evidence may be so slight that an aneurysm in this region may attain considerable size before its existence is suspected. The roentgen-ray examination may be either flouroscopic or radiographic, but when possible both should be used. Neither takes the place of the other.

Temperature Variability in Normal Children.—After the examination of 158 crying children Neff found the temperature elevated from 0.2 to 1 F. in 39 per cent. With eighty-eight children similarly examined but not crying, there was a like elevation of temperature in 10 per cent. Some of these were apprehensive or excited. In definitely underweight children the percentage showing variation after examination was somewhat higher, both in the crying and noncrying group. It would seem for purposes of accuracy that the temperature of the child should be taken if possible when no excitement has occurred.

Glossopyrosis.—Four cases are reported by Beall in which a constant burning of the tongue was the sole symptom and in which the physical examination was negative. In all of these cases there was an absence from the dietary of meat and whole milk. Two patients were lost sight of. The other two were relieved of the burning of the tongue by the addition of meat and whole milk to the diet.

Southwestern Medicine, Phoenix, Ariz.

March, 1922, **6**, No. 3

Organization and Functions of County Health Department. C. E. Waller, Santa Fe, N. M.—p. 79.
Importance of Early Interference in Acute Abdominal Injuries. J. W. Hannett, Gallup, N. M.—p. 84.
Stones in Upper Urinary Tract. K. D. Lynch, El Paso, Texas.—p. 87.
Relation of Tonsils to Systemic Infection. T. E. Presley, Roswell, N. M.—p. 92.
Tuberculosis and Influenza. C. M. Hendricks, El Paso, Texas.—p, 97.
Headache from Standpoint of Oculist. H. L. Brehmer, Albuquerque, N. M.—p. 100.
Some Newer Ideas on Treatment of Pellagra, with Report of Two Cases. M. K. Wylder, Albuquerque, N. M.—p. 103.
Dental Diagnosis. H. Raper, Albuquerque, N. M.—p. 105.
Case of Madura Foot. H. S. McGee, Douglas, Ariz.—p. 107.
Colic in Breast-Fed Infant. H. A. Stroup, Artesia, N. M.—p. 109.
Orientation. Essay on Harrison Narcotic Act. W. Smith, Phoenix.—p. 111.

U. S. Naval Medical Bulletin, Washington, D. C.

March, 1922, **16**, No. 3

Revaccination Against Smallpox: Immunity Following Cowpox Vaccination. E. Peterson, U. S. N.—p. 411.
Some Elements of Leadership. E. L. Munson, U. S. Army.—p. 433.
Hyperthyroidism. T. W. Reed, U. S. N.—p. 454.
History of Anesthesia in America. J. S. Taylor, U. S. N.—p. 461.
History of Blood Transfusion. W. M. Kerr, U. S. N.—p. 465.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 25, 1922, **1**, No. 3195

*Reproductive Organs in Relation to Mental Disorders. F. W. Mott.—p. 463.
*Etiology of Primary Cataract. H. Kirkpatrick.—p. 467.
*Pneumonia Neonatorum. F. J. Browne.—p. 469.
*Case of Dissecting Aneurysm of Aorta. H. Davy and M. Gates. p. 471.
Traumatic Arteriovenous Aneurysm. G. G. Farquhar.—p. 472.
Pneumothorax in a Boy Aged 7: Recovery. W. B. Martin and R. Knox.—p. 472.
Foreign Bodies in Gastro-Intestinal Tract in Acute Appendicitis. W. C. Allardice.—p. 473.
Nasal Diphtheria After Enucleation of Tonsils. B. S. Jones.—p. 474.
Sarcoma of Undescended (Abdominal) Testicle. G. H. Edington.—p. 475.
Bilharzia Hematobia in India. A. H. Harkness.—p. 475.
Rupture of Extensor Longus Pollicis Tendon. A. S. Mactavish.—p. 476.
Self-Retaining Tourniquet for Cranial Surgery. G. Robertson.—p. 476.
Ten Cases of Multiple Birth in Three Generations. S. G. Floyd.—p. 476.

Reproductive Organs and Mental Disorders.—A study made by Mott of relatives in the London County asylums by a card system, and by the method of systematic inquiry and construction of a large number of pedigrees, and the investigation of statistical data relating to the age of onset of insanity in the offspring of insane parents, afford to Mott's mind conclusive evidence of three facts in relation to the causation of mental disease: (1) The importance of a neuropathic and psychopathic heredity; (2) the special liability of the neuroses and psychoses to occur in adolescence and the involutive periods of both the male and female sexes, when the sexual function matures and wanes; (3) the influence of childbearing and lactation in women, acting as exciting causes. That the inborn predisposition is the most important fact in the development of neuroses and psychoses is also shown by the frequency with which these various psychoneuroses and psychoses occur at periods when normal physiologic changes occur in the body—for example, adolescence, when the sex instinct is aroused and matured, and the involution period, when it wanes. Again, in women, pregnancy, parturition and lactation are normal physiologic processes of the sex instinct, yet a number of cases of insanity in women designated puerperal mania or lactation mania occur as a result of a normal physiologic process. Even in cases of septic origin predisposition cannot be excluded. For many women have puerperal septicemia but do not become insane. Studies of ovaries and testes from such cases have disclosed a primary regressive atrophy. There is, generally speaking, a correspondence between the degree of regressive atrophy and the duration of the mental symptoms. In dementia praecox the atrophic process may result in all stages of failure of nuclear formative activity of the spermatogenic epithelium terminating in a complete disappearance, leaving only the Sertoli cells. There are also profound nuclear and cytoplasm changes in the interstitial hormone cells. This primary atrophy resembles the changes met with in the testes of cases of involutional melancholia, postadolescent dementia praecox and the terminal dementia and manic depressive insanity. Besides the failure of spermatogenesis, there is pigmentary degeneration of the interstitial cells in 25 per cent. of the cases of dementia praecox dying in adolescence, a sign of senile decay. This regressive atrophy was not found as a rule in general paralysis and other forms of organic brain disease. These investigations appear to show that in the male and female suffering with these various psychoses there is a failure of the vital formative impulse of reproduction, especially marked in cases presenting the clinical signs and symptoms of dementia praecox.

Etiology of Primary Cataract.—Kirkpatrick asserts that most of the morbid conditions which are associated with the development of primary cataract injuriously affect the action of the endocrine glands. Primary cataracts sometimes follow thyroid and parathyroid deficiencies, and are almost certainly then caused by a disturbance of endocrine function. Exposure to injurious heat and light rays and the existence of an uncorrected error of refraction are likely to determine the formation of a cataract in the eye of a person who is predisposed to a degenerative change in his lens fibers by a constitutional defect.

Pneumonia Neonatorum.—Among eighty cases of infantile death analyzed by Browne there were twenty-one, or 26.25 per cent., in which the cause of death was found to be pneumonia. Eleven of these occurred in premature and nine in full-time infants, the ages varying from 8 hours to 5 weeks. The very large proportion occurring in premature infants illustrates the increased liability to infection on the part of the premature infant. Five of the infants were syphilitic, another was probably so, while another had fracture of the supraorbital plates with extradural hemorrhage overlying them. One of the syphilitic cases showed an extradural hemorrhage in the spinal cord. In many of the cases, especially among the premature infants, there were atelectatic areas in the lungs, and in some cases these involved part of one lung and a large part of the other. It is, therefore, probable that atelectasis is a predisposing factor in the causation of pneumonia. Pneumonia is sometimes due to antenatal infection from premature rupture of the membranes, and the infant may be not only infected but also suffering from an advanced stage of pneumonia before its birth. "Acute hemorrhagic pneumonia of infants" forms a distinct clinical and pathologic entity which gives rise to sudden death in children who may be apparently previously healthy, either full-time or premature. It follows acute congestion of the lungs, the fragile vessels in the alveolar walls rupturing and flooding the alveoli and bronchi with blood. The sudden death is preceded by epitaxis and blanching of the skin, and the etiologic factor may be organismal or possibly of the nature of an immediate anaphylactic reaction. The importance of avoiding premature rupture of the membranes during labor, and of taking every precaution to safeguard the newly born infant against infection is emphasized.

Dissecting Aneurysm of Aorta.—In the case cited by Davy and Gates the patient complained of a sharp intense pain, which started from the nipple in front and passed straight to almost the same level of the spine behind. This pain prevented his keeping still for a minute. He was constantly up and down in bed, and in and out of it, trying by change of position to get ease. The pain in the region of the heart, the quick irregular pulse, together with the collapse and sweating, might have gone very well with angina. But the restlessness was altogether unlike it. The intense pain led to the diagnosis of dissecting aneurysm. Once before one of us had had an opportunity of observing the sudden formation of an aortic aneurysm. The roentgen ray showed an aneurysm arising near the arch of the aorta. The patient lived for nineteen days after the onset of the symptoms. Postmortem examination disclosed a definite dissecting aneurysm, about the size of a small orange, at the apex of the transverse arch of the aorta, caused by the rupture of the inner coat of the aorta at this situation, where it was definitely weakened by calcareous patches of atheroma. This dissecting aneurysm had ruptured into the left pleural cavity and so caused death from hemorrhage.

Lancet, London

April 1, 1922, **1**, No. 5144

Professional Secrecy. Lord Dawson.—p. 619.
Radiology and Physics. G. W. C. Kaye.—p. 622.
Two Series of Cases of Cataract. A. C. Roper.—p. 625.
*Danger of "Steel Scrubbers." A. Wylie.—p. 626.
*Alkalipenia: Acidosis as Observed in Children. A. D. Symons.—p. 627.
*Pernicious Anemia, Gastric Achylia and Enteritis. V. Bie.—p. 631.
Case of Bilateral Retro-Ocular Neuritis. H. W. Archer-Hall.—p. 633.
Successful Prostatectomy at Ninety Years. J. B. Macalpine.—p. 634.
*Case of Multiple Congenital Defect. K. M. Purves.—p. 634.
Hemangioma of Larynx. J. B. Cavenagh.—p. 635.

Steel "Scrubber" Fragments in Larynx.—Four cases of extraction of wire from larynx and pharynx are cited by Wylie. These small pieces of wire get embedded in the tonsils and the bases of the tongue, or even get into the arytenoids of the larynx and cause great suffering, and serious results might follow. This condition is the result of cooks cleaning the kitchen utensils with a steel scrubber, sold for that purpose. The "scrubber" consists of a quantity of steel shavings rolled into a ball, and in the process of time, some pieces of the steel get detached by the constant use of the scrubber, and being very small and almost colorless, escape the cook's notice and are served with the food.

Alkalipenia Not Acidosis.—The term acidosis, loosely used in the past, has been misapplied to all sorts of conditions, which, though they may constitute a tendency towards acidosis, are not in themselves a serious menace to the life of the individual as is true acidosis. This fact led Symons to adopt the more correct term alkalipenia which speaks for itself. The term acidosis should be restricted to those states in which there is almost an exhaustion of the body alkali reserve, as manifested by the onset of hyperpnea. Owing to the advent of a multitude of synthetic drugs, Symons says the treatment in modern medicine is tending to become too symptomatic. It would appear that in bacterial invasion and in certain metabolic disorders there is an underlying state of alkalipenia, and in correcting this by the administration of a substance which should be regarded as a natural constituent of the blood and tissue cells rather than a drug, we are neutralizing the acid toxin which is hampering and delaying the full force of the antibody mechanism.

Hydrochloric Acid in Pernicious Anemia.—Bie discusses the treatment of these conditions by introduction of hydrochloric acid into the stomach to restore normal conditions in the stomach and upper part of the small intestine. To get rid of the abnormal presence of bacteria in the intestine, Bie introduces once a day, on an empty stomach, by a thin sound, 6 mm. in diameter, a hydrochloric acid dilution of about the same strength and volume as the acid secreted after a meal. This periodic production of an acid reaction in the upper part of the small intestine might be expected to hinder, or to diminish, pathologic decomposition of the intestinal contents. The effect of this treatment in cases of anemia was very salutary.

Multiple Congenital Defect: Transposition of Viscera.—In Purves' case there was: Absence of the anus; complete transposition of viscera; the thoracic and abdominal contents were a mirror image of the normal arrangement. Persistence of the foramen ovale, which allowed the passage of a closed Spencer-Wells forceps from one auricle to the other. Great dilatation of the stomach. The pyloric sphincter was hypertrophied, this being apparently the cause of the dilatation. The lower end of the esophagus shared in the dilatation.

Bulletin de l'Académie de Médecine, Paris

March 7, 1922, **87**, No. 10

*Familial Osteomyodystrophia. F. Figueira.—p. 264.
*Rejuvenation Operations. G. Marinesco.—p. 266.
*Radiotherapy of Erythremia. H. Vaquez.—p. 276.
Radium Emanations in Thermal Waters. Loisel and Castelnau.—p. 279.
*Protection Against Roentgen Injury. R. Ferroux and C. Regaud.—p. 280.

Osteomyodystrophic Syndrome in Four Brothers.—Figueira describes a familial syndrome of deformity of bones, rigidity of muscles, infantilism and backward mental development.

Steinach's Operation.—Marinesco remarks that if Steinach had comprehended better the nonreversibility of biologic phenomena he would not have called his procedure "rejuvenation." Marinesco has applied it in three men of 56, 59 and 60 with parkinsonian or tabetic symptoms, and a transient sexual erethism followed. In two months the senile condition was the same as before the operation. "Growth and differentiation are the essential conditions of life. When an organism has reached the highest point of differentiation of which it is capable, it may remain stationary for a time, but decadence is then inevitable. There is never any going back; senility is an inexorable necessity of all living cells."

Roentgen-Ray Treatment of Erythremia.—Vaquez' experience confirms Béclère's recent announcement that roentgen therapy is the most effectual known to date for erythremia. He reports two cases, saying that they, with other experiences, teach that it is useless and may be dangerous to expose the spleen to the rays, and that it is better to refrain from too extensive exposures of the skeleton. He advises not to treat all the epiphyses at once but wait for the results of the first irradiations before continuing the series. The effect may not become apparent for six weeks to two months, and then the change for the better may be sudden. Time alone will show whether the effect is permanent. More probably, he thinks, the disease is merely held in check—like leukemia—by the roentgen rays.

Protecting Walls for Roentgen Laboratories.—Ferroux and Regaud leave a narrow space between the bricks, forming a double wall, and fill this space with a lead bearing ore. They use a compound galena, finely pulverized, containing from 30 to 32 per cent. lead by weight besides considerable amounts of other metals. The space of 3.5 cm. between the two layers of bricks, 11 cm. thick, is filled with this pulverized mineral. The expense is trifling in comparison to that of sheet lead or bricks made with lead or baryta admixture. The communication issues from the university radium institute.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 24, 1922, **46**, No. 7

- *Vomiting of the Tuberculous. P. Merklen and Dubois-Roquebert.—p. 349.
- *Superficial Thrombophlebitis. N. Fiessinger and P. Mathieu.—p. 352.
- *Cure of Hemophilia. N. Fiessinger and Barbillion.—p. 354.
- *Meningococcus Infection. A. Lemierre and R. Piédelièvre.—p. 360.
- Fate with Tuberculous Cavities. Crouzon et al.—p. 368.
- *Diphtheria in Rhine Province. G. Audouard.—p. 370.
- *Tyrosin in Tuberculous Sputum. A. Pissavy and R. Monceaux.—p. 376.

Calcium Chlorid in Treatment of Vomiting in the Tuberculous.—Merklen reports four cases in which the coughing brought on vomiting, all cured by a single intravenous injection of 2 c.c. of a 50 per cent. solution of calcium chlorid. This cough vomiting had been tormenting the patients for from four to twenty days. In a fifth case there had been for five months almost daily vomiting after meals, and this subsided in the same way. In some other cases the tendency to vomit was much reduced although not entirely banished even by two injections of the chlorid. The glass in the ampules must be of a kind that will not give up sodium to the fluid.

Phlebitis in Chest Wall.—Three superposable cases are described of superficial thrombophlebitis in the front wall of the chest and below.

Cure of Hemophilia.—In the case reported by Fiessinger the boy was under observation for ten years. The hemophilia was manifested more by ecchymoses and hematomas than by hemorrhages, after the age of 4 or 5. Coagulation took twenty-six minutes in 1912, and eighteen minutes in 1919. Then a series of transfusions of 20 c.c. of the mother's citrated serum was given, at weekly intervals, and the coagulation time dropped to ten minutes and there have been no disturbances since. The last hematoma was a huge one in the floor of the mouth; swallowing was impossible and the jaws were spread apart by the hematoma, the swelling extending through the suprahyoid and submaxillary region to the region of the angle of the jaw. The hematoma was punctured, ice applied to the neck, and the mother's serum injected, plus peptone protein therapy. The hematoma lasted for over a month but then subsided, the mucous membrane casting off a superficial gangrenous patch.

Meningococcus Septicemia.—The septicemia, with intermittent fever, had been dragging along for ten and a half months before the rapidly fatal meningitis developed in the man of 44. The apyretic intervals during the septicemia had ranged from four to eleven days or more.

Diphtheria in the Rhine Provinces.—Audouard was with the French army of occupation in the Palatinate, and reviews his experience with military and civilian cases of diphtheria. He places great reliance on a jet of superheated air applied to the throat of convalescents and healthy carriers for five or ten minutes twice a day, and at night, insufflation of pulverized antitoxin, using an elbow tube (special tube for each patient), insufflating the powder into the nasal fossae and rhinopharynx.

Tyrosin in Tuberculous Sputum.—Tests for tyrosin were constantly positive in the 183 cases tested, with tubercle bacilli in the sputum, and in a few others, while negative findings were constant in eighteen patients who seemed free from tuberculosis, and in several who had recovered from the disease.

Gynécologie et Obstétrique, Paris

February, 1922, **5**, No. 2

- *Galactoceles. E. Grynfeltt and C. Tzélépoglou.—p. 105. Cont'd.
- Conditions for Proliferation of Uterine Glands. Szymanowicz.—p. 129.
- *Autoplastic Amputation of Uterine Cervix. H. Hartmann.—p. 142.

Galactoceles.—In the majority of cases the galactocele is a cystic form of fibro-adenoma of the breast, but in some cases it is secondary to trauma or an infectious process. Grynfeltt and Tzélépoglou have been able to find records of only seventy-three cases in the literature, and chemical analysis of the milk in the cyst has been reported only in two instances. They describe their research on a case personally observed, evidently an encysted extravasation of milk in the interstitial tissue.

Autoplastic Amputation of the Cervix.—Hartmann declares that it is possible to amputate the uterine cervix in case of metritis without interfering with childbearing later. This he realizes by covering the stump with the pedunculated flap of vaginal mucosa, leaving nothing in the flap but the mucosa. His illustrations show the technic. In his experience healing has been by first intention, leaving a smooth and supple cervix. He seldom does this operation now as he prefers cauterizing with the Filhos caustic as a simpler means of accomplishing the same purpose.

Journal de Chirurgie, Paris

March, 1922, **19**, No. 3

- *Reconstruction of Thumb. G. Moutier.—p. 225.
- *Abscess in Abdominal Wall. Boppe.—p. 245.

Reconstruction of Thumb.—Moutier's ten illustrations show the wide range of operations for this purpose. When the patient requires skilful use of his thumb, transplantation of a finger or big toe is usually preferable, but when only strength is necessary, a useful rudimentary thumb can be made by cutting down around the first metacarpal bone. The age should also be taken into account, the transplantation of the big toe being comparatively easy in children.

Abscess in Abdominal Wall.—Boppe includes hematomas as well as abscesses in this study of the lesions of the anterior abdominal wall. The hematomas are usually resorbed spontaneously in eight or ten days, but sometimes they become encysted. Still more often they become infected, generally from some mild general infection, or an abscess develops. In three such cases the cure was soon complete after evacuation of the abscess although in one case the pus had invaded the prevesical space. Among the typical cases cited is Grand's from The Journal in 1913. A woody phlegmon may develop in connection with some abdominal operation, but the interval may be several months, and malignant disease may be assumed. This blunder was made in the cases cited, almost without exception. The hardness, the adhesion to the skin, the vague outline, the lack of pain and fever seemed to indicate a sarcoma or metastasis in the skin of some visceral cancer.

Journal de Médecine de Bordeaux

March 10, 1922, **94**, No. 5

- Treatment of Parrot's Disease with Mercury and Neo-Arsphenamin Injections. Dupérié and Encontre.—p. 139.
- Optic Diphtheric Neuritis. C. Fromaget.—p. 142.
- Case of Secondary Hemorrhage After Pyelotomy. R. Darget.—p. 142.
- Spa Treatment of Angiospasm. Courbin.—p. 144.
- Enormous Lipoma of the Back. G. Rouhet.—p. 146.

Médecine, Paris

February, 1922, **3**, No. 5

- *French Neurology in 1921. Laignel-Lavastine.—p. 325.
- Lack of Correspondence Between Meningeal Syndromes and Findings in the Cerebrospinal Fluid. E. de Massary.—p. 336.
- Cerebrospinal Fluid in General Paresis. Cestan and Riser.—p. 346.
- Nervous Symptoms from Anomalies in Fifth Lumbar Vertebra. P. Sainton.—p. 348.
- Psychanalysis in France. Hesnard.—p. 353.
- *Familial Hyperexcitability of Brain. F. Rose.—p. 359.
- *The New Conceptions of Epilepsy. J. Tinel.—p. 366.
- Estimation of Chronaxia. G. Bourguignon.—p. 375.

*Neuropsychiatric Syndrome with High Blood Pressure. R. Charpentier. —p. 382.
Electroradiology in Treatment of Neuralgia. Laquerrière and Delherm. —p. 387.
The Psychiatric Hospitals and the Asylums. M. Mignard.—p. 393.
Beware of States of Depression in Mental Disease. Courbon.—p. 395.

Neurology in 1921.—Laignel-Lavastine reviews the field of neurology in France alone. It was dominated during the year by epidemic neuraxitis, he says, but cases of this kind are growing rare. The parkinsonian relics of it, however, are evident on all sides. The last two years have produced an actual legion of parkinsonians. The most useful treatment seems to be with subcutaneous injection of scopolamin. This might be given in the morning, with phenobarbital at night to combat the insomnia. Physical measures should be ordered freely; they occupy the patient and keep up hope, while they may have a favorable sedative action.

Familial Hyperexcitability of the Brain.—In a family described, three members had symptoms indicating hyperexcitability of the brain in early life, but after reaching the age of 6, 9 and 12 years the tendency seemed to be outgrown and there were no further convulsions. A fourth member of the family had a brief period of convulsions while teething and again at the age of 18 months, during an infectious process. The convulsions then recurred regularly, and actual epilepsy became installed. Thyroid treatment has been used in epilepsy with success by Claude, and thyroid treatment has been known to promote the repair of nerves after they have been severed. Instances are known of epileptiform seizures appearing for the first time at the menopause. There are a number of such data which suggest an endocrine element in convulsions and epilepsy. This may induce vascular spasms in the brain from hypertonia of the sympathetic system.

Treatment of Epilepsy.—Tinel is inclined to regard epilepsy as the result of an inhibiting reaction in the cortex to vasomotor ischemia from some reflex action or spasmogenic toxic process.

Intermittent Nervous-Mental Disturbances in the Course of High Blood Pressure.—Charpentier describes intermittent periods of depression, anxiety and restlessness which he has observed in certain subjects with high blood pressure, from various causes, and a more or less pronounced tendency to hemiplegia. During the intervals between these neuropsychiatric attacks, the patients are calm and placid, with no trend to melancholia or restlessness. Besides the treatment of the hypertension with tepid baths, douches, laudanum and other measures to soothe the anxious preoccupation, the presence of the physician or of some other person inspiring confidence helps to reassure and calm the patient, and thus to shorten the attack and ward off dangerous reactions. His patients were all over 50, and both sexes were represented about equally.

Paris Médical

March 11, 1922, **12**, No. 10

*Indications for Spinal Anesthesia. A. Gosset and R. Monod.—p. 201.
*Action of Anesthetics on Nerve Centers. J. Camus.—p. 205.
Technic for Spinal Anesthesia. B. Desplas.—p. 209.
Spinal Anesthesia with Surgery of Stomach. R. Bloch.—p. 212.
*Accidents of Spinal Anesthesia. J. Hertz.—p. 214.

Indications for Spinal Anesthesia.—Gosset and Monod remark that at the Salpêtrière during 1921 ether was used at only 300 operations; nerve blocking in 71; chloroform in 3 and spinal anesthesia in 442 cases. Spinal anesthesia is reliable for operations below the thorax, and they have never had a fatality in their more than 2,000 applications of it. The headache with it is sometimes annoying and persisting; syphilitics seem particularly liable to this. It is particularly advantageous for the elderly but they reject it for tuberculous subjects and where there is already a low blood pressure and temperature. The anesthesia proved a failure in two cases of acute peritonitis, and they warn further against superposed ether. They had two fatalities where ether was given to supplement the defective anesthesia; it is better to block the nerve in the region. In one case of cancer of the rectum, the six different operations required were all done under spinal anesthesia in the course of two months.

Action of Stovain and Procain on the Bulbar Centers.—Camus gives the tracings of several of the twenty-six dogs injected intraspinally close to the medulla oblongata with stovain or procain. The respiration center feels the effect first and respiration is arrested, and there is no reaction to stimuli applied to the central end of the pneumogastric. When the dose of the drug is just below the lethal amount, the respiratory centers suffer from it, and any shock or sudden change of position brings a fatal syncope. When this occurs, an intraspinal injection of caffein may effectually combat the syncope. Even when the respiration was definitely arrested, the heart kept on beating, and by keeping up artificial respiration for an hour or more, the toxic substance gets eliminated and an actual resurrection follows. This can be seen on some of his charts; after an hour and 5 minutes of total arrest of the respiration it began again spontaneously, very faint at first but soon increasing. He uses an electric device for the artificial respiration.

Accidents with Spinal Anesthesia.—Hertz injects 0.25 c.c. of caffein subcutaneously in prophylaxis, after the injection of the anesthetic, and at the slightest sign of mydriasis, pallor or relaxation of the sphincters, repeats the injection of caffein. If the symptoms are grave, he injects the caffein directly into the spinal canal, and lowers the head. Artificial respiration keeps dogs alive during the syncope until the toxic drug is eliminated. This may require an hour or two, but then the dog comes to life again. All who have reported meningeal accidents have mentioned their actual mildness, in marked contrast to their apparent gravity, ranging from a simple meningeal reaction to an aseptic puriform meningitis. Under an evacuating puncture and the ordinary measures, the cure was complete in a few days. Saline infusion combats the symptoms from hypotension, while hypertension yields to lumbar puncture. The pressure in both blood and fluid should be recorded.

Presse Médicale, Paris

March 11, 1922, **30**, No. 20

*Autoserotherapy. M. Roch and P. Gautier.—p. 209.
*Misleading Auscultation Findings in Lung. P. Ameuille.—p. 210.
Present Status of Vaccination Against Typhoid. L. Cheinisse.—p. 214.

Hemoclasis from Autoserotherapy.—Roch and Gautier relate that parenteral injection of ascitic fluid induces a *choc hémoclasique*, and the same to a lesser extent is observed after injection of pleural effusions. In some cases described, the leukocytes dropped from 13,330 to 9,400 or 11,780 to 8,060 in fifteen minutes. The facts observed suggest that autoserotherapy acts as a form of protein therapy, and that it is certainly the simplest and the most harmless form, while the hemoclasis is an index of its effect.

Auscultation of the Tuberculous Lung.—Ameuille analyzes the reasons for the difference in the auscultation findings from day to day with a constant lesion. He gives roentgenograms of a large number of puzzling cases, with their interpretation as deduced retrospectively from the outcome of the cases.

March 18, 1922, **30**, No. 22

*Provisions for the Tuberculous in France. L. Bernard and G. Poix. —p. 233.
*Influence of Liver on Globulin in Blood. W. Filinski.—p. 236.
Recent Literature on Rejuvenation. M. Nathan.—p. 237.

Provision for the Tuberculous in France.—The main points in this long article were summarized recently on page 1235, in Lereboullet's review of the present status of tuberculosis.

Diagnostic Import of Globulin Content of the Blood.—Filinski writes from the Warsaw University Medical Clinic to explain that a relative rise in the globulin content of the blood serum may be a sign of insufficiency of the liver. In twenty-seven cases investigated there was no connection with cachexia or cancer, while the ratio of the globulin to the serin was always high in the twelve jaundice and cirrhosis cases.

Progrès Médical, Paris

Feb. 18, 1922, **37**, No. 7

*Autoserotherapy in the Treatment of Cancer. Chauvin and Bec.—p. 73.
*Pathology of the Pineal Gland in Children. Lereboullet.—p. 75.

Autoserotherapy in Treatment of Cancer.—Chauvin and Bec report two cases of cancer of the uterine cervix, and a case of tumor on the cheek of a man of 60 involving the glands. All were inoperable, but a course of protein therapy improved the general condition to such an extent as to be a great gain. The protein therapy was given in the form of reinjection of the serum from 20 c.c. of the patient's own blood. Gaudier has reported reduction of the size of the tumor in twenty-four cases of inoperable cancer given this autoserotherapy, subsidence of the pain and great subjective relief. He always gave as many as twenty injections, usually subcutaneous. Intravenous injection induced too much of a shock.

Pathology of the Pineal Gland in Children.—Lereboullet reports two cases of tumor of the pineal gland, confirmed by necropsy in one case. Both were in boys of 12 or 13, and after a period of exceptionally rapid growth to about the age of 9, the growth stopped, but the genital organs, voice and hair rapidly developed to correspond to adult age. One boy has to shave twice a week to keep from having a beard. After the age of 9, headache and convulsions were severe and frequent, but vision was intact and there was no somnolency. Under roentgen-ray treatment and phenobarbital, the progress of the affection was arrested; the tendency to convulsions seems to have subsided and the boy leads his classes. Certain features of the case suggest possible inherited syphilis. In the other case, besides headache and vomiting, diplopia and somnolency were pronounced, and there was restriction of the upward movement of the eyeballs. This *paralysie verticale du regard* is an instructive sign of a focus in the anterior corpora quadrigemina. In this case the clinical picture ran its fatal course in eight months. The tumor was a neuro-epithelioma glioma completely obliterating the third ventricle. He remarks in conclusion that there are about twelve such cases on record but in few has necropsy been possible. Radiotherapy, decompressive trephining and pineal gland extract seem to be the only means available for treatment. The chances for success are greater, naturally, the earlier they can be applied, possibly when only the precocious development has attracted attention.

Schweizerische medizinische Wochenschrift, Basel

March 2, 1922, **52**, No. 9

*Gynecology and Disease Elsewhere. M. Walthard.—p. 217.
Present Status of the Vitamin Question. E. Rothlin.—p. 219. Conc'n.
*Behavior of Serum Proteins After Injection of Serum. Berger.—p. 225.
Mechanism of Rupture of Uterus and Vagina. Schnyder.—p. 228.
*Medical Impressions of America. K. Schlaepfer.—p. 230. Cont'd.

Gynecology and General Diseases.—Walthard declares that the old conception that derangement of the genital organs was responsible for hysteria and other general vague morbid conditions has been completely abandoned. The reverse now is accepted, namely, that the sound genital organs are liable to be extensively influenced by disease or functional disturbance in any of the other organs. "A polyfunction of the ovaries will subside to normal when the extragenital irritating cause is removed." The ripening ovum is like a seismometer; it registers any commotion anywhere in the body. Lead poisoning, for example, whips up the ovaries at first and then they become exhausted, so that the intervals between the menses are shortened at first, and then comes amenorrhea.

Behavior of Serum Proteins After Parenteral Injections.—Berger discusses the mechanism of the increase in refracting power of the animal's serum after the parenteral injection. The viscosity also increases and surpasses the rise in refraction, but then the viscosity drops. These changes are manifest even weeks and months afterward, as he explains.

Medical Impressions of America.—Schlaepfer describes wistfully the hospitals and medical schools of America, saying that the medical students have conveniences and advantages of different kinds that seem like *zukunftsmusik* to the European, and nothing about the management of the hospitals can be applied to European conditions, as he explains. He is particularly interested in surgery of the brain, and he says that his high anticipations were more than fulfilled, and gives a review of the work and teachings of the leaders in this line, Cushing, Frazier, Weed and McKibben, Dandy and Heuer, and others.

Policlinico, Rome

Feb. 1, 1922, **29**, Medical Section No. 2

*Pseudosclerosis. G. Saiz.—p. 63.
*Chronic Epidemic Encephalitis. S. d'Antona and R. Vegni.—p. 81.
The Reflexes with Lesions of Extrapyramidal Motor System. G. Calligaris.—p. 97.
*Cervical Ribs. G. Dagnini.—p. 109.

Pseudosclerosis.—Saiz gives a colored plate of the findings in a case of pseudosclerosis in a woman of 32 with amenorrhea, cirrhosis of the liver, and alimentary levulosuria. Necropsy revealed primary proliferation of neuroglia, most pronounced in the striate body but evident in other parts of the brain. The clinical picture was an extreme instance of the disease, which he accepts as forming a single nosologic entity with Wilson's disease.

Chronic Epidemic Encephalitis.—D'Antona and Vegni found at necropsy of the man of 54, who had been presenting symptoms of epidemic encephalitis for thirteen months, the same findings as in acute epidemic encephalitis, except that the proliferative phenomena were less pronounced and the degenerative were graver. The severest changes were in the globus pallidus, locus niger and the dentate nucleus. The basophile bodies in the globus pallidus responded negatively to tests for starch and calcium. Vogt, Goria and Walbaum have reported finding similar concretions in the globus pallidus in a few other cases of disease resembling paralysis agitans more or less closely.

Cervical Ribs.—In the case described by Dagnini the young man's bilateral cervical ribs had caused not only neuralgia in the right arm but had reduced the electric responses and temperature in the muscles innervated by the eighth cervical and first dorsal nerve roots, while the right cheek was abnormally hot. The head had to be held at a slight angle to prevent pain. The cervical ribs had caused no disturbance till the age of 18; then the carrying of a heavy weight on the shoulder for a long distance was followed by the sudden onset of the pains, and fatigue and vasomotor derangement soon complicated the neuralgia.

Riforma Medica, Naples

Feb. 6, 1922, **38**, No. 6

Carcinoma of the Larynx. D. Giordano.—p. 121.
*Transmission of Heart Beat to Spine. A. Cantani.—p. 124.
*Nitrogen Metabolism in the Tuberculous. A. De Martini.—p. 125.
*Gastric Ulcer. P. Brisotto.—p. 127.
*Occult Rheumatism. G. Soffè.—p. 129.

Diagnosis of Aneurysm of Descending Aorta.—Cantani asks others to watch for the transmission to the spine of the double heart beat which he found in two cases of aneurysm of the descending aorta, and never in others. In his cases the aneurysms were latent at the time, but auscultation of the spine revealed this differential sign, and the course of the cases explained it. The double beat was heard loudest at the first lumbar vertebra, and it declined in intensity toward the lesion.

The Metabolism in the Tuberculous.—Martini gives the nitrogen metabolism findings in 4 healthy subjects, and in 6 tuberculous in nitrogen balance, and in 6 with upset balance. The findings in the first two groups were within normal range.

Pathogenesis of Gastric Ulcer.—Brisotto analyzes the various theories as to the origin of gastric ulcer, citing experimental research on dogs and other evidence which testifies to the importance of the sympathetic nervous system as a factor in the ulcer process.

Occult Acute Rheumatism.—Sofrè says that when slight fever follows a sore throat there are liable to be occasional vague fleeting pains and twinges at different points in muscles and points, but all so insignificant that the subject does not heed them. The fever comes on at night, but is very variable, as is also the albumin content of the urine, which fluctuates rapidly, and likewise the physical signs in the respiratory apparatus. The convincing proof that the trouble is an occult acute rheumatism is afforded by the prompt cure under salicylate treatment.

Rivista Critica di Clinica Medica, Florence

Jan. 15, 1922, **23**, No. 2

*Benzoin Reaction in Spinal Fluid. A. Terzani.—p. 13. Begun in No. 1, p. 1.
Case of Rigid Hydropneumothorax. E. Riccioli.—p. 18.

Benzoin Reaction in Spinal Fluid.—Terzani extols the ease and simplicity of the colloidal benzoin test of the lumbar puncture fluid, introduced by Guillain and his co-workers. It may usefully supplement the ordinary tests, and seems to be especially instructive in general paresis and tabes, particularly when the findings are negative.

Feb. 5, 1922, **23**, No. 4

*Rat Bite Fever. F. D'Arbela.—p. 37. Begun No. 3, p. 25.
*Vascular Hypertension. Becchini.—p. 41. Conc'n.

Rat Bite Fever.—D'Arbela discusses the connection between rat bite fever and other spirochetoses, as studied in a case in a man of 34. He had been bitten in the finger by a rat he had caught in his hand, and the typical waves of the rat bite fever had kept returning for two months. Then the fever and the swelling of the glands subsided permanently after a second injection of neo-arsphenamin.

Vascular Hypertension.—Becchini's long study of the origin and pathogenesis of vascular hypertension was begun in the preceding volume of the *Rivista*. When the hypertension is due to spasm of the vessels, measures to combat this include repose, physical and mental, a light diet, air baths and exercise, with hydrotherapy. If the hypertension has become chronic, emancipated from its cause, the aim of treatment must be to counteract the effects on the system. When the spasms are maintained by excess of acid in the blood, the best means to combat this is with Trunecek's solution of alkaline salts. In persons between 30 and 40, five or ten injections of from 2 to 5 c.c. of this Trunecek serum always banished the hypertension more or less completely in his experience. In the elderly, larger doses were required. A predisposition to vascular spasm usually persists, and may require a small dose occasionally. When the hypertension is due to an excessive amount of blood, treatment should aim to reduce the overabundant diet, substituting green vegetables and potatoes for proteins and alcohol. This supplies the needed alkali, supplemented by mineral waters, measures to combat the plethora, plus the Trunecek serum, and withdrawal of small amounts of blood if further measures are needed. The disturbances from arterial hypertension are mainly the hard small pulse, nervousness, ready fatigue, and symptoms from the local vascular spasm as it affects the brain, chest, abdomen or the periphery, shutting off the blood from the part. The subjective symptoms are excitability and fatigue. The capillaries normally are never more than a third full, but with an excessive total amount of blood they fill up and there is hypertension, and the consequences of this may be serious. The plethora may be of the polycythemia or erythremia type, or from habitual drinking of large amounts of beer or wine. The hypertension causes pallor and is usually mistaken for anemia. This blunder could be avoided by noting the contrast between the strong full pulse in the trunk arteries and the small hard pulse in the smaller ones. The primal cause is a modification of the blood plasm like that induced by alcohol before the alcohol damage has reached the stage of anatomic changes in liver or kidneys. The condition might be called precirrhosis or prenephritis.

Archivos Españoles de Pediatría, Madrid

November, 1921, **5**, No. 11

*Diphtheria and Serotherapy. Ramón Gómez Ferrer.—p. 641.
Protein Therapy. E. Nogueras Coronas.—p. 651.

Diphtheria.—Gómez Ferrer queries why there is still such a high mortality from diphtheria, some recently published figures having shown throughout Spain 2,917 deaths from diphtheria in 1905 and 3,009 in 1919.

Brazil-Medico, Rio de Janeiro

Jan. 14, 1922, **36**, No. 2

Helminths of Brazil. XIV. L. Travassos.—p. 17.
*Fruits in Diet of Diabetics. A. da Matta.—p. 20.
Recent French Literature on Gastro-Intestinal Pathology. E. Antoine.—p. 22.

Fruits in the Diet of the Diabetic.—Da Matta quotes from recent writers endorsing different fruits for an antidiabetes diet, and deplores that none of their lists contain the avocado or true alligator pear and the Brazil-nut which are so abundant in Brazil. A previous article by him on these fruits was summarized recently in these columns, April 1, 1922, p. 1009.

March 4, 1922, **1**, No. 9

*Effects of Experimental Vagotomy. M. Ozorio de Almeida.—p. 105.
Hog Cholera and Typhoid Fever. H. Marques Lisboa.—p. 109.

Experimental Vagotomy.—In Ozorio de Almeida's experiments, guinea-pigs survived for several hours the physiologic section of both vagus nerves, by blocking them with an anesthetic, when the irritation from the procedure was reduced to the minimum, as by the technic described. Other animals treated by the same technic, only using physiologic saline instead of the anesthetic, died after about the same period of survival. This confirms Ozorio's assertion that it is the irritation, not the anesthetic, that is responsible for the fatal outcome.

Revista de la Asoc. Méd. Argentina, Buenos Aires

November, 1921, **34**, No. 205

Nodular Lesion of Liver. J. Llambias.—p. 1085.
Comparative Importance of Medulla and Cortex of Suprarenals. B. A. Houssay and J. T. Lewis.—p. 1092.
Suprarenals and Pancreatic Diabetes. Idem.—p. 1099.
Suprarenals and Morphin Intoxication. J. T. Lewis.—p. 1104.
Influence of Pituitary on Growth. B. A. Houssay and E. Hug.—p. 1107.
Research on Vitamin B. M. Acuña and J. P. Garrahan.—p. 1114.
Test for Chlorin in the Tissues. O. M. Pico and J. J. Murtagh.—p. 1124.
*The Pituitary and Carbohydrate Metabolism. B. A. Houssay et al.—p. 1128.
*Quinidin in Auricular Fibrillation. F. Arrillaga, J. Guglielmetti and C. Waldorp.—p. 1130.
Stain for Syphilis Spirochetes. J. J. Puente.—p. 1134.
*Snake Poison. B. A. Houssay, Otero. Negrete and Mazzocco.—p. 1137.
*Hydrogen Ions in Saliva. J. V. Lafarga.—p. 1152.
Urine and Blood in Dogs After Removal of Pituitary. B. A. Houssay and P. Mazzocco.—p. 1165.
*Icterohemorrhagic Spirochetosis. Grapiolo, Fossati and Palazzo.—p. 1171.
Immature Leukoblasts. L. I. Aquino.—p. 1190.
*Anaphylaxis and Serotherapy. J. W. Howard.—p. 1195.
*Cure of Case of Heart Block. Bullrich.—p. 1207.
Technic for Roentgen Ray Treatment of Cancer. Saralegui.—p. 1213.
Experiences with Physiotherapy. J. A. Saralegui.—p. 1221.
*Tolerance of Eye for Radium. E. Jonquieres.—p. 1247.
*Radiotherapy of Sarcoma. R. Espinola.—p. 1251.
*Operation on Lacrimal Cyst. A. Noceti and R. Enriquez.—p. 1259.
Bilateral Iridocyclitis in Epidemic Meningitis. A. Natale.—p. 1269.
Mikulicz Syndrome in Leukemia. P. Satanowsky.—p. 1275.

The Pituitary and Carbohydrate Metabolism.—This report of research on dogs from 1908 to date states that no difference in the metabolism of carbohydrates could be detected between normal dogs and those that had had the pituitary removed. Dogs with adiposogenital dystrophia seemed to display a greater tolerance for sugar for a time.

Quinidin in Experimental Auricular Fibrillation.—The fibrillation was produced in eighteen dogs with the induced current, and then they were treated with quinin or quinidin, or the drug was administered to ward off the fibrillation. It proved effectual in this in the dose of 2 cg. of quinidin per kilogram of body weight. Stimulation then up to 1,000 units was incapable of inducing fibrillation.

Action of Snake Venom on the Blood.—The blood of dogs after intravenous injection of snake poison shows the effects of intense shock, as is described in detail.

Hydrogen Ions in Saliva.—Lafarga discusses this subject from the standpoint of decay of the teeth.

Icterohemorrhagic Jaundice.—The spirochetes responsible for this disease were cultivated from the liver of the girl of 17 who had died in less than a month from the onset of the jaundice and other symptoms. It is the first case to be published in Argentina.

Anaphylaxis and Serotherapy.—Howard concludes from study of 200 cases of phenomena following injection of serums, that this anaphylaxis is closely allied to immunity. Hence it is possible to induce immunity to anaphylaxis. Less disturbances follow beef serum than horse serum. He adds that we must not confuse the symptoms from protein intoxication and supersaturation with the anaphylaxis phenomena. The serum symptoms are all of the type of reactions of the involuntary nervous system. It is possible to give systematic series of injections of serum by observing certain precautions, keeping the urine under control by repeated analysis, and supervising the blood pressure. His tuberculous patients were given the serum injections for five days and then the releasing injection. This was followed by symptoms of serum sickness in all but 2 per cent. of the horse serum cases. This "sickness" lasted from two to eight days, but then, by waiting for three or four weeks after the subsidence of all serum symptoms, the serotherapy could be resumed without further serum sickness, giving only one injection a week, or fortnight, and beginning with a small tentative dose, according to Besredka's method. Fully 74 per cent. of his patients bore this serum treatment with these precautions and ample intervals without further serum sickness. The blood pressure and analysis of the urine warn when it is time to pause. In all but 12 per cent. he was able thus to continue the serotherapy; in another group (14 per cent.) the desired result was accomplished by redoubling the precautions. He theorizes that possibly the smaller proportion of serum sickness cases with beef serum in comparison to horse serum may have some connection with the fact that more beef is consumed per capita in Argentina than in other countries; this suggests a possible acquired tolerance.

Cure of a Case of Heart Block.—The pulse of the man of 35 was 28, this bradycardia having been noted for eight or nine years. Under mercurial treatment the heart block subsided completely, after a preliminary aggravation. There was nothing to suggest syphilis.

Tolerance of the Eye for Radium.—Jonquieres states that the eye can bear exposure to radium with "enormous tolerance." He has treated numbers of cases of epithelioma of the lids with twelve hours of application of radium, without any by-effects more than a congestion which disappears in a week or two. Seven one hour sittings once a week answered the purpose, and there never has been any disturbance later, the intervals up to five years in his cases. In patients over 50, vision actually improved afterward some of them said.

Sarcoma of Nose and Cheek Cured by Roentgen Rays.—Espinola's illustrations of the large sarcoma in nostril, rhinopharynx and maxillary sinus confirm the possibility of the retrogression of an inoperable, otherwise fatal malignant tumor under ultra hard roentgen rays. Nothing abnormal is to be found now except a mucopurulent secretion from the maxillary sinus, which is still opaque.

Operation on Lacrimal Sac.—The technic illustrated is that of the Dupuis-Dutemps-Bourget dacryocystorhinostomy.

Revista Médica del Uruguay, Montevideo

January, 1922, **25**, No. 1

*Typhoid at Montevideo. Alice Armand Ugón.—p. 1.
Means to Reduce the Infant Death Rate. J. A. Bauzá.—p. 13.
Relative Incapacity in Certain Mental States. B. Etchepare.—p. 19.
Epidemic Encephalitis in Two Children. M. Ponce De León.—p. 31.

Typhoid in Children at Montevideo.—Armand Ugón states that there was an unusual number of suppurative complications in skin, glands and bones among the 176 cases of typhoid in children during the first six months of 1921. In 2 cases the suppuration was in the parotids, and in the ear in 8. The numerous pustules on the skin in one child became gangrenous, with vast loss of tissues; another child in this family had hemorrhages from the skin, and melena. One child with hemorrhages from the skin, hematuria and melena recovered. Desquamation the third week was common, but it was on the body, never on hands or face. In the girls' department of the hospital all were vaccinated against typhoid and no instance of hospital contagion occurred, while 5 cases of typhoid developed in the boys' department, in which no vaccination had been done. The total mortality of the epidemic was 7.38 per cent.

Semana Médica, Buenos Aires

Jan. 5, 1922, **29**, No. 1

*Relations Between Asthma and Tuberculosis. J. P. Garrahan.—p. 1.
Bismuth in Treatment of Syphilis. O. Calcagno.—p. 5.
Procedure for Gentle Rupture of Amniotic Sac. González.—p. 9.
History of the Radium Presented to Mme. Curie. Z. Guzman.—p. 13.
*Minor Signs of Bright's Disease and Tuberculosis. J. A. López.—p. 16.

Relations Between Tuberculosis and Asthma.—Garrahan relates that of fifty-seven children with asthma, all tested repeatedly with tuberculin, only seventeen gave a positive response. This is about the average percentage of positive reactions in all classes as well as in those with asthma. For this and other reasons cited, he thinks we have no grounds for assuming that tuberculosis plays an important part in the production of asthma.

Minor Signs of Nephritis in the Tuberculous.—López reports three cases of tuberculous rheumatism in which several of the minor symptoms characteristic of chronic nephritis were evident. As the tuberculosis subsided under treatment, these nephritis symptoms disappeared and he thinks that the tuberculosis had been responsible for them. The symptoms were numbness of the fingers, fleeting deafness in one ear and recurring tinnitus, cramps in the calves, and once in a while the subject started violently.

Jan. 26, 1922, **29**, No. 4

*Hemorrhagic Pancreatitis. I. Allende.—p. 109.
*Serotherapy of Tuberculosis. J. W. Howard.—p. 111.
Orthopedics at Buenos Aires. J. M. Jorge.—p. 117.
Antigangrene Serums. A. Sordelli.—p. 121.
*Precancer Lesions. C. Stajano.—p. 124.
*Epithelioma of Conjunctiva. C. Jimenez López, A. Peña Chavarría and V. Ribón.—p. 133.
*Injection of Epinephrin into Heart of Infant. N. A. Dacharry.—p. 135.
*Diagnosis of Tuberculosis from Sputum. J. Bacigalupo.—p. 138.
The McDonagh Chemotherapy. A. Santangelo.—p. 139.
Leishmaniasis in Argentina. M. Arriola Moreno.—p. 144.
Official Report on Some Poisonous Hair Dyes. C. A. Grau.—p. 148.

Hemorrhagic Pancreatitis. — The apparently perfectly healthy man died in less than thirty hours from the first symptoms. The pancreas was merely a mass of fat and blood; there was no pus, and the other viscera were sound except for a few small calculi in the gallbladder.

Serotherapy of Tuberculosis.—Howard here brings his report down to date. He has had highly encouraging results, he says, in acute and incipient forms of pulmonary tuberculosis and in tuberculous peritonitis with ascites. He has been impressed with the frequency of a syphilitic factor in glandular tuberculosis, and now gives treatment for syphilis as well, when the lesions prove refractory, even with negative Wassermann reaction, and the patients have always benefited.

The Precursors of Cancer.—Stajano presents an array of arguments to sustain the view that epithelial cancer is a process of dystrophic nature, consecutive to a precancer lesion which can be readily explained by study of the etiology and pathogenesis of the nervous disturbance which produced it. We must regard traumatism in general and chronic ulceration in particular as something more than a purely local lesion; they disturb the entire nervous system of the region. Epithelial cancer develops only in certain zones: in organs and regions most exposed to traumatism, mechanical or inflammatory, and at points most abundantly innervated, with highly differentiated functions. The organs closest to the large plexuses are more vulnerable than remoter regions. The greater the distance between the region and its nerve center, the less the liability to persisting lesions, precursors to cancer. The trophic center suffers from a long persisting mild irritation while it repairs rapidly the injury from a single, even violent trauma. In short, he concludes, cancer research is on the wrong track when it is devoted to the established cancer. The precancer lesions are the ones that will repay study. In his experience the centers responsible for the dystrophia were suffering from senility, natural or pathologic; toxic influences, endogenous or exogenous; infections, tuberculosis, syphilis or smallpox; denutrition of the nervous system,. decalcification, traceable to pregnancies, overlong lactation or deranged metabolism; and finally, prolonged emotional stress, grief, depression and worry.

Epithelioma of the Conjunctiva.—The occupation of the woman was spinning wool, and the first symptoms had been noted two years before the tumor and eye were removed.

Reanimation of New-Born Infant by Intracardiac Injection of Epinephrin.—Dacharry relates what he thinks is the first case of this kind in an infant, and expatiates on the simplicity, ease and success of the procedure. The woman had had to be delivered with forceps at five of her nine preceding childbirths, and only one of the forceps children survived. The present child was likewise taken with forceps, with much difficulty, and was in white asphyxia, practically dead, no heart beat perceptible. The cord was cut, and ⅓ c.c. of the 1 : 1,000 solution of epinephrin was injected in the fourth interspace, 12 mm. inside the left nipple, the needle introduced for 0.5 cm. In a minute and a half the heart began to beat vigorously, and at once other measures were applied, hot baths, alcohol rub, Schultze, etc., and at the tenth minute the child gasped, and gradually normal respiration became installed and the skin grew pink. The delivery had been so difficult that meningeal hemorrhage had occurred and the child died the ninth day, but the heart beat kept normal to the last.

Cultivation of Tubercle Bacilli from the Sputum.—Bacigalupo reports experiences with Petroff's method which corroborate the favorable publications of others on the subject.

Siglo Médico, Madrid

Feb. 4, 1922, **69**, No. 3556

Luxation of the Shoulder. J. Goyanes.—p. 113, Conc'n No. 3557, p. 146.
*Protozoa in Children. E. Escomel.—p. 116.
Treatment of Pulmonary Tuberculosis by Natural Agents. R. Villegas. —p. 120. Conc'n.

Protozoa in Children.—Escomel's study refers to children in southern Peru, but he says that his conclusions apply to similar conditions anywhere, as the protozoa that infest adults develop with equal facility in children. Simple laboratory tests clear up the diagnosis of many puzzling chronic conditions in children. The protozoa are readily eradicated by the proper drugs, but treatment has to be individual for each, notwithstanding the frequent similarity between the clinical pictures. Among the less common clinical pictures he describes are amebiasis and trichomoniasis of the gums, and the latter of the vagina, and atypical malaria from combination with helminths, etc. He reviews the treatment he has found most effectual for the different protozoa.

Feb. 11, 1922, **69**, No. 3557

*Epinephrin for Polyneuritis. R. del Valle y Aldabalde.—p. 141.
Leukocyte Count in Acute Infectious Diseases. D. Fuejo.—p. 142.
*Pregnancy After Nephrectomy. Saenz de Santa María y Marrón.—p. 145.
*Serotherapy Fatality? S. González.—p. 148.

Epinephrin in Treatment of Polyneuritis.—Del Valle reported recently a case of pseudohypertrophic myopathy which improved notably under a systematic course of epinephrin. He here reports even more gratifying results from this treatment in a case of polyneuritis of nearly three months' standing in a young man. The polyneuritis had followed an infectious sore throat which may have been diphtheria. Treatment with strychnin was totally ineffectual, but under daily subcutaneous injections of 1 mg. of epinephrin, improvement was evident in a week, and in five weeks the cure was practically complete, and the epinephrin was dropped.

Gestation After Nephrectomy.—The tuberculous right kidney had been removed nearly four years before, but the woman of 25 was safely delivered of viable twins. The only disturbance in the course of pregnancy was from influenza at the sixth month followed by edema of the legs until term, which Saenz ascribes to mechanical compression. The urine kept normal throughout. He cites Castagne's nephrectomized patient who died from intercurrent disease after an apparently normal pregnancy, and the remaining kidney was found in sclerosis degeneration, weighing only 35 gm., and yet it had performed its task satisfactorily throughout the pregnancy. In conclusion he mentions that in an endemic focus of goiter he has often noticed hoarseness in pregnant women with symptoms of hyperthyroidism, evidently from compression by the goiter enlarging during the pregnancy. In sterile women with symptoms of hypothyroidism, prolonged thyroid treatment was often followed by conception or by normal childbirth in those who had never been able to carry a pregnancy to term before.

Serotherapy Fatality?—González asks if there can be any other explanation of the hemorrhagic syndrome that developed suddenly the fourth day after the first injection of 20 c.c. of diphtheria antitoxin, followed by one of 10 c.c. The girl of 15 was apparently convalescing smoothly from her diphtheria when hemorrhages from the vagina, stomach, bowels and nose proved fatal.

Deutsche medizinische Wochenschrift, Berlin

Feb. 9, 1922, **48**, No. 6

Dental Infections and General Disease. H. Schottmüller.—p. 181.
Relation of the Tissues to Diuresis and the Importance of the Tissues as Places of Deposit. Nonnenbruch.—p. 183.
The Contagiousness of Lupus Vulgaris. K. Burchardi.—p. 185.
Effect of Wound Hormones on Cell Growth. K. Naswitis.—p. 187.
Libido in Relation to Internal Secretion. A. Weil.—p. 188.
Respiratory Chest Expansion. Scheidt.—p. 189.
Improvement Under Local Application of Mercury in Stomatitis Ulcerosa. F. Köthe.—p. 191.
Roentgen-Ray Injuries. E. Liek.—p. 192.
*Blocking the Phrenic Nerves to Cure Singultus. C. Wegele.—p. 193.
Diseases of the Pancreas. G. Singer.—p. 193. Conc'n.
Extra-Uterine Pregnancy, Disturbances of Menstruation, and Sterility. W. Liepmann.—p. 195.
Waldeyer's Hands. H. Virchow.—p. 199.

Temporary Exclusion of the Phrenic Nerves in Persistent Singultus.—Wegele tried Kroh's method of exclusion of the phrenic nerves by means of procain in treatment of singultus that had continued for a week, and the result was prompt and effective. In mild cases of persistent singultus he has found the administration of 1 level teaspoonful of bicarbonate of soda on a full stomach often efficacious. The introduction of the stomach sound, as recommended by Fuld, should also be tried in stubborn cases before resorting to more radical measures.

Medizinische Klinik, Berlin

Feb. 5, 1922, **18**, No. 6

*Examination of Heart in the Pregnant. Deutsch and Priesel.—p. 165.
*Diphtheria of the Skin. H. Biberstein.—p. 168.
*Case of Gonococcus Meningitis. L. Lindenfeld.—p. 176.
Eyelet Holes in Skin to Tie Up Openings. A. Linhart.—p. 178.
*Ileus from Omphalo-Mesenteric Duct. Ortenberg.—p. 178.
Senile Hysteria. F. Friedländer —p. 179.
The Sachs-Georgi Test. Gaehtgens and Salvioli.—p. 179.
*Hydrotherapy and Thermotherapy in Gynecology. E. Tobias.—p. 182.
*Present Status of Pigmentation Question. G. Herold.—p. 184.

The Heart During Pregnancy.—Deutsch and Priesel found the heart slightly enlarged in twenty-three normal pregnant women. Both sides of the heart enlarged, but there was no further enlargement during parturition, and the enlargement rapidly subsided during the puerperium.

Eczematoid Diphtheria of the Skin.—In 74 cases of supposed eczema, Biberstein found diphtheria bacilli in 23 cases, and in 8 others the diagnosis of diphtheria of the skin seemed almost certain. No diphtheria bacilli were found in the throat in any of this group. In the total 131 suspects, only one case of diphtheria infection of an accidental wound was encountered. In this group of 23 eczematoid diphtheria cases, the lesion was usually around and back of the ear, but only exceptionally was there any formation of false membrane. He remarks that the whole field of eczema should be examined for primary or secondary diphtheria bacillus infection. No source for the infection could be discovered in his cases, and no instance of contagion of others was known except one case in which an adult, occupying a room in which he had been preceded by a child with diphtheria of the skin, developed laryngeal diphtheria and an attendant was found to be a carrier. The primary source in this case is not certain. Biberstein gave antitoxin only in 5 of the cases; in these there were diphtheric lesions elsewhere, vulva or throat. Better results were realized with local chemotherapy.

Gonorrheal Meningitis.—The man of 53 died seven weeks after the sudden onset of cryptogenous sepsis, and necropsy revealed purulent meningitis. The microscope showed a diplococcus in the meninges, spinal cord and seminal vesicles, the lesions in the latter being evidently older than the others. The diplococci could not be cultivated which is further evidence to differentiate them as gonococci; these are unable to stand long continued febrile temperatures. In nine cases of gonococcus meningitis he has compiled, four terminated fatally. The necropsy findings resembled those in the case here described. In several of the cases an eruption accompanied the meningitis, as in this case.

Ileus from Persisting Omphalomesenteric Duct.—The operation on the boy of 8, the thirty-sixth hour after the onset of the ileus, revealed that the obstruction was due to the persisting omphalomesenteric duct. It was 10 cm. long, and was connected with a Meckel diverticulum 15 cm. long.

Hydrotherapy in Gynecology.—Tobias expatiates on the importance of hydrotherapy and thermotherapy for the physiology and the pathology of the female sexual organs.

The Pigment Question.—Herold reviews recent literature on the origin and nature of the pigment in human skin.

Feb. 12, 1922, **18**, No. 7

Arsphenamin and the Maximal Doses. A. Heffter.—p. 199.
*The Asthenic Vascular Reaction. E. Schiff.—p. 201.
*Demonstration of Hemoconias. F. Glaser and Buschmann.—p. 203.
Cretinism and Ossification Anomalies. Finkbeiner.—p. 203. Conc'n No. 8, p. 244.
*Endarteritis from Abuse of Tobacco. S. Suchy.—p. 208.
Pityriasis in Syphilitics and Herxheimer Reaction. Feit.—p. 209.
*Mechanism of Dold Turbidity Reaction. H. Dold.—p. 212.
Hysteria and Hydrotherapy. E. Tobias.—p. 215.
*The Light Waves that Induce Erythems. Axmann.—p. 216.
Clinical Pictures with Influenza. Idem.—p. 216.
*The Internal Secretions and Temperature Regulation. R. Isenschmid.—p. 217. Conc'n No. 8, p. 251.

The Asthenic Vessel Reaction.—Schiff calls attention to the anomalous response to injection of epinephrin in children with a filiform pulse. With a normal pulse, the epinephrin is followed by a sudden and intense rise in the blood pressure. In these pale children with filiform pulse there is no such reaction, or it is very slight, as is likewise the case with children whose pulse fluctuates repeatedly from filiform to full, and the complexion varies readily from pale to flushed. In this latter group, the blood pressure rises promptly after the epinephrin but does not climb high. Even treatment with atropin does not modify the reaction. The minimal response to epinephrin may thus be accepted as a sign of a substandard vascular system. If epinephrin is given for any purpose, there need be no fear of a violent reaction.

Macroscopic Test for Blood Dust.—Glaser and Buschmann examine the blood serum for opalescence and turbidity two hours after test ingestion of 50 gm. butter on bread. The macroscopic evidence of the hemoconia can be made more distinct by pouring on the serum a 5 per cent. aqueous solution of glycerin. A white ring forms at the zone of junction, especially after twenty-four hours at a temperature of 37.

Endarteritis from Excessive Smoking.—Almost the entire vascular system, the vessels in the limbs and brain and the coronaries, displayed symptoms indicating endarteritis for which no cause could be discovered except the smoking of about fifty cigarettes a day, combined with drinking quantities of coffee and tea. The first symptoms had been intermittent limping, with a sensation as if the legs did not belong to the man, but in three or four months a cerebral hemorrhage induced paralysis, and death from hypostatic pneumonia soon followed.

Dold's Reaction in Diagnosis of Syphilis.—The serum of 600 persons tested gave concordant results with the various serologic tests in from 93.7 to 98.8 per cent. The Dold test seemed the most sensitive, Dold says, while it is by far the simplest.

Light Erythema and Length of Light Waves.—Axmann refers to some recent research in which the light from a quartz lamp was broken up with two large quartz prisms. By this means it was ascertained that the production of light erythema and of pigment in normal skin are always paired. Also that only the small zone of waves with a length of from 307 to 297 light wave units is the erythema and pigment producing element.

Internal Secretion and the Body Temperature.—Isenschmid brings together a large amount of scattered data from the literature on the share of the different endocrine glands in the regulation of the temperature.

Münchener medizinische Wochenschrift, Munich

Jan. 27, 1922, **69**, No. 4

Cholemic Lipemia. M. Bürger.—p. 103.
Oxytocic Action of Posterior Pituitary Lobe. Trendelenburg.—p. 106.
Proteotherapy. W. Weichardt.—p. 107.
Phototherapy in High Blood Pressure. A. Kimmerle.—p. 108.
Constitution and Transmission of Acquired Characters. P. Mathes.—p. 109.
Subjective and Objective Influence on Lactation. Schoedel.—p. 111.
Provocation of Latent Gonorrhea in Women. H. Nevermann.—p. 113.
To Enhance Effect of Arsphenamin on Nervous System. Kalberlah.—p. 114.
Skin Blanching in Diagnosis of Scarlet Fever. Haselhorst.—p. 116.
Takayama Test for Hemochromogen. G. Strassmann.—p. 116.
Chronic Ankylosis of the Spine. Brennsohn.—p. 117.
Splint for Tendon of Extensor Digitorum. H. A. Staub.—p. 119.
Gabbe's Glycerin Reaction as Indicator of Lipoid Content of Blood. Engelmann.—p. 120.
Demonstrating Spirochetes in Frozen Sections. G. Steiner.—p. 121.
Anthropology in Respect to Medical Practice. Kretschmer.—p. 121.
Dosimetry in Deep Roentgen Irradiation. Lehmann.—p. 121.
"Complement Conservation." J. Hammerschmidt.—p. 122.
"Treatment of Affections of the Cervix Uteri with Celluloid Capsules." Pust.—p. 122.
Placenta Praevia. A. Döderlein.—p. 123.
Changes in Spinal Fluid in Early Syphilis. J. K. Mayr.—p. 127.

Feb. 3, 1922, **69**, No. 5

*Effect of Alcohol on Sport Activities. H. Herxheimer.—p. 143.
Voluntary Activity of Smooth Muscles. F. Hamburger.—p. 145.
Pathogenicity of Bacillus Abortus Infectiosi. Klimmer and Haupt.—p. 146.
Winter Itching Eczema. F. Schultze.—p. 147.
Psychogenic Factors in Pruritus. W. T. Sack.—p. 148.
A Year's Experience with the Linser Method. Von Pezold.—p. 151.
Retarded Growth of Children Since the War. Schlesinger.—p. 153.
Sausage Poisoning from Bacillus Proteus Vulgaris. Baerthlein.—p. 155.
Incidence of Goiter in Continuation Schools of Munich. Fürst.—p. 156.
Syringomyelia and Peripheral Trauma. L. Fuchs.—p. 157.
Self-Observed Case of Influenza Myositis. Vormann.—p. 158.
Death Following Ethyl Chlorid Anesthesia. Hofmann.—p. 159.
Treatment of Finger Infections of Physicians. Honigmann.—p. 160.
Painless Delivery. Friedländer.—p. 161.
Roentgenographic Diagnosis of Pulmonary Tuberculosis. Thomas.—p. 162.
Care of the Teeth. Brubacher.—p. 162.
Early Diagnosis of Diffuse Purulent Peritonitis. Krecke.—p. 162.
*Prohibition in the United States. Gaupp.—p. 164.

Effect of Alcohol on Performance in Sport Activities.—Herxheimer discusses the effect of alcohol on the functions of the body in general and more particularly in connection with sport activities. Experiments on thirty-one athletes showed that the ingestion of small quantities of alcohol (7 gm. of 96 per cent. alcohol, diluted) four to six minutes before the men entered upon 100 meter runs and 100 meter swims reduced their performance considerably. Runners who received no alcohol ran the course in about two tenths of a second less than those to whom the dose of alcohol was given. The results for the swimmers who were given no alcohol were also correspondingly better. This corresponded to a gain of 2 meters in the course.

Prohibition in the United States.—Gaupp is professor of psychiatry at the University of Tübingen, and he appeals here to the German people to consider the progress in public health and private prosperity which has already followed prohibition in the United States. [An editorial in the same issue endorses his statements, saying that far too little attention has been paid in Germany to "this most important step which a people ever took to promote health and morals."] Gaupp concludes his historical sketch of prohibition with the statement that the only way to ever reach the goal is by training the young to a life without alcohol as a matter of course. He adds, "In Germany, from 18 to 20 thousand millions were spent in 1921 on spirituous beverages; the alcohol morbidity is increasing every month; wines and liqueurs are being imported freely, and French brandy by the carload." . . . "The Germans have to import thousands of millions worth of grain for food while large areas are given over to the cultivation of raw material for the distillers and brewers. Potatoes, grain and fruits, needed for food, are given to the liquor manufactures, and more have to be imported at the ruinous rate of exchange." He cites notices posted by the authorities informing the postoffice and state railroad employees that they are entitled to buy brandy from the state reserves. At the Gumbinnen station the notice adds, "The brandy is of good quality, costing in the storage warehouse 38.45 marks per liter." Gaupp visited America three times before the war, and he appreciates the difficulty in enforcing prohibition at present, but anticipates that when the existing supplies of liquor are exhausted the task will be easier. He comments on the fact that the physicians of the United States "were by no means the leaders in the fight against alcohol—an experience which agrees with that in other countries."

Zeitschrift für klinische Medizin, Berlin

Jan. 25, 1922, **93**, No. 1-3

*Laws of Uric Acid Colloid. H. Schade.—p. 1.
Occurrences of Bence-Jones Albumin. A. Kimmerle.—p. 66.
The Sugar Metabolism. II. H. Staub.—p. 89; III.—p. 123.
Spirochetes and the Blood Picture in Relapsing Fever. A. Mayer.—p. 141.
Auscultation of the Heart in Influenza. H. Müller, Jr.—p. 164.
*Etiology of Sciatica. F. Lindstedt (Stockholm).—p. 179.
*The Uremia Question. H. Rohonyi and H. Lax.—p. 217.

The Uric Acid Colloid.—Schade has been studying the physical-chemical laws regulating the uric acid colloid and oversaturated solutions of uric acid. He thinks that his research in this line has afforded a basis for better comprehension of the phenomena in connection with the precipitation and dissolving of uric acid in the human body.

Pathogenesis of Sciatica and Lumbago.—A similar article by Lindstedt was summarized recently in The Journal, Aug. 27, 1921, p. 744.

Nitrogen Retention in Uremia.—Rohonyi and Lax investigated the nitrogen retention in uremia and the distribution of nonprotein nitrogen in the tissues in four cases of insufficiency of the kidneys, and tabulate the findings.

Zentralblatt für Chirurgie, Leipzig

Dec. 31, 1921, **48**, No. 52

*Resection of the Stomach for Ulcer. K. H. Bauer.—p. 1889.
Operation for Incarcerated Obturator Hernia. F. Franke.—p. 1893.

Extirpation of the Gastric Channel in Treatment of Ulcer.—The method proposed by Kaiser: (1) longitudinal resection of the lesser curvature for the treatment of gastric ulcer with a view to "lengthening the lesser curvature at any cost," and the method of Schmieden; (2) excision of the gastric channel, as a form of causal therapy, cause Bauer to publish a preliminary report of the results secured in a series of animal experiments in which the *Magenstrasse* (gastric channel) was resected. Schmieden bases his principles and conclusions on the alleged law of localization that all typical round ulcers have their seat along the gastric channel. One is tempted to go further and say: There is no such thing as a gastric ulcer in the general sense; there are only ulcers of the gastric channel. If we remove the ulcer zone; namely, the gastric channel, are we removing the danger zone? Must we not reckon with the possibility that, after extirpation of the gastric channel, at some new focus of mechanical irritation, the same set of conditions will lead to the same effect—to another ulcer. Bauer first experimented with a healthy dog to satisfy himself of the existence of a well developed gastric channel in dogs, and then with seven other dogs, extirpating radically the gastric channel from the cardia to the pylorus. The extirpation of the gastric channel had a very slight effect on the structure and function of the stomach. In the stomachs of three dogs, examined from three to four months afterward, there were evidences of the formation of a new gastric channel. In two of the dogs with extirpated gastric channel, the introduction of small quantities of hydrochloric or sulphuric acid brought about corrosion mainly along a newly formed gastric channel, whereas the remainder of the stomach showed marked corrosion only on the crests of the mucosal folds. It is therefore evident that the mechanical predisposing factors that helped to produce the first ulcers are restored. However, it must be admitted that extirpation of the old gastric channel establishes a new, healthy channel; lessens the danger of coincidence of harmful factors at given points; leaves the stomach in a shape which takes better account of the natural mechanics of the stomach than any other operative procedure; sacrifices, as compared with more radical methods of resection, only a minimum of functioning mucosa and musculature, and does not impair the physiologic evacuation mechanism of the stomach. Yet the fact that following extirpation of the gastric channel old conditions may soon be restored justifies a certain reserve.

Zentralblatt für Gynäkologie, Leipzig

Dec. 24, 1921, **45**, No. 51

*Genital Tuberculosis in Women. G. Bertolini.—p. 1830.
"Cardiac Defects in Relation to Pregnancy." Von Jaschke.—p. 1837.
Childbirth Complicated by Ovarian Tumor. Björkenheim.—p. 1838.
Suspension of the Collum Uteri. R. Graf.—p. 1843.

Genital Tuberculosis in Women.—Bertolini discusses a series of 55 cases of genital tuberculosis in women. The peritoneum and the various organs were affected numerically as follows; the peritoneum in 43 cases, the tubes in 19, the corpus uteri in 7, the cervix in 4, the portio in 1, the ovaries in 7, the vulva in 1 and the vagina in none.

Zentralblatt für innere Medizin, Leipzig

Dec. 24, 1921, **42**, No. 51

"Physiognomic Signs of Congenital Syphilis in the Second and Third Generation." P. Kranz.—p. 977.

Dec. 31, 1921, **42**, No. 52

Enrichment of Fluid Culture Mediums. Huntemüller.—p. 993.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 4, 1922, **1**, No. 5

Hydatid Cysts in Spleen. H. A. Lubbers and W. Noordenbos.—p. 460.
Protection Against Roentgen Rays. D. J. Steenhuis.—p. 472.
Drum-Stick Fingers with Gastric Cancer. A. Willemse.—p. 477.
Present Status of Bacteriophagum Question. L. K. Wolff.—p. 479.
Galenus and Sports. H. J. Lulofs.—p. 486.
Scurvy on Dutch Ships in 1730. A. K. A. G. Hodenpijl.—p. 496.

Feb. 11, 1922, **1**, No. 6

Research on Bullet Wounds. J. P. L. Hulst.—p. 560.
*Occipital Neuralgia. L. J. J. Muskens.—p. 566.
Periodicity of Ferments. E. Sluiter.—p. 572.
Rheumatismal Meningitis. J. R. Kollewijn.—p. 579.
False Diaphragmatic Hernia. J. A. van Dongen.—p. 582.

Feb. 18, 1922, **1**, No. 7

Action of Quinin on Auricular Fibrillation. S. de Boer.—p. 642.
Scaphoid Scapula. J. H. O. Reijs.—p. 652.
Registration of Effect of Vaccination. E. J. Hamburger.—p. 656.
The Newer Weapons in Control of Diphtheria. P. H. Kramer.—p. 661.

Occipital Neuralgia.—The pain with occipital neuralgia in Muskens' two cases was continuous and so severe that sleep was almost impossible. In the first case it had developed after epidemic encephalitis, two years before. This woman of 33 was cured by an operation on the occipital nerves, rolling them up toward the periphery. The pain in the shoulder still persisted, and the sensory cutaneous branches of the accessory nerve were identified and stretched, which completed the cure (December, 1921). In the other case the neuralgia began in three fingers of the right hand six years before, and it gradually spread to involve arm, shoulder and back of the head. The occipital nerve and two nerves under the sternocleidomastoid muscle were rolled up, and the pains in the head were relieved although those in the shoulder persisted. This patient has not been seen since.

Hygiea, Stockholm

Jan. 16, 1922, **84**, No. 1

*Insufflation of Gas in Body Cavities. A. Josefson.—p. 1.

Diagnostic Insufflation of Gas into Body Cavities.—Josefson found pneumoperitoneum of no use in 9 of the 16 cases in which he applied it, and in 2 cases actual harm resulted. In 5 it was of a little assistance but was never really useful, and in 6 cases the patients complained of disturbances from it. He cites from the records 2 cases of consecutive preperitoneal emphysema and several of cutaneous emphysema. Injection of air into the spinal canal in his ten cases was not followed by any mishaps. He noted that when fluid escaped from the lumbar puncture each time, as air was injected, the course of the case showed open communication upward, while when only air escaped, this showed total, or partial obstruction of the spinal canal. There was slight bleeding in the cortex in one of his cases during the intervention. He urges the importance of publishing all the mishaps with these new procedures as the only means to judge their availability and drawbacks.

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DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE MEDIASTINUM *

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The various affections of the mediastinum are so frequently associated with pulmonary disease, and the symptoms, cough, expectoration and dyspnea, which usually call our attention to affections of the lung are present in such a large proportion of the cases of mediastinal disease, that errors in diagnosis easily occur. For greater assurance in differential diagnosis, therefore, a careful consideration of the anatomy of the mediastinum and of the characteristic features of the various diseases by which it may be invaded is essential.

ANATOMY OF THE MEDIASTINUM

The mediastinum includes the space bounded in front by the sternum, behind by the dorsal vertebrae, and laterally by the reflections of the pleurae. This space is arbitrarily divided into three subdivisions, designated, respectively, as the anterior, the middle and the posterior mediastinum.

Sometimes a fourth subdivision, designated the superior mediastinum, is made, comprising the space from the upper opening of the chest to the level of the upper part of the pericardium and the roots of the lungs, bounded in front by the manubrium sterni and posteriorly by the upper four dorsal vertebrae. The superior mediastinum, therefore, contains the arch of the aorta and the vessels arising from it, the innominate veins, the superior vena cava, and the upper part of the thymus. It is traversed by the trachea, esophagus, thoracic duct and the vagus, phrenic and sympathetic nerves.

The shallow anterior mediastinum lies in front of the pericardium and contains the lower portion of the thymus and a few lymph glands.

The middle mediastinum contains the heart, with its pericardium, and the termination of the inferior vena cava, while the roots of the lungs lie partly within this space and partly within the superior mediastinum. The posterior mediastinum, which lies between the spine and the middle mediastinum, contains the esophagus, the descending aorta, the thoracic duct, the azygos veins and the pneumogastric and sympathetic nerves.

The lymph glands in the mediastinal space are divided according to their positions into four groups: (1) anterior mediastinal or sternal, comprising those which lie in the loose areolar tissue between the sternum and the pericardium; (2) superior mediastinal, those situated in front of the upper part of the pericardium, the arch of the aorta and the left innominate vein; (3) posterior mediastinal, those situated along the course of the aorta and the esophagus, and (4) bronchial, those situated in front of and behind the bifurcation of the trachea, along the main bronchi and at the roots of the lungs.

SYMPTOMS DUE TO COMPRESSION

Most of the clinical phenomena associated with pathologic conditions in the mediastinum result from pressure on some one or more of the important structures contained in it. It is therefore an important aid to diagnosis to be able to relate the symptoms in an individual case to the structures which are primarily involved.

Compression of the Veins.—Pressure on the superior vena cava causes cyanosis or lividity of the face; suffusion of the conjunctivae; prominence and staring of the eyes; edema of the face, neck, upper part of the thorax and arms, and distention and dilatation of the superficial veins of the face, neck and upper part of the body. This venous involvement may extend as low as the umbilicus, and may include the mammary and the superior epigastric veins. In addition to these phenomena, compression of the superior vena cava may cause headache, vertigo, epistaxis, tinnitus, deafness, disturbance of vision and somnolence.

Compression of the vena azygos major causes dilatation of the intercostal veins, especially of those on the right side; right-sided hydrothorax, and occasionally pericardial effusion. Sometimes spinal symptoms have been noted, with resultant sensory and motor disturbances of the legs and lower portions of the body.

The chief physical signs of obstruction or compression of the inferior vena cava are edema of the lower part of the body and of the legs; albuminuria, and dilatation of the superficial veins of the lower part of the body.

Compression of the Arteries.—Compression of the aorta and its branches, the innominate, the left common carotid and the subclavian arteries, causes diminution in the size and equality of the radial pulses; alteration of the pulsation in the carotid arteries; engorgement of the left side of the heart; pallor, giddiness, and anginal pains.

Pressure on the pulmonary artery produces cyanosis and engorgement of the right side of the heart, with later evidences of cardiac decompensation.

Compression of the Air Passages.—Compression of the trachea is marked by stridor, dyspnea, persistent coughing—the so-called "gander" cough—and occasionally hemoptysis.

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* Read before the Laënnec Society of Ontario, Peterboro, Ont., Nov. 2, 1921.

Pressure on the bronchi produces coughing, diminished tactile fremitus, and voice sounds over the area of the lung corresponding to the affected bronchus.

Compression of the Esophagus.—This is marked by dysphagia.

Compression of the Thoracic Duct.—This produces emaciation, chylothorax and chylous ascites.

Compression of the Heart and Pericardium.—This causes displacement of the heart, pericardial effusion and irregular heart action.

Compression of Nerves.—Compression of the vagus causes irregularity of the heart action with marked slowing, syncope, vomiting, dysphagia and spasmodic coughing. Pressure on the inferior laryngeal causes paralysis of the posterior crico-arytenoid muscles with resultant stridor, inspiratory dyspnea, and a peculiar paroxysmal resounding cough. Pressure on the sympathetic nerves is marked by irregularity of the pupils, dilatation of the pupil on the affected side being frequently observed, although in other cases the pupil is contracted, the variation depending on the degree of pressure on the nerve. The vasomotor disturbance due to interference with the sympathetic nerves influences the nutrition and temperature of the face and neck. Pressure on the intercostal nerves on the affected side where they emerge from the spine causes painful neuralgias along their course.

Outward Pressure on the Sternum or on the Spine.—This may cause bulging or erosion of the sternum and of the costal cartilages. Erosion of the vertebrae also may occur, with resultant motor or sensory disturbances below the level of erosion, or even paraplegia.

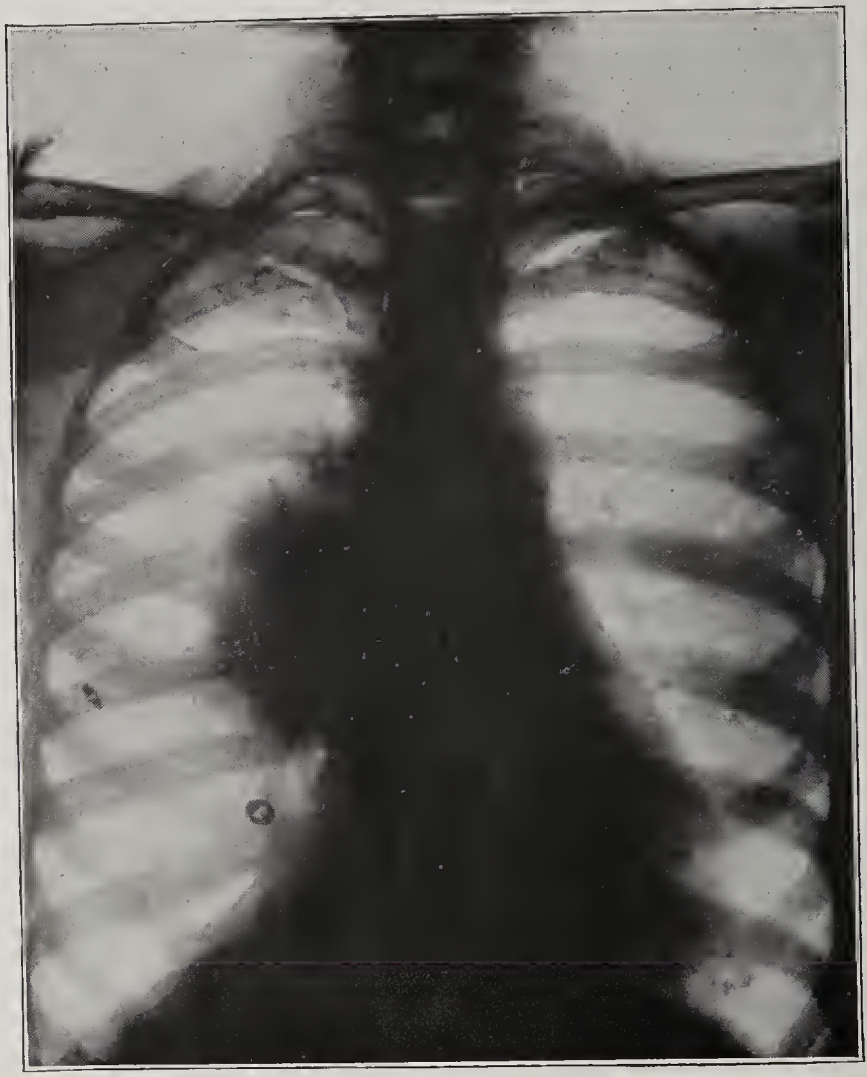

Fig. 1.—Mediastinal carcinoma, metastatic from breast.

HISTORY AND EXAMINATION

The importance of a careful and searching inquiry into the history of a patient in whom disease of the mediastinum is suspected cannot be overestimated. The duration and severity of such symptoms as pain, coughing, hoarseness and shortness of breath should be minutely investigated, in order that proper valuation may be placed on their importance. In a case in which the presence of a tumor is suspected, it is essential to consider the possibility that a primary tumor may be present elsewhere. In one recent case in which there was a tumor of the right lung, I was at a loss to find the primary focus until I discovered that, several months before, the patient had been under treatment with radium for an ulcerated pigmented mole on the surface of the abdomen.

The physical examination should be complete, and should include a neurologic examination. A rectal examination also should never be omitted. Inspection of the chest plays an important part in the diagnosis. The examiner should look for distention of the veins over the upper part of the chest and over the head and neck; for edema of the face, neck or upper extremities; for bulging of the sternum, and for swollen glands above the clavicle. By inspection and by palpation, the presence or absence of the expansion of the two sides of the chest, displacement of the trachea, and the position of the apex beat of the heart should be determined. Percussion will often identify a widening of the area of mediastinal dulness, particularly in the second and third interspaces on each side of the sternum. Percussion of the lungs will reveal also the flatness or impairment of resonance which results from the compression of a bronchus or from the effusion of fluid into the pleural cavity. Percussion over the sternum will often elicit a definite tracheal tone in the case of a tumor in the superior mediastinum. Auscultation will reveal the changes in the breath sounds over the lungs which result from the presence of fluid in the pleural cavity or from bronchial compression. Howard has described a leathery friction rub over the sternum which occurs in certain cases of mediastinal disease.

The roentgen-ray examination of the chest, by means either of the roentgenoscope or of the roentgenogram, has added a great deal to our diagnostic equipment for the detection of mediastinal tumors. If any doubt regarding the diagnosis remains after a careful physical examination of the chest, either a fluoroscopic examination or roentgenograms of the chest should always be made. I believe that a fluoroscopic examination of the chest should be made in every patient over 50 years of age. In this way we shall detect in many a case the presence of a dilated aorta or of a mediastinal tumor that would otherwise be missed. I do not mean that the roentgen-ray examination should take the place of a careful physical examination, but rather that it should supplement the findings of the latter.

TUMORS OF THE MEDIASTINUM

Excluding aneurysm, tumors of the mediastinum form the most interesting and the most important group of diseases of this region. These may be primary or secondary, malignant or benign. Almost every type of tumor may be found in the mediastinum. I shall describe briefly the characteristics of fibroma, lipoma, chondroma, osteochondroma, myoma, sarcoma, carcinoma, simple cyst, dermoid cyst, teratoma, hydatid cyst and syphilitic gumma, the enlarged lymph glands that may occur from Hodgkin's disease, leukemia, tuberculosis and intrathoracic goiter.

Fibromas of the mediastinum are very rare. Hare, in his monograph, reports only seven cases from the literature. Fibromas may arise from the sternum or from the cellular tissue of the mediastinum. They are solitary and rarely reach any great size. Steven has reported one case which he regarded as a fibrous tissue tumor of the mediastinum, associated with pronounced rheumatic symptoms. He believed that this was of rheumatic origin and described it as a "malignant fibrosis."

Lipomas are rarely found in the mediastinum. They occur singly, and sometimes may reach an enormous size, as in one case reported by Leopold[1] in which the tumor weighed 17 pounds 6 ounces (7.9 kg). This patient, a man, aged 37, seventeen months before death, began to cough, and to suffer shortness of breath, a sense of oppression beneath the sternum, and wheezing. As the tumor grew, his dyspnea became so alarming that he had to sit upright and to lean forward in order to get any comfort. In the later stages, it was possible for him to sleep only when in the knee-chest position. The cyanosis of his head and neck became very marked, and there was swelling of the lower extremities. Before death the tumor filled about four fifths of the chest.

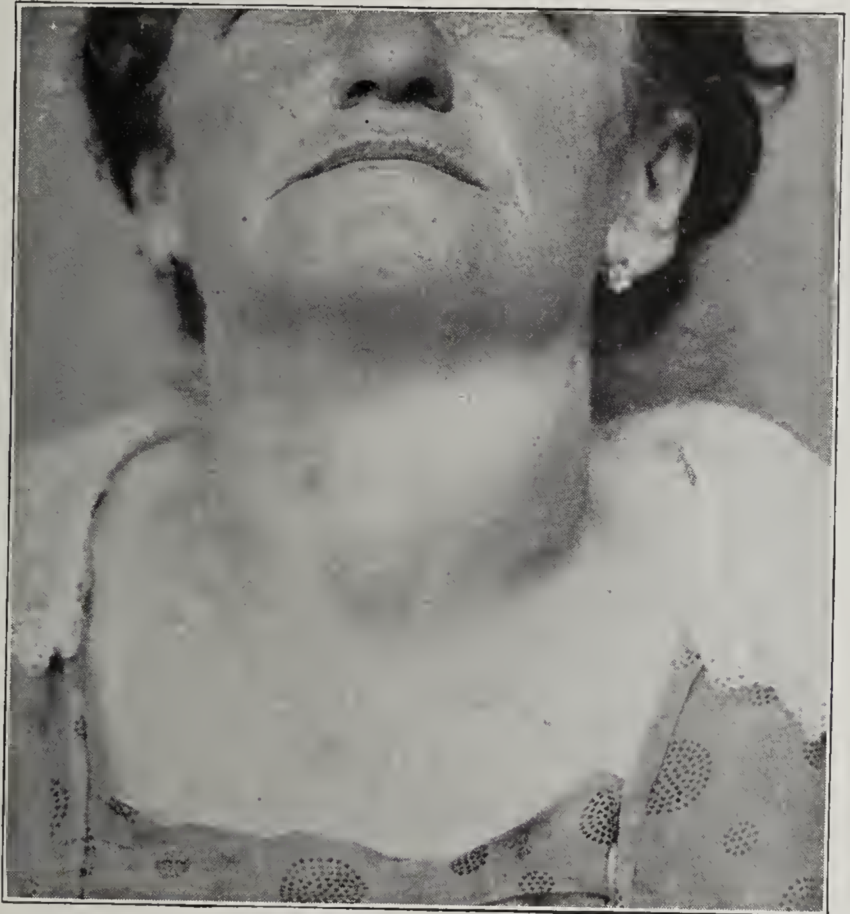

Fig. 2.—Intrathoracic goiter extending well below the clavicle, and causing choking sensations and shortness of breath.

Chondroma and osteochondroma are also of very infrequent occurrence within the mediastinum. They may grow from the under surface of the sternum or costal cartilages, or from the anterior surface of the vertebral column.

Myomas may arise from the muscle tissue of the trachea, the bronchi or the esophagus. Coats[2] has reported one case in which the myoma was pedunculated, and situated within the lumen of the esophagus.

According to the recent literature, different forms of sarcoma—lymphosarcoma, spindle-cell sarcoma and giant-cell or chondrosarcoma—comprise the group of tumors that are most frequently found within the mediastinum. These tumors originate in the loose connective tissue of the mediastinum, in the peribronchial and mediastinal lymph nodes and in the thymus. For some reason they are twice as common in males as in females. Christian has reported the age distribution among one hundred cases of sarcoma of the mediastinum, and his figures are reproduced in the accompanying tabulation.

Secondary sarcoma of the mediastinum may follow the occurrence of sarcoma in the arm, leg or other parts of the body, while primary mediastinal sarcoma may be followed by metastatic nodules in the liver, spleen or kidneys.

Mediastinal carcinoma is usually secondary to carcinoma elsewhere, as in the breast or gastro-intestinal tract, but in rare cases primary carcinoma of the mediastinum occurs, the growth arising from the epithelium of the esophagus, the trachea, the bronchi, the thymus or from a misplaced or accessory thyroid gland (Fig. 1). This form of growth is invasive in character, so that edema, cyanosis and dilatation of the veins indicate the diagnosis of carcinoma rather than of sarcoma.

Simple cysts are of more frequent occurrence within the mediastinum than are dermoid cysts. They are usually small, and are lined with ciliated epithelium. It is usually supposed that they are derived from a fetal misplacement of tissue associated with the development of the esophagus.

The majority of cases produce no symptoms, though Bramwell has reported one case in which an incorrect diagnosis of aneurysm was made.

Among the rarer tumors of the mediastinum are the dermoid cysts and teratomas. Hamann[3] has recently reported a case in a patient who had previously been sent away for treatment for tuberculosis. Ultimately, hairs found in the sputum indicated the correct diagnosis. In these cases the most important symptoms are coughing, pain in the chest, and abundant expectoration, which sometimes contains hairs. Lemon[4] mentions the fact that W. J. Mayo has seen two cases of dermoid cyst of the mediastinum in which the diagnosis was made from the appearance of bits of hair and of teeth in the sputum. Trudeau has seen one similar case. In 50 per cent. of the cases of dermoid cysts, symptoms appear before the age of 20. The cysts vary in size from that of a walnut to a child's head, and in the latter instance may contain as much as 3 liters (quarts) of fluid. The walls of the cyst may contain fragments of bone, of cartilage, of teeth and of gland tissue. Hemoptysis is not uncommon, and the sputum frequently has a foul odor, and often contains fat droplets and cholesterin crystals. In

AGE DISTRIBUTION IN ONE HUNDRED CASES OF SARCOMA OF MEDIASTINUM

Years of Age	Cases
Before 10	9
From 11 to 20	20
From 21 to 30	17
From 31 to 40	18
From 41 to 50	19
From 51 to 60	12
From 61 to 70	4
From 71 to 80	1

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[1] Leopold, R. S.: A Case of Massive Lipoma of the Mediastinum. Arch. Int. Med. **26**: 275 (Sept.) 1920.

[2] Coats: Glasgow M. J. **4**: 201, 1872.

[3] Hamann, L.: M. Clin. N. Am. **1**: 177, 1917.

[4] Lemon, W. S.: M. Clin. N. Am. **3**: 635, 1919.

a few cases, pulmonary tuberculosis is associated with the presence of mediastinal dermoid cysts.

Mediastinal teratomas occur in young adults, the symptoms first manifesting themselves shortly after puberty. These tumors consist of solid masses of tissue containing many small cysts. The latter are lined by a variety of epithelium, while the stroma between them is composed of muscle, fat, cartilage, bone, fibrous tissue and neuroglia. These growths resemble the teratomas which are more commonly found in the ovary and testicle.

Hydatids, gummas and the enlarged lymph glands which arise from Hodgkin's disease, leukemia and tuberculosis may be found in the mediastinum. The tuberculous lymph glands and syphilitic gummas rarely attain a sufficient size to be classified as tumors, while in Hodgkin's disease and in leukemia the lymph glands not infrequently become sufficiently enlarged to be so considered.

Intrathoracic goiter is frequently found in the superior mediastinum. This may be an extension from the lower pole of the lateral lobe or of the isthmus of the thyroid gland, or it may develop from an accessory thyroid gland. In the cases in which it arises from the thyroid itself, a connection can always be traced between the thyroid itself and the intrathoracic goiter, which is identified by its upward and downward movement with deglutition.

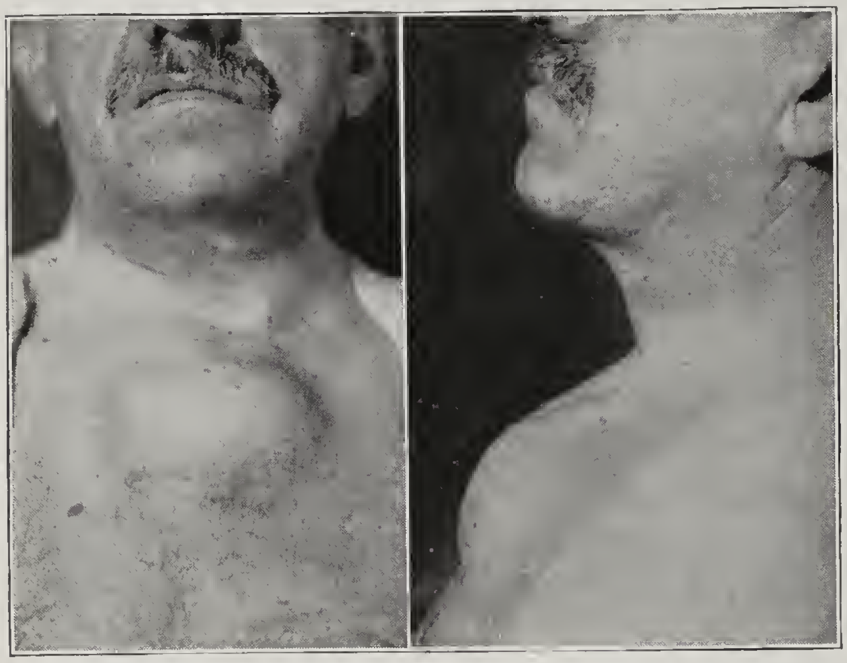

Fig. 3.—Substernal metastatic carcinoma of thyroid.

SYMPTOMS OF MEDIASTINAL TUMORS

The symptoms of a mediastinal tumor are usually of gradual onset. The most important symptom is pain, which may vary from a feeling of pressure to a burning sensation, while in some cases it is of a very distressing or agonizing character. In general, the pain is quite constant, though there are periods of acute exacerbation. In certain cases the pain is localized beneath the sternum, while in others it is felt as a girdle-like sensation, with the greatest tenderness in the axillary line at the points of exit of the intercostal nerves or of their branches. It may be referred to the neck or to the abdomen, or may be felt along the distribution of the brachial plexus. Abnormal sensations may be referred to the throat, simulating the presence of a foreign body; or the act of swallowing may cause pain.

Disturbances in respiration form another important group of symptoms. There may be simply a steadily progressive shortness of breath, but in many instances the tracheal obstruction may cause a well defined inspiratory stridor, which is often accompanied by wheezing. Sometimes, as in the case of an intrathoracic goiter which slips in and out of the superior strait of the thorax, there may be very severe attacks of suffocation, owing to the incarceration of the goiter in the superior strait (Fig. 2). If the phrenic nerve is irritated, hiccup may be present. Because of the interference with respiration, cyanosis is often present; and this, together with the stridulous breathing, has led to the incorrect diagnosis of asthma in many cases of mediastinal tumor.

On account of the difficulty which they have in breathing, many of these patients are obliged to sit up in a chair during the night in order to get any sleep. They are often more comfortable in a leaning forward position or, as in the later stages of the extraordinary case of a large lipoma which has been mentioned above, the patient may have to assume the knee-chest position in order to breathe with any degree of comfort.

Coughing is a constant symptom of mediastinal tumor. In many cases this is an attempt on the part of the patient to get rid of a constant feeling of obstruction; but it may be paroxysmal in character. It frequently has a curious resounding character—the so-called "gander" cough. In many instances the cough is accompanied by hoarseness or loss of voice, which may be due to interference with the recurrent laryngeal nerves. The expectoration as a rule is small in quantity and consists of thin, viscid mucus; but at times it is profuse, mucopurulent or purulent, and if the tumor is a dermoid cyst the expectoration may contain hairs or other characteristic structures. The expectoration is often streaked with blood; or, if the tumor invades the trachea, there may be profuse hemoptysis.

Dysphagia is another important symptom of mediastinal tumor, not only in those cases in which the tumor originates in the esophageal tissue, but also in other cases in which the tumor exerts pressure on the esophagus. Deglutition may be painful and, as the obstruction progresses, a pouchlike dilatation of the esophagus may form about it, with resultant regurgitation of food.

Cardiac and Arterial Symptoms.—Cardiac palpitation and other cardiac disturbances may be caused by pressure on the heart, due to effusion into the pericardium, to obstruction of the pulmonary veins, to compression of the aorta, or to nerve disturbances resulting from involvement of the vagus or of the sympathetic nerves. Anginal attacks may also occur. Depending on which arteries are compressed, there may be inequality of the radial or of the carotid pulse. A case of mediastinal tumor has been recorded in which there was compression of the descending aorta and the inferior vena cava, with gangrene of the extremities. Pressure from a mediastinal tumor may produce an erosion of the aorta with resultant fatal hemorrhage.

Venous obstruction may cause puffiness of the eyes, swelling of the face, neck and arms, headache, dizziness and disturbance of vision, and the patient himself may notice the increasing enlargement of the veins of the upper part of the trunk.

PHYSICAL EXAMINATION

Inspection and palpation yield more information than any other form of examination. A bulging of the chest wall can often be seen at a glance (Fig. 3). There may be an abnormal pulsation which may be due to aneurysm or to a tumor, the pulsation being transmitted to the latter from the aorta. There is often a noticeable tumor extending above the upper border of the manubrium sterni, with enlargement of the glands of the neck and of the axilla. It is important to note whether or not there are any tumors in the breasts or in the superficial tissue of the chest. Distention of the veins, either unilateral or bilateral, should be noted. In extreme cases in which the superior vena cava is obstructed, there are cyanosis and swelling of the face, neck and upper extremities; and the veins of the chest and upper abdomen become enormously enlarged in the attempt to set up a collateral circulation (Figs. 4 and 5). In cases in which a pleuritic effusion is complicating a mediastinal tumor, there is bulging of that side of the chest; while, if a bronchus is obstructed, the afflicted side may be somewhat retracted.

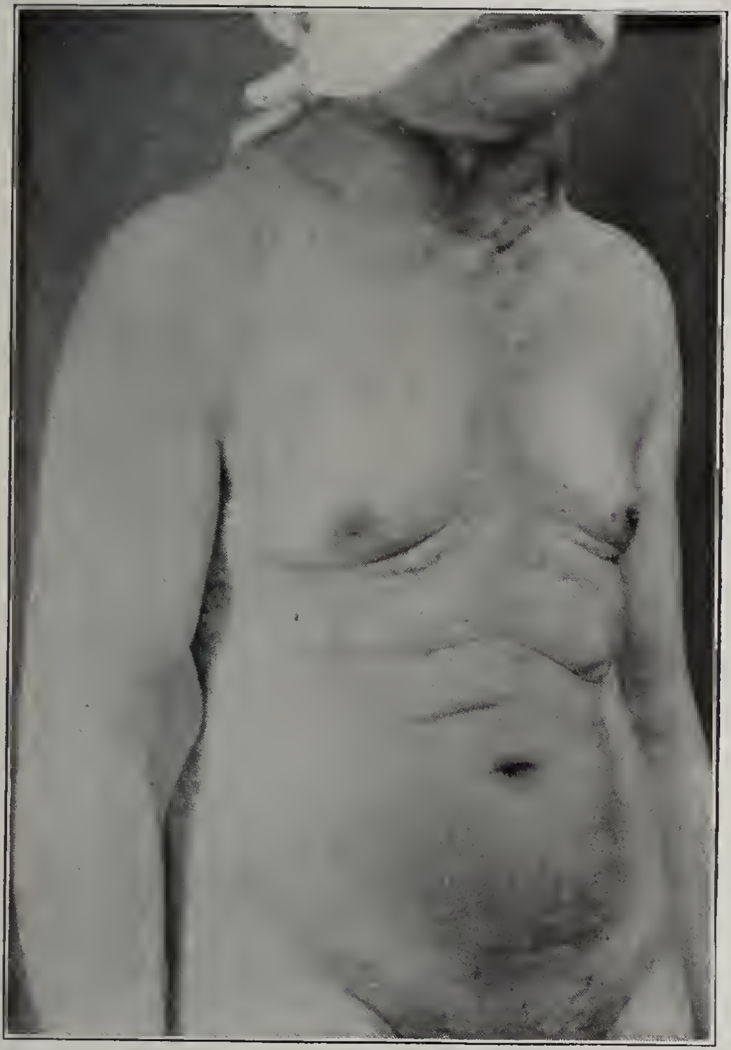

Fig. 4 (Case 6).—Venous thrombosis from obstruction due to intrathoracic goiter.

In some cases the larynx will be found fixed; that is, it no longer ascends and descends with deglutition and respiration. Occasionally a definite tracheal tug can be made out, though this is much more common in the presence of aneurysm than of a mediastinal tumor. In cases of large mediastinal tumors, the pulmonary expansion is much interfered with; for example, when one lung is embarrassed there may be excessive activity of the other. Tracheal obstruction will often cause a depression of the suprasternal, supraclavicular and epigastric regions. In some cases, the breathing is entirely abdominal. In cases in which a bronchus is obstructed or there is an effusion into the pleural sac, the tactile fremitus is much diminished over that part of the chest which corresponds to the involved bronchus or to the site of the fluid in the pleural cavity.

Percussion of the chest in the case of a small tumor or of one situated in the posterior mediastinum may reveal no evidence of its presence. However, in the majority of cases, there will be a dulness in the region of the manubrium sterni which gradually increases with the size of the growth. In the case of a large tumor in the posterior mediastinum, percussion in the region of the dorsal spines may elicit an abnormal sound. If the growth has extended to the lung, if a bronchus is compressed, or if there is an accumulation of fluid in the pleural cavity, the resonance on the corresponding side of the chest will be impaired to varying degrees, the impairment of resonance being increased by the presence of pericardial effusion. Sometimes the relaxation of the lung in the neighborhood of the tumor will produce a hyperresonant or tympanitic note.

The auscultatory signs vary a great deal in different cases. When a tumor is situated in the superior mediastinum, the breath sounds may be intensely tubular or even amphoric in quality. In cases in which the trachea is partially obstructed, the breath sounds may be feeble throughout both sides of the chest, but may be accompanied by a stridor. If one lung is affected, there is a decrease in the breath sounds on the affected side. At times, pleuritic friction sounds may be heard in the neighborhood of the growth. As a rule, the vocal resonance is increased in the region of the tumor. There is often distinct pectoriloquy. Of course, the vocal resonance is diminished in the presence of pleuritic thickening or of pleural effusion.

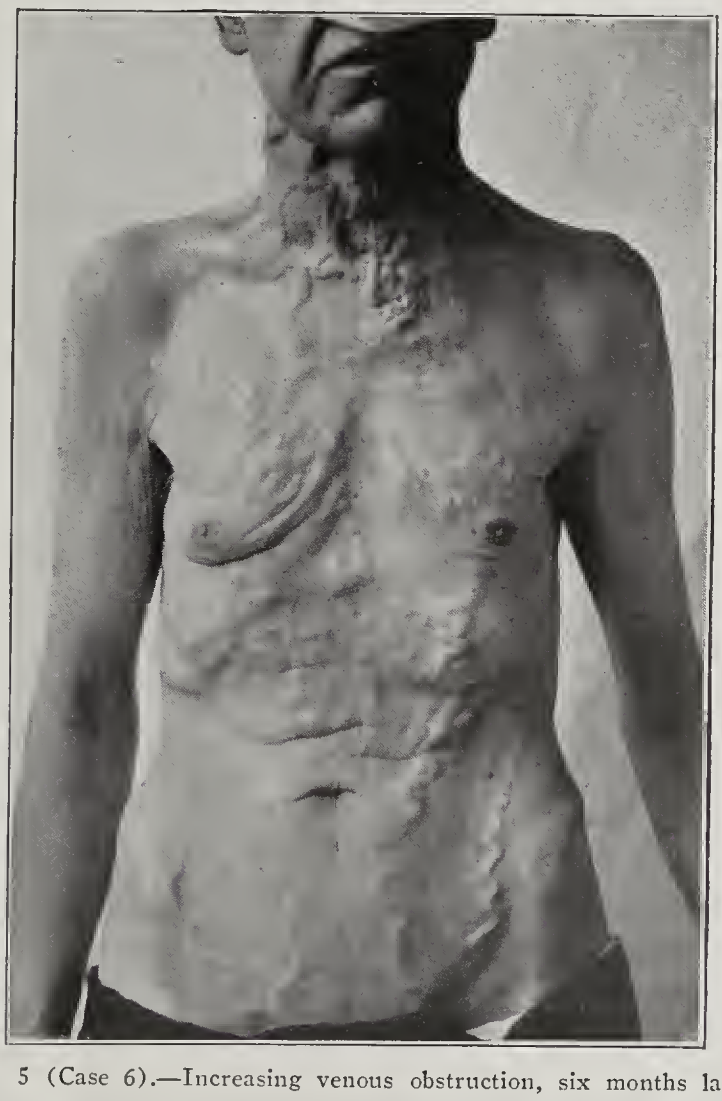

Fig. 5 (Case 6).—Increasing venous obstruction, six months later.

The heart is often displaced, and frequently heart murmurs are heard over the precordium. At times a leathery pericardial friction rub can be heard.

As I have already stated, roentgen-ray examination of the chest, particularly by means of the fluoroscope, has made the diagnosis of diseases of the mediastinum much more exact. In the fluoroscopic examination, it is very important that the mediastinal space be viewed from different angles. The position of the trachea should be carefully observed, as any abnormal variation will indicate a displacement of the mediastinal contents.

Aneurysm usually produces a clear-cut shadow, regular in outline, which appears as a distinct bulging or expansion of the aorta or of the great vessels of the thorax (Fig. 6).

Intrathoracic goiter gives a broad shadow, which is continuous with the shadow in the neck and extends downward into the superior mediastinum, with displacement of the trachea toward the opposite side from that of the lobe from which the goiter has developed (Fig. 7). In some instances, both lobes of the thyroid are enlarged so that the intrathoracic enlargements may appear at different levels, thus producing an S-shaped trachea. In some cases of mediastinal intrathoracic goiter the trachea is compressed from before backward, assuming the shape of a saber sheath. Pulsation is sometimes transmitted from the aorta to the intrathoracic goiter so that it is difficult to distinguish this from an aneurysm. However, the fluoroscope will show the intrathoracic goiter moving upward and downward with deglutition and with respiration, and in the upward movement of deglutition the angle between the growth and the arch of the aorta becomes more obtuse. It should be noted, however, that in the case of a carcinoma of the thyroid gland there may be infiltration of the surrounding tissues with resultant fixation of the goiter.

In cases of mediastinal sarcoma, distinct indications of an irregular involvement of the adjacent structures may be noted, such as a pleural effusion or metastatic deposits in the lung tissue. Tuberculous mediastinitis can often be differentiated from tumors of the mediastinum by its irregular mottled appearance, due to calcification of the lymph glands.

Syphilitic involvement of the mediastinum shows an extreme density of the hilum and mediastinal tissues; and the fact that this is often associated with aortic dilatation or elongation of the aorta serves to substantiate the diagnosis. Further evidence in these cases is, of course, obtainable from the history and the Wassermann reaction.

It may be difficult to differentiate a mediastinal abscess from a tumor, but in the cases in which a mediastinal abscess has developed from disease of the vertebrae, it usually assumes a fusiform character, gradually tapering off toward the diaphragm. Hodgkin's disease will often show large, discrete shadows corresponding to the individual glands, as is often the case with the enlarged glands of leukemia. In the latter case, blood examination serves to clear up the diagnosis. If the roentgenographic shadow of the tumor shows such structures as pieces of bone, or teeth, the presence of a dermoid cyst is established. The presence of an esophageal diverticulum can usually be readily differentiated from a tumor by means of a fluoroscopic examination after barium has been given by mouth.

The laryngoscopic examination often gives us the first clue to the presence of mediastinal pressure by disclosing a paralysis of one of the vocal cords, or by showing evidences of compression of the trachea.

Laboratory examinations may also be of service. For instance, in a case of mediastinal tumor associated with enlarged glands in the supraclavicular space, it is a very easy procedure to remove one of these glands for histologic examination, whereby the diagnosis can be made with certainty. Blood counts are of value, particularly in cases of leukemia. The examination of the sputum in cases with profuse expectoration or with hemoptysis is of value in differentiating the condition from tuberculosis. The finding of teeth and hair in the sputum will serve to clinch the diagnosis in the rare cases of dermoid cysts.

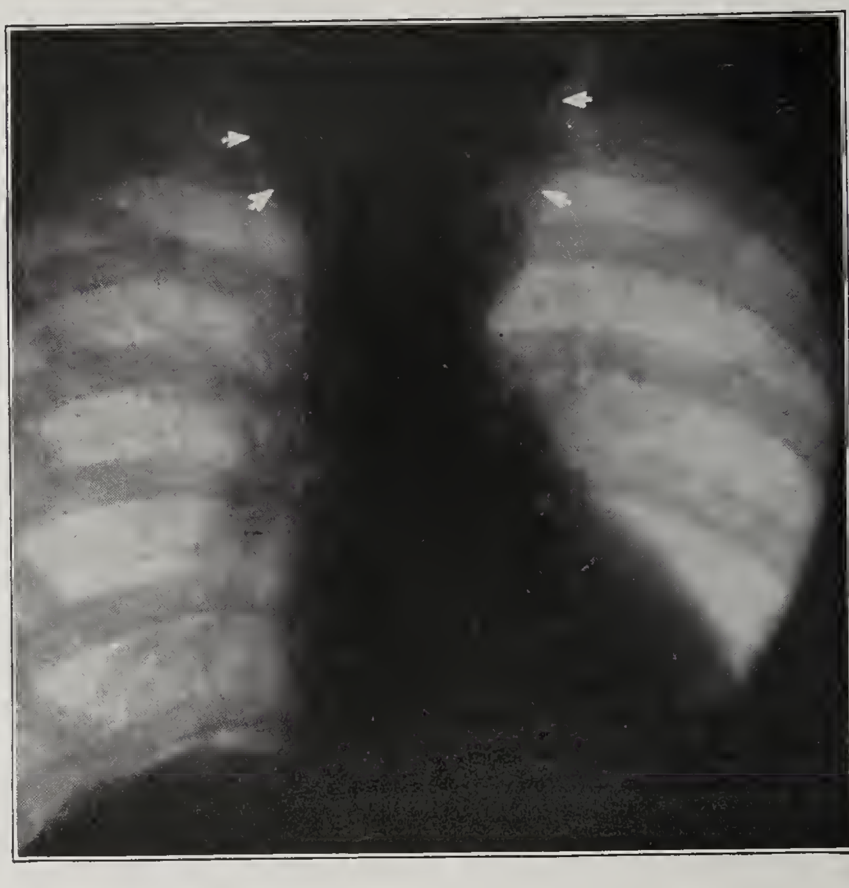
Fig. 6.—Innominate aneurysm.

MEDIASTINITIS

Simple mediastinitis, in which there is a low grade of inflammation of the mediastinal tissues without suppuration, sometimes occurs. The symptoms of which these patients complain consist of fever, pain beneath the sternum, and occasional coughing. The physical examination gives no very positive findings. Sometimes crepitations can be heard along the border of the sternum. The condition usually runs a mild and comparatively short course.

Suppurative mediastinitis is always a serious disease. It is most commonly associated with tuberculous disease of the lymphatic glands. It may also be the result of injury, such as gunshot wounds; or of ulceration of the esophagus produced by the presence of foreign bodies, such as artificial teeth, or coins. It may be due to inflammatory conditions of the sternum or of the spine; or it may be secondary to an inflammatory condition in the neck, such as a retropharyngeal abscess, a suppurating thyroid, or a suppurating thymus, the inflammation spreading from the cellular tissues to the mediastinum. Again, there are cases that are the result of a general infection, such as erysipelas and pyemia, or the inflammation of the mediastinum may be an extension from an inflammatory condition of the lungs or pleural cavity. Abscesses of the mediastinum may rupture into the esophagus, pericardium, pleura, lung, trachea or bronchus. Cases are recorded in which an abscess has ruptured into the arch of the aorta, with resultant fatal hemorrhage. The chief symptoms of suppurative mediastinitis are fever, which has a tendency to assume a hectic type, sweating, local pains, and a gradually increasing shortness of breath. All the pressure symptoms which have been previously described may be present. As the disease progresses, there is marked anemia, and wasting. The majority of these cases are fatal, though in some instances the pus may make its way to the surface wtih ultimate recovery. Should the abscess rupture into the trachea or bronchus, a large quantity of pus may be coughed up, or death may speedily result from suffocation.

Tuberculous Mediastinitis. — Tuberculosis may involve any of the groups of the mediastinal glands, but the tracheal and bronchial glands are most frequently affected. Involvement of the intrathoracic glands usually results from the extension of an infection from the neighboring structures, especially the lung or the pleura, and occasionally from bone. The tuberculous process may extend directly from the glands of the neck or from those in the abdomen along the lymphatics through the diaphragm. The condition sometimes follows an acute infection, such as whooping cough. It is more common in children than in adults. The glands have a tendency to become caseous with the formation of pus, this being a common origin of chronic abscesses within the mediastinum. They may perforate into the aorta or pulmonic artery, causing fatal hemorrhage; or they may ulcerate into the trachea or into the thoracic duct, in which case acute miliary tuberculosis may result.

The symptoms of tuberculous mediastinitis are fever, wasting, anemia, night sweats, and loss of appetite; more or less disturbance in breathing, which sometimes simulates spasmodic asthma; and coughing, which may be spasmodic with a croupy quality, or may occur in paroxyms resembling the paroxyms of whooping cough. If the glands should ulcerate into the trachea, the patient may cough up purulent or caseous material. In some of the chronic cases, even calcareous particles may be expectorated. Physical examination discloses marked dulness over the sternum, particularly in cases of tuberculosis of the anterior mediastinal glands. Eustace Smith has described in children a venous hum which is audible at the root of the neck when the head is thrown back. This he attributes to pressure by the enlarged glands over the venous trunks. The pressure of the enlarged glands can be best diagnosed by stereoscopic roentgenograms of the chest.

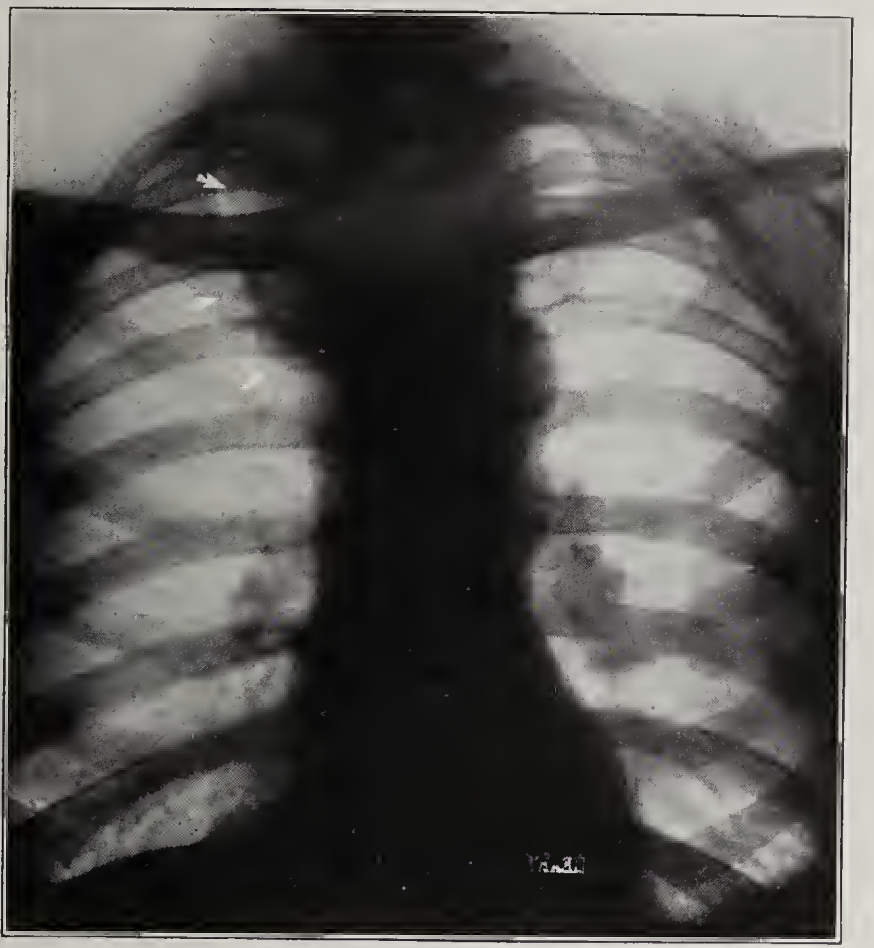
Fig. 7.—Intrathoracic goiter; outline indicated by arrows.

Mediastinal emphysema may occasionally result from inflammatory conditions in the mediastinum, the air gaining access into the mediastinum from a perforation of the trachea or bronchus, or making its way from the neck beneath the deep cervical fascia. In some instances the air may extend through the cellular tissue of the neck or over the front of the chest, and give rise to an extensive subcutaneous emphysema.

ILLUSTRATIVE CASE HISTORIES

Case 1.—*Mediastinal tumor from Hodgkin's disease.* A woman, aged 23, referred by Dr. W. A. Parks of Akron, Ohio, about two months before had begun to have a quite severe cough with very little expectoration. There had been no fever until within the preceding two days, when her temperature had ranged between 99 and 100 F. She had experienced some loss in weight and strength, and a few days before an enlarged gland, situated just above the clavicle, had been removed for examination. Microscopically, the gland showed the characteristic appearance of Hodgkin's disease: an increase in endothelioid cells, and the presence of giant cells and a large number of eosinophil cells.

The physical examination was negative except for the scar just above the clavicle resulting from the removal of the gland for examination. There was quite marked dulness in the second left interspace extending to about 3 cm. beyond the sternal border; over this area the breath sounds were bronchial in character, but there were no râles. The patient showed no glandular enlargement except that the epitrochlear gland on each side could be quite readily palpated.

Roentgen-ray examination revealed a mass about the size of an orange in the superior mediastinum. This was rounded, with quite regular outlines, and there seemed to be no inflammation. Under radium treatment this mediastinal enlargement gradually disappeared. In all, four separate treatments were given, extending over a period of about seven weeks.

Case 2.—*Hodgkin's disease associated with enlarged glands in the mediastinum and hydrothorax on the right side.* A man, aged 30, seen by me, Sept. 19, 1920, complained chiefly of swelling of the glands of the neck, the axilla and the groin, with gradually increasing weakness and loss of strength. He had first noted loss of appetite and weight about four months earlier, before which time he had been extremely stout, weighing 205 pounds (93 kg.). At the time of this consultation, his weight was only 135 pounds (61 kg.). About eight weeks before he noticed that the glands of his neck were enlarged as well as the other superficial glands throughout the body. He had had a slight elevation of temperature, varying from 99 to 100.

The patient was somewhat pale, with enlargement of the glands below the angle of the jaw and in the posterior triangle of the neck. These varied from the size of a pea to that of a hickorynut. They were hard, discrete and freely movable, and showed no tendency to suppurate. There was a similar enlargement of the glands in the axilla and groin. The epitrochlear glands were not enlarged. Examination of the chest revealed the presence of considerable fluid at the base of the right lung. The patient reported that within the last two weeks he had been tapped three times, about 1 quart (liter) of fluid having been removed in the first two tappings, and more than 2 quarts in the last. This fluid was clear and straw colored. The patient showed marked dulness to the left of the manubrium sterni, extending about 2 inches (5 cm.) beyond its border in the second interspace. These findings were confirmed by roentgen-ray examination.

Case 3.—*Recurrent carcinoma in the mediastinum following carcinoma of the breast.* A woman, aged 60, first seen by me, April 1, 1915, having been referred to me for diagnosis by Dr. Lenker, who had found a paralysis of the left vocal cord, seven years before had had the right breast removed for carcinoma. One year before, a small tumor had been removed from the sternum. Four months before, the patient had had an attack of pleurisy which lasted about a week, shortly after which she had noticed a change in her voice, which had progressed to such a degree that it was difficult for her to speak above a whisper. At this time paralysis of the left vocal cord had been found.

The patient had a very troublesome cough, and reported that she had always had some shortness of breath. A roentgen-ray examination in February, 1915, had disclosed a tumor mass just above the bifurcation of the trachea.

Physical examination disclosed nothing of importance except that beneath the manubrium sterni there was a marked dulness which extended somewhat laterally on either side. The tumor mass beneath the sternum gradually increased in size, the cough become worse, the patient lost quite rapidly in weight, and her breathing became very labored. Finally, the tumor increased in size to such an extent that it became impossible for the patient to lie down, so that she usually maintained a sitting position in bed with a tendency to lean forward. She died six months later.

Case 4.—*Mediastinal and pulmonary tumor, with compression of the superior vena cava.* A man, aged 47, seen one year ago, complained of pain in the left side of the chest and of an irritating cough unaccompanied by any expectoration; of swelling of the face on the right side, and of distention of the veins of the neck and upper part of the chest.

Physical examination disclosed some puffiness of the right side of the face and of the tissue beneath the right eye. The veins of the neck and upper part of the chest were prominent and dilated. Examination of the chest disclosed poor expansion at the base of the right lung, and over all this area there was marked dulness with diminished breath sounds. A hard mass about the size of an English walnut could be felt above the right clavicle, and there was some enlargement of the glands of the axilla and right groin. There was evidence of the presence of a considerable amount of fluid in the right pleural cavity.

From these findings the condition was diagnosed as due to a mediastinal tumor extending into the right lung. This diagnosis was confirmed by a roentgen-ray examination. No evidence of the presence of a tumor elsewhere in the body could be found.

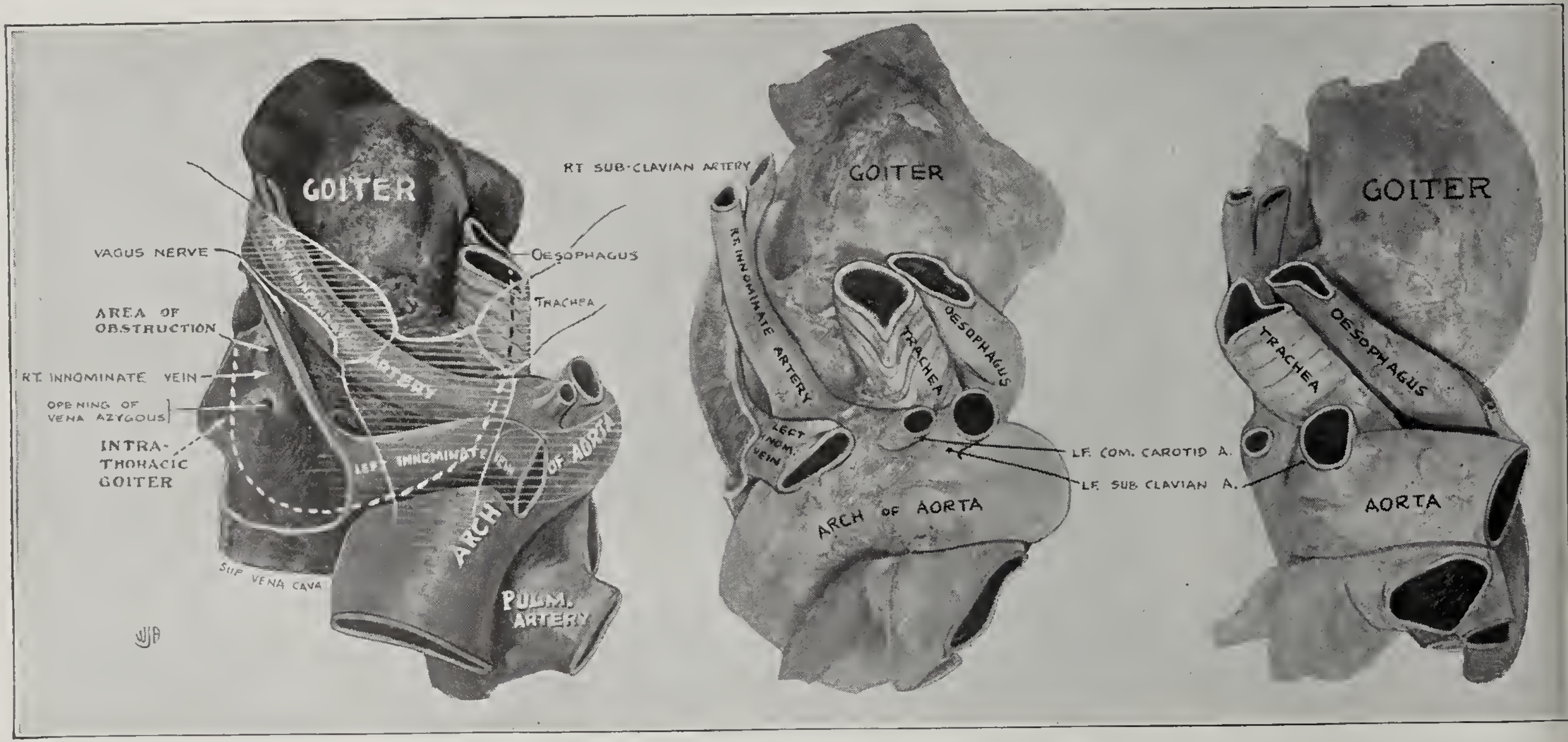

Fig. 8 (Case 6).—Necropsy specimen from patient with intrathoracic goiter shown in Figures 4 and 5.

Case 5.—*Tuberculous mediastinitis with rapid improvement from radium therapy.* A woman, aged 18, consulted me, April 15, 1921, because of very marked shortness of breath with which she had been troubled for the preceding eight months, and which was steadily growing worse, until at this time it was so severe that it was impossible for her to lie down. In addition, she complained of a constant cough, occasional slight hemoptysis, night sweats and fever.

Physical examination disclosed the presence of enlarged glands just above the inner ends of both clavicles, and dulness both to the right and to the left of the manubrium sterni extending on either side for about 3 cm. There was increased bronchial breathing over this area. The trachea was pushed to the right. Roentgen-ray examination disclosed a mass of about the size of a grapefruit in the superior mediastinum. This mass semed quite dense, with quite regular outlines and definitely circumscribed. A gland, removed for examination, showed a chronic inflammatory condition of tuberculous nature. The patient was given six radium treatments, extending over a period of fourteen weeks, during which time the mass in the mediastinum disappeared. Within about one week after the first treatment she was so much relieved that her sleep was undisturbed.

Case 6.—*Intrathoracic goiter.* A man, aged 62, seen March 7, 1921, had always been well until ten years before, when his face began to swell, his lips and face became cyanosed, and the veins over his body, particularly over the chest and neck, were very much distended (Fig. 4). The patient had never been very short of breath, and had never had any choking spells. He had noticed for at least ten years that he had a goiter, but he had never been troubled with palpitation of the heart, and had only occasionally noticed a shaking of the hands.

Examination disclosed a well-marked cyanosis of the face and hands, particularly of the lips. The eyes showed a moderate exophthalmos, with some slight lagging of the upper lid on looking downward, and increased widening of the palpebral fissue. There was no ocular palsy. There was an enlargement of the thyroid gland, particularly of the right lobe, which contained a hard, firm, adenomatous nodule about the size of a hen's egg. There was also a similar nodule in the isthmus about the size of a hickory-nut. The jugular veins were very much distended, and there was extreme distention of the veins over the chest and anterolateral portions of the abdomen.

The examination of the chest disclosed diminished expansion of the base of the right lung. There was increased tactile fremitus at the apex of the right lung in front and behind, while at the base of the right lung, from the angle of the scapula downward, the tactile fremitus was absent. The tactile fremitus over the left lung was normal. There was more or less impairment of resonance all over the right side of the chest, with dulness over the base of the right lung from the level of the angle of the scapula downward. There was also extensive impairment of resonance in the first, second and third interspaces below the clavicle. Over the latter area the breath sounds were bronchial in character, and a few coarse râles could be heard. Over the base of the right lung posteriorly there was almost complete absence of breath sounds.

The heart was enlarged in both diameters, with a systolic murmur at the apex. The pulse was somewhat irregular, arrhythmic, and the rate was 100; the systolic blood pressure was 126; diastolic, 76. The liver edge could be easily felt, and there was edema of the lower extremities. The Wassermann reaction was negative. The urine showed a trace of albumin and some granular casts. The blood count revealed red blood cells 4,290,000, white blood cells, 6,400, and hemoglobin, 80 per cent. The differential count revealed: polymorphonuclear neutrophils, 60 per cent.; small lymphocytes, 32 per cent.; large lymphocytes, 2.5 per cent., and transitionals, 5.5 per cent. The blood chemistry revealed: blood urea, 29 mg. per hundred cubic centimeters; blood sugar, 112 mg., and blood chlorids, 580 mg.

Fluoroscopic examination of the chest revealed a homogeneous shadow occupying the entire upper lobe of the right lung. The aortic arch was prominent. The trachea was not displaced. The mass was definitely connected with the mediastinum and pulsated, but not with the expansile pulsations characteristic of aneurysm. On deep respiration and deglutition the shadow did not separate from the aortic shadow.

The oblique view was of no aid in determining the character of the mass. The entire lower lobe of the lung was consolidated, having an irregular upper border with a dense base, the picture indicating fluid in the base with an inflammatory process above. The middle lobe of the lung was free from involvement. The heart was apparently normal in shape and position, but somewhat increased in size. From the fluoroscopic findings, the diagnosis was probable aneurysm. Roentgenograms of the chest confirmed the fluoroscopic findings, with the exception that a rather indistinct regular shadow could be seen within the homogeneous mass. This was interpreted as a probable saccular aneurysm with syphilitic involvement of the rest of the lung.

In addition to this, the diagnosis included adenoma of the thyroid, chronic myocarditis with beginning decompensation, and hydrothorax with infiltration at the base of the right lung.

The patient was advised to rest, and 15 minims (1 c.c.) of tincture of digitalis with 5 grains (0.3 gm.) of sodium iodid three times a day were prescribed. We expected him to return in two weeks for further observation, but he did not return until September 12. He had been taking the iodid regularly, and had lost 40 pounds (18 kg.); the edema of the extremities had disappeared, and the cyanosis was somewhat decreased (Fig. 5). His pulse rate, however, had increased to 120. He showed a marked tremor of the hands, his skin was very moist, and he had been troubled with diarrhea.

Examination of the chest revealed that there was some diminution in the area of dulness below the clavicle on the right side. The signs of fluid at the base of the right lung had disappeared. Roentgen-ray examination of the chest at this time, plates giving anterior, posterior and oblique views being taken, revealed quite a contrast to the picture taken at the first examination. All the inflammatory involvement of the upper lobe had disappeared, except for a dense, thickened pleura between the upper and the middle lobes extending to the periphery of the lung. The shadow, which was seen within the mass at the first examination, in these plates appears distinct and clear, and in the oblique view is seen to be continuous with a goiter shadow in the neck, and separated from the aorta.

There is very little doubt that the development of the symptoms of hyperthyroidism was due to the long-continued administration of sodium iodid, because in the preceding month, since the iodid had been discontinued, the patient had begun to gain in weight, the tremor of the hands was less, and he was not so conscious of the palpitation of the heart.

On the sudden death of this patient, shortly after his last visit, there was at necropsy a marked hyperplasia of both lobes of the thyroid gland and of the isthmus, with an intrathoracic goiter about the size of a small orange, extending from the lower pole of the right lateral lobe. This was covered by a thick capsule, which was adherent to the posterior and inner portion of the right apex of the lung, to the right vagus nerve, and to the right subclavian and innominate veins. The right innominate vein was almost completely obliterated by fibrosis, doubtless resulting from the organization of a thrombus (Fig. 8).

These necropsy findings justified our previous conclusion that the enlargement of the veins of the trunk and neck were the result of obstruction of the venous return to the heart through the superior vena cava.

The outstanding subjective symptoms of intrathoracic goiter are, therefore, as one would expect, the mechanical result of the position and degree of enlargement in the individual case.

SUMMARY

To promote greater assurance in the differential diagnosis of the different forms of mediastinal disease, an accurate knowledge of the anatomy of the mediastinum and the physiology of its structures is of primary importance for the proper relation thereto of the signs and symptoms which are presented by the individual case.

For the establishment of the diagnosis, the resources of the clinical and roentgenologic laboratories should be called into service, their findings being added to those of a painstaking physical examination and searching anamnesis.

It is only by relating the general characteristics of the various types of diseases which may invade the mediastinum to all the clinical findings in the individual case that an accurate diagnosis may be established.

Cleveland Clinic, Euclid Avenue at Ninety-third Street.

MADURA FOOT, MORE PROPERLY CALLED MYCETOMA

GUSTAV A. PAGENSTECHER, M.D.
SAN ANTONIO, TEXAS

The first of the two cases here reported is a very early form of mycetoma, involving a foot which shows early bone changes, with a later and more pronounced soft tissue involvement.

Case 1.—A man, aged 54, married, with four children, all living and healthy, a laborer, whose work consisted chiefly of picking cotton and pick-and-shovel work, first noticed a gradual swelling of his right foot four years before I saw him, which was caused, he said, by a log falling on his foot. From that day there had been a gradual swelling, which had been characterized by absence of pain until four months before. The patient was healthy and very well developed, and the general physical examination was negative. The right foot was enlarged to one and one-half times the normal size, the enlargement being confined chiefly to the dorsum of the foot. The swelling began at the junction of the leg and foot, and extended downward to and including the proximal portion of the great and first toes.

The skin showed a brawny and nodular induration, studded with numerous healed-over sinus openings. The patient stated that the multiple blind sinuses opened and exuded a small quantity of yellow material and spontaneously closed. When a portion of the epidermis covering the sinuses was removed, a yellow seropus exuded. Microscopic examination of the seropus revealed light yellow bodies, insoluble in acetic acid and potash, 1 mm. in diameter, showing a central body with branching mycelial threads.

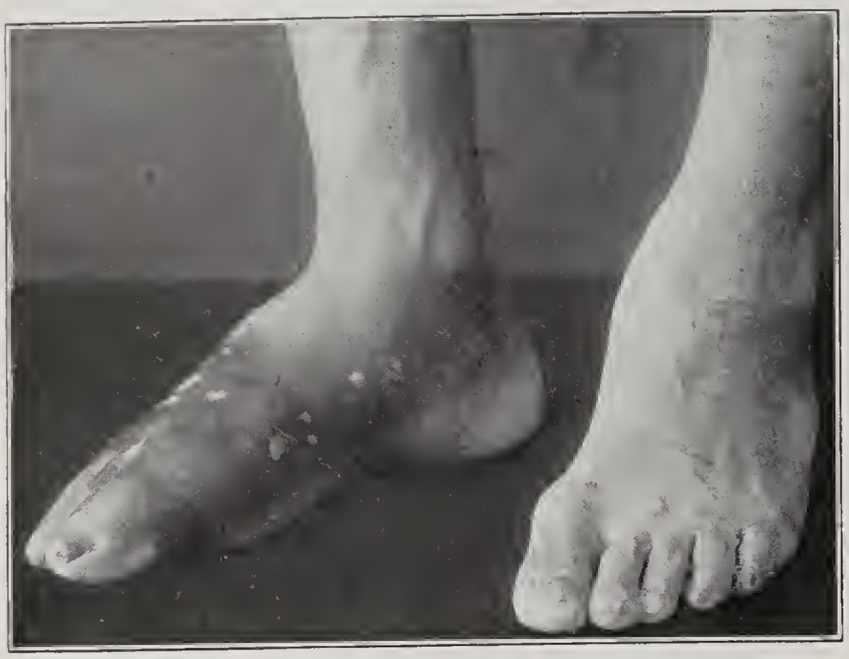

Fig. 1. (Case 1).—Slight hypertrophy of involved foot, showing sealed over sinus opening surmounting the characteristic nodules.

The patient was held under observation for two weeks, during which time he manifested no temperature reaction. The blood pressure was: systolic, 130; diastolic, 80. The Wassermann reaction was negative; blood count revealed 4,200,000 red blood cells; hemoglobin, 90 per cent.; white blood cells, 8,000; polymorphonuclears, 61 per cent.; small lymphocytes, 42 per cent.; large lymphocytes, 3 per cent.; transitional cells, 4 per cent.

Roentgen-ray examination revealed a rarefactive and productive osteitis confined chiefly to the metatarsal and phalangeal bones of the great toe. The metatarsal bone of the second toe presented a healed fracture with fair position and slight excess callous formation.

The second case was a much further advanced form of mycetoma, the involvement in this case not being confined to the foot but extending to the ankle and the distal portion of the tibia and fibula.

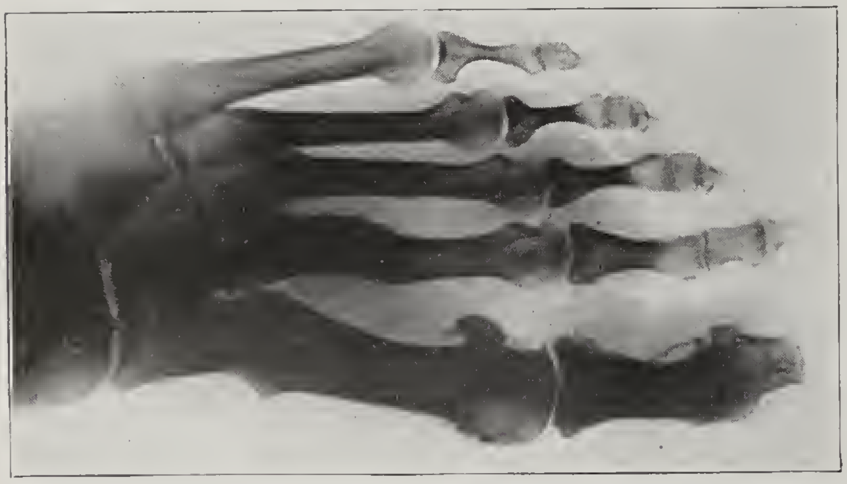

Fig. 2 (Case 1).—An early stage of rarefactive and productive osteitis confined to the metatarsal and phalangeal bones of the great toe. The metatarsal bone of the second toe presents a healed fracture with clear position and slight excess callous formation.

Case 2.—A man, aged 47, whose father died at 80 and had always been healthy, whose mother was living at 60 in good health, and whose only sister was also living, in good health, at 45, had chickenpox when a boy, but no other infantile disorder. Later he had a "fever" (probably typhoid), which lasted about two weeks, from which he made an uneventful recovery. Ten years before I saw him he contracted gonorrhea, from which he recovered in a little more than a month. There was no history of syphilis, tuberculosis, alcoholism or drug habit.

The patient remembered that about seventeen years before, while bathing, he jumped into the river and struck a brick with the plantar aspect of the right foot. The blow was extremely painful, but he was afterward able to go on with his ordinary work as a laborer. He noticed that soon after he received this injury there appeared a small nodule on the sole of the foot, which finally opened and began to discharge a semiliquid material of a puslike character. About three years before I saw him, a heavy board accidentally fell on the same foot and over the injured dorsal area; there appeared a similar nodule, which opened and discharged, as did the nodule on the sole of the foot. Following the appearance of these two nodules there appeared similar nodules with their accompanying sinus orifices, distributed chiefly over the dorsal and plantar aspects of the foot; also, several appeared on the ankle and lower third of the leg. The enlargement or swelling of the foot had been gradual, but had produced no constitutional disturbances, as the general health of the patient had continued good in every particular.

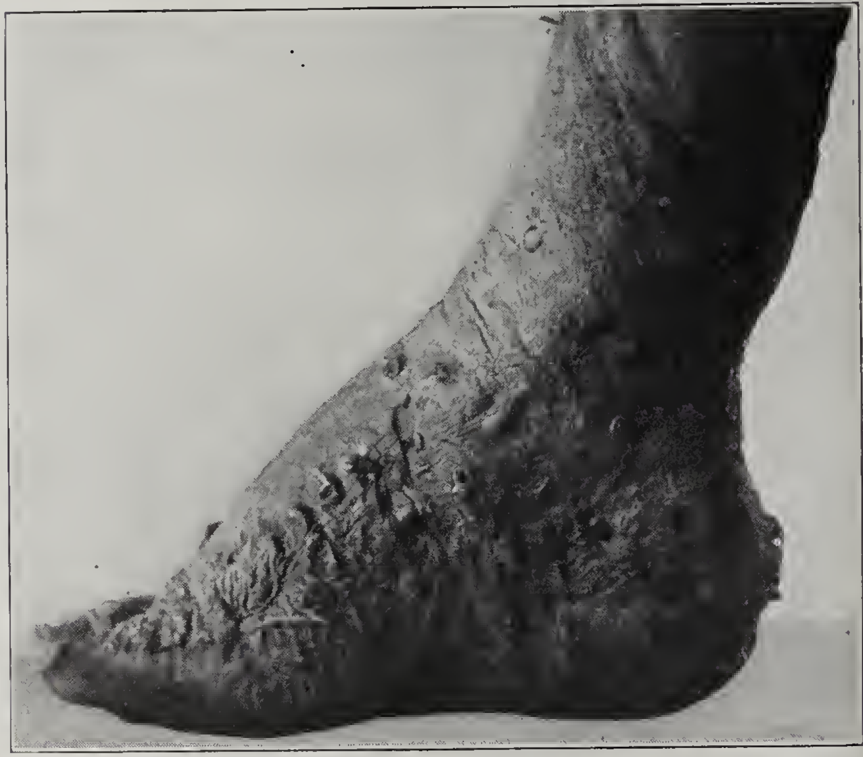

Fig. 3 (Case 2).—Amputated foot, showing marked hypertrophy of the dorsum of the foot and the lower leg. The nodules in this case extended up as high as the lower third of the leg.

The patient presented the general characteristics of the true Mexican race: small stature, 5 feet 1½ inches (155 cm.); black, glossy, straight hair; dark eyes; prominent malar bones; scanty, stiff moustache; dark, or better, perhaps, bronze skin. The patient was well built and, barring his disease, there were no physical defects of the body. The gums were somewhat congested, but not to a point of an active gingivitis; there was some pyorrhea; the insertion of the two right upper incisors was defective, the first, especially, being back of its normal position. The right foot and ankle were enlarged to twice the normal size; the surface of the dorsum and plantar aspects presented nodules varying in size from that of a pinhead to that of a pea. The nodules were surmounted by pouting sinus orifices from which exuded the characteristic discharge containing yellowish granules. A probe easily passed, without pain, from the dorsal to the plantar aspect of the foot through many of the sinuses. There was an atrophy of the leg and some discoloration of its skin. The reflexes, except those of the diseased leg, were normal; there they were notably diminished.

Microscopic examination of the granules treated with dilute acetic acid revealed several bodies consisting of a small mass of closely matted filaments taking an oval shape, about which there were a number of clubs arranged in a radial manner. At the periphery of the granules some of the clubs appeared branching and taking a fan-shaped arrangement.

The patient was held under observation for about three weeks, during which time he manifested no temperature reaction. The blood pressure was normal; the Wassermann reaction, negative; the red and white count, normal; hemoglobin, 80 per cent.

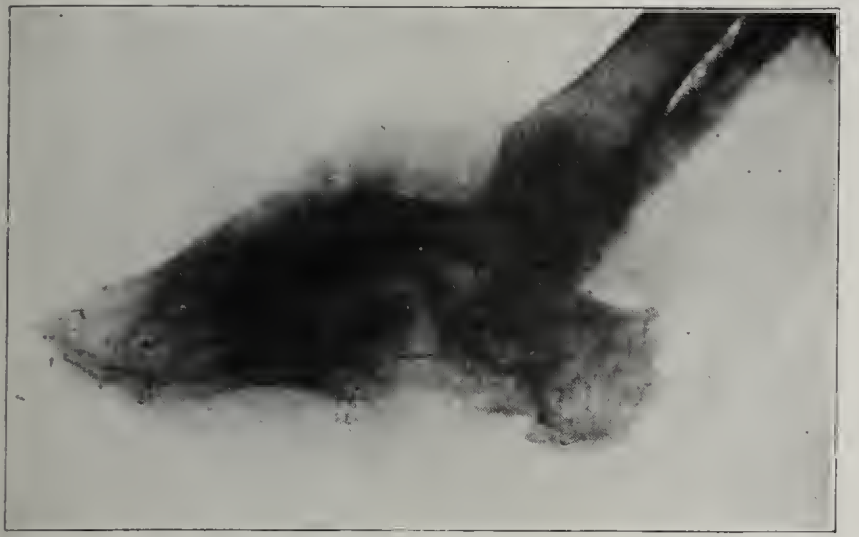

Fig. 4 (Case 2).—A very late stage of rarefactive and productive osteitis of all the bones of the foot and the distal end of the tibia and fibula.

Roentgen-ray examination revealed a rarefactive and productive osteitis confined to the lower end of the tibia, fibula and tarsal, metatarsal and phalangeal bones of the foot.

Sagittal section of the amputated leg and foot revealed the characteristic pathology of this disease: the soft parts, muscles, fascia, tendons, nerves and blood vessels had been displaced by granulation tissues, and only of late had there been destruction of bone.

NATURE OF MYCETOMA

These two cases are characteristic of typical Madura foot, or mycetoma. The history of the injury is clear in each instance, both patients being laborers and forced to make their living by manual means, closely associated with the soil, going barefooted a great deal while at work.

Both cases showed the pathognomonic granules insoluble in acetic acid, containing central clumps of closely matted mycelial threads. Jutting from the periphery of the granules were branched segmented mycelial threads containing what could be easily interpreted as a nucleus. This fact clearly demonstrates that the mycelial bodies are vegetative in character.

Madura foot is a chronic disease, as has been clearly demonstrated by the two foregoing cases. The first patient dates the onset of his illness to an injury received about four years previous. He has been able to work and still does light work. He has occasional pains, which he notices mostly at night, but is able to walk unassisted and without much inconvenience. The second patient dates the onset of his illness about seventeen years previous. When the patient was admitted to the hospital he was able to walk unassisted, although he complained of pain in his foot which prevented him from doing heavy work.

The treatment is essentially surgical. Only when the extremity is in such a condition that the patient is unable to get about in any manner do I recommend amputation. Since the disease does not metastasize by blood or lymph but only by slow, direct extension, the patient may easily outlive the course of his disease. Some authorities treat this disease by the administration of massive doses of potassium iodid, basing their therapy on the close similarity of Madura foot to actinomycosis. Other authorities treat by curetting the sinuses in conjunction with the administration of arsphenamin.

In the differential diagnosis of Madura foot, one has to exclude actinomycosis, tuberculosis, syphilis and sarcoma.

Actinomycosis rarely attacks the foot, being more likely to become a generalized infection; it is not so chronic, and a cure may be obtained.

In tuberculosis there may be a temperature reaction, bone destruction and quantities of pus escaping from the sinuses.

In syphilis, with comparatively as much involvement, a positive Wasserman reaction would be expected.

In carcoma, with the exception of the large round cell type, so commonly found in bone cysts, the growth would be more rapid and more extensive and probably have metastatic involvements.

Central Trust Building.

ERYTHEMA BULLOSUM

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Erythema bullosum is a rare type of erythema multiforme in which the exudation is so rapid and extreme as to cause bullae in addition to the edema which occurs in some of the more common forms.

I have had opportunity to study closely five patients suffering from a severe form of erythema bullosum, three of whom were desperately ill. For the sake of brevity I will detail only the salient points in each case.

Case 1.—A well nourished man, aged about 50, of good social status, was seen on the fifth day following the appearance of the eruption. At this time it was generalized and chiefly bullous and vesicular, some of the bullae reaching the size of a quarter dollar. The bullae appeared on an inflammatory base. Some were tense, containing a clear, serous exudate; others were flaccid, part of the content apparently having found exit. The patient was acutely ill, the temperature being 101.6 F., and the pulse, 118. On account of lesions present in the mouth, he could take practically nothing but fluids, and even these occasioned considerable distress.

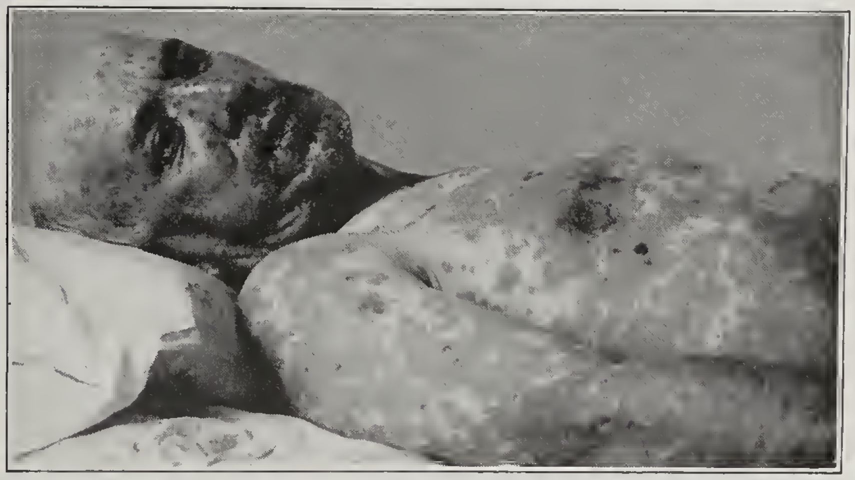

Fig. 1 (Case 3).—Circinate, ringlike, erythematous patches, a few of which are just becoming bullous; intense involvement around mouth.

The outstanding etiologic possibility in this case was a severe pyorrhea alveolaris.

Treatment consisted chiefly in alkalizing the patient by sodium citrate by mouth and by proctoclysis of sodium bicarbonate solution containing sodium salicylate. Recovery occurred in about ten days.

Case 2.—A negro, aged 22, seen at Camp Zachary Taylor in Kentucky in 1918, arrived at our camp from Camp Dodge, Iowa, with a vesicular and bullous skin eruption. He had been receiving routine treatment for syphilis. When I first saw him in the ward (which at that time was cubicled on account of influenza, according to orders from the Surgeon General's Office), the impression was obtained of an unusual exudative syphilis, which is seen occasionally in the colored race, or a pemphigus vulgaris. The eruption was widely distributed, especially over the extensor surfaces, and also involved the mouth so that even fluids could not be imbibed. The patient was extremely ill, and a "critical telegram" was sent to his parents. His temperature reached above 104 F., which, however, in a negro is not an extraordinary febrile reaction. Bullae from the diameter of a nickel to that of a fifty-cent piece were scattered widely over the entire integument, especially on the forearms below the elbows, and the legs below the knees. The contents varied from an ordinary clear, serous exudate through all gradations to a distinctly hemorrhagic exudate.

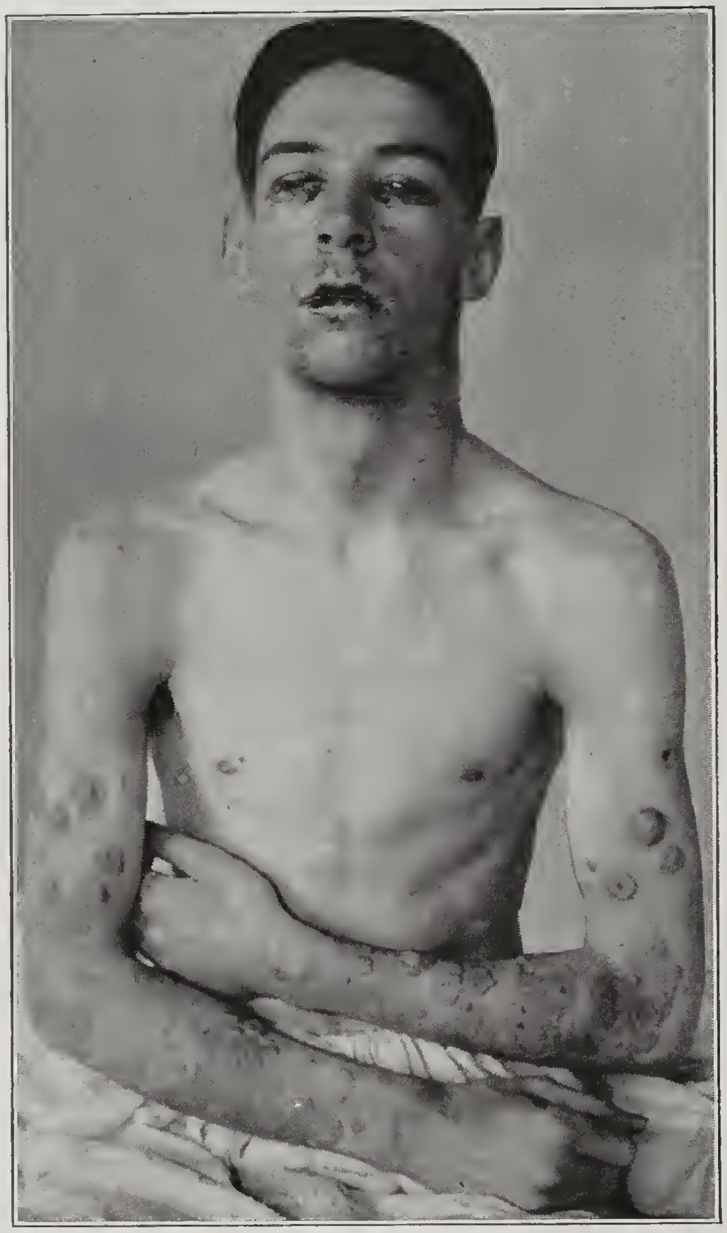

Fig. 2 (Case 4).—Involvement of extensor surfaces of both forearms with large, well defined, circinate and bullous lesions; marked involvement about mouth and eyes.

A careful history and examination later in a well lighted room revealed the fact that the bullae appeared on a distinctly inflammatory base. Blood cultures were made and a white staphylococcus was obtained. We thought, however, that this might have been a contamination and repeated the examination, which yielded a sterile set of tubes. Positive blood culture reports appear not infrequently in the literature of erythema bullosum.

This patient became distinctly worse after an injection of 1½ grains (0.1 gm.) of mercuric salicylate in oil injected into the buttocks. It will be noted that he had received intensive arsphenamin and mercurial treatment at Camp Dodge, and was immediately hospitalized on his appearance at Camp Taylor. Careful examination failed to reveal any focal infection as causal in this case. There are several reports in the literature in which toxic substances of various groups, e. g., coal tar derivatives, potassium iodid and copaiba are held as etiologic factors in certain cases of erythema bullosa. My belief is that in this case mercury was the substance which occasioned the outbreak of the dermatosis. The patient was alkalized by proctoclysis as in the previous case. After seventy-four hours he was able to drink liquids, and large dosage of sodium bicarbonate and sodium salicylate were continued until complete recovery was obtained.

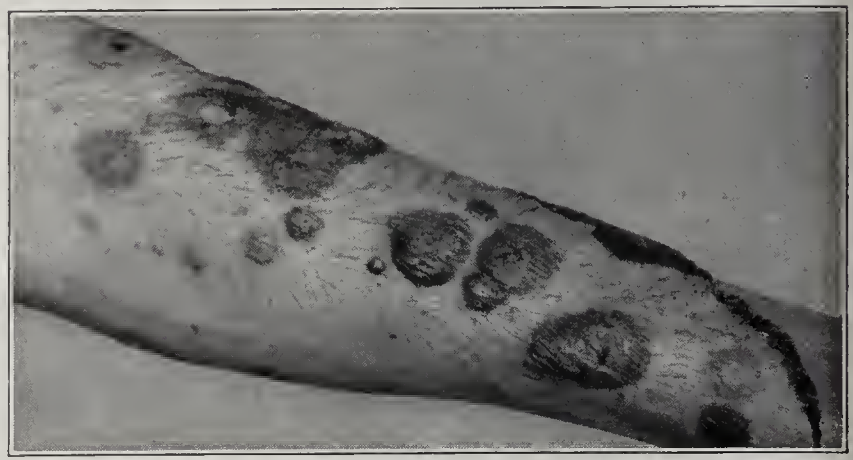

Fig. 3 (Case 4).—Left forearm.

Case 3.—A man, aged 54, brought to Cook County Hospital in my service, in July, 1920, suffered from a skin eruption manifested by widely distributed erythematous patches, ring-shaped in outline, most of which were the diameter of a ten cent piece. Figure 1 shows the widespread distribution of erythema multiforme patches, a few of which are just becoming bullous; also bullous lesions about the mouth. He had many lesions on the lips and on the buccal mucosae which, of course, were macerated. The patient was distinctly ill and could take nourishment only with the utmost difficulty and discomfort. His temperature was distinctly elevated, 102.4, and the pulse correspondingly high. After he had been in the house about thirty-six hours, many of the lesions became bullous in character, with hemorrhage in some of them. The patient showed evidence of acidosis and became acutely ill, so that a lethal outcome was prognosticated by two physicians, who did not see the patient before the appearance of the bullae, and believed the patient had pemphigus. Examination of the mouth revealed an intense pyorrhea alveolaris; pus was readily expressible at any point along

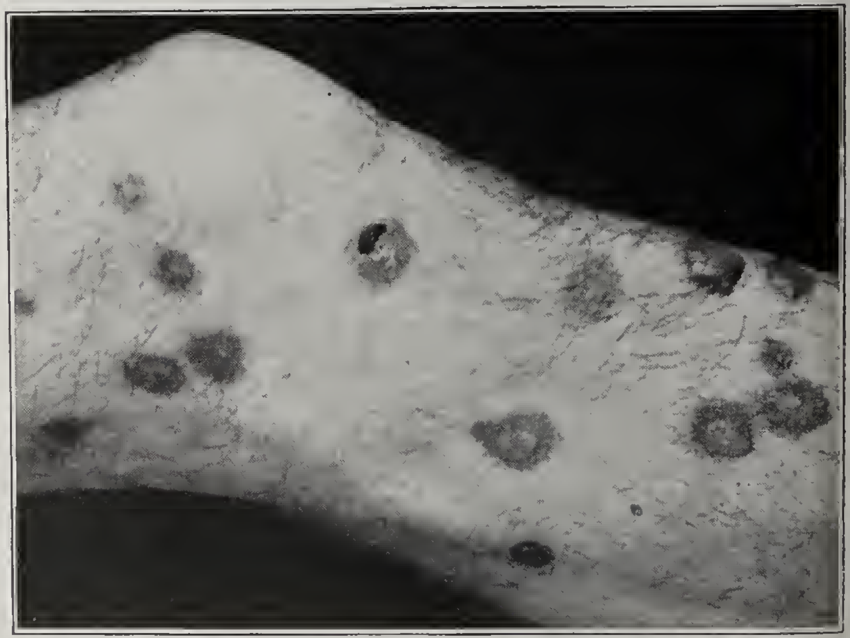

Fig. 4 (Case 4).—Lesions about left knee; hemorrhagic content of some bullae may be noted.

the gingival margin. Treatment, as in the preceding cases, resulted in recovery.

Case 4.—A man, aged 23, seen at Cook County Hospital, in 1920, in the service of Drs. Stillians and Oliver, Ward 44, came into the hospital complaining of a severe bullous eruption, chiefly on the extensor surfaces of the forearms and legs, and on the face about the mucous orifices. Figures 2, 3 and 4 show the distinctly bullous character of the lesions, some of which were distinctly hemorrhagic. Those on the arm are seen to be somewhat flaccid at the time the photograph was taken, and at the moment the exposure was made, one is in the process of rupturing, with release of hemorrhagic fluid.

In spite of the intense inflammatory character of this patient's eruption, he was at no time desperately ill, and none of the attending staff expressed any other than a favorable prognosis.

It will be noted from Figure 2 that many of the lesions are confluent and ringlike, and present the so-called herpes iris character. In this case proctoclysis did not have to be resorted to. Recovery was complete and uneventful. Examination revealed badly infected, cryptic tonsils as the likely etiologic factor in this case.

Case 5.—A girl, aged 14 years, had suffered three previous attacks of a bullous eruption, during the last seven years, chiefly confined to the extensor surfaces of the forearm and hands. Her mother stated that these attacks occurred in the spring or the fall and were preceded by a sore throat. When I saw the patient, the condition of her hands was as shown in Figure 5. There were several large, tense bullae, with outer circles of vesicles and distinctly "iris" in configuration. Examination of the throat revealed badly infected, cryptic tonsils. These were removed, and there has been no recurrence of the dermatitis. Alkaline treatment and salicylates brought about rapid improvement in this case also.

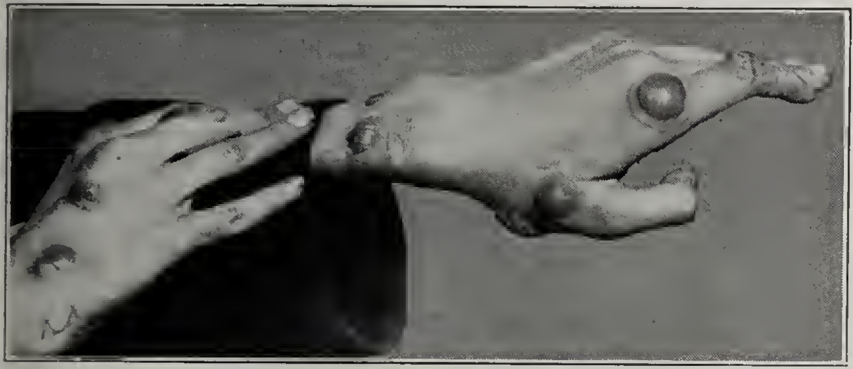

Fig. 5 (Case 5).—Enormous, discrete lesions, especially marked on dorsum of left hand.

The pathology of erythema bullosum has been carefully studied and consists, at first, in a simple hyperemia due to vascular dilatation, followed by a paresis of the cutaneous vessels, arterioles and capillaries, with cell proliferation and edema. The epidermic changes are most marked in those cases in which there is the greatest amount of exudate. The covering of the vesicles and bullae consists of the horny layer and sometimes of the entire epidermis.

The differential diagnosis is chiefly from pemphigus, but can ordinarily be easily clarified.

CONCLUSIONS

These five cases seem to indicate, at least to me, that:

1. Erythema bullosum is a disease due to toxic substances.

2. The toxic substances may be from widely different sources.

3. In attempting to find an etiologic factor in different cases, it is well to rule out focal infections from the teeth, tonsils, etc.

4. Any focal infection present should receive expert attention after the subsidence of the attack.

5. Treatment directed to alkalizing the patient to the utmost and giving large doses of salicylates is of great value.

6. Proctoclysis for the exhibition of alkali salts and salicylates is indicated when the patient cannot take fluids by mouth.

7. Regardless of how desperate the condition may appear, recovery usually takes place under appropriate treatment.

25 East Washington Street.

PRIMARY ACTINOMYCOSIS OF THE SKIN

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ALLIANCE, NEB.

Actinomycosis, recognized in cattle by Bollinger, was first described in man by Israel in 1877. Ponfick, in the same year, showed that the disease in cattle was identical with that occurring in man. Infection with the organism is common in cattle, in which the disease is known as lumpy jaw. It is comparatively rare in man. The infection occurs most frequently by way of the gastro-intestinal tract, particularly in the mouth, but it at times starts in the lungs and rarely in the skin. Secondary skin involvement in actinomycosis as it ordinarily occurs is fairly common. Such skin lesions are more often about the face and neck, especially the lateral surfaces of the neck beneath the jaw.

Primary actinomycosis of the skin, however, is rare. Wallhauser,[1] in 1904, observed an extensive case in which the primary infection occurred on the point of the chin from without. Merian,[2] in 1912, found only twenty-five recorded cases occurring primarily in the skin, and reported another occurring at the corner of the mouth. The small tumor was excised, and its nature discovered on section. The method of infection is probably by direct contact of the fungus with the broken surface of the skin. From the original focus of infection, new areas appear as the result of direct extension of the disease. Metastasis is rare, and when it does occur is probably through the blood stream, the fungus having penetrated a vessel. The lymph glands are not involved, and when they have been reported as enlarged, secondary infection has probably been present, and the enlargement due to the latter.

The onset of primary actinomycosis of the skin is usually insidious, though occasionally it may be rapid. The symptoms are entirely local. No subjective symptoms are complained of. The temperature is not elevated, and the leukocyte count is normal. The first sign to be noted is a small, subcutaneous node, firm to pressure, not tender, and fairly movable. The skin over this node gradually becomes dirty blue, thins at some point, and finally bursts, discharging a tiny droplet of yellow matter. Innumerable nodules develop in the surrounding areas, each going through the same process. The well developed lesion shows these nodules in all stages of development. The picture then presents nodules of varying depth, the skin is boggy and purplish, and numerous small openings discharge the gray and yellowish-gray contents. The fungus stimulates a definite fibrous tissue formation. Each nodule is a mass of fibrous tissue with a very small cavity containing the parasite. From the size of the nodule one may expect quite an amount of pus on incision. The result, however, is a minute droplet.

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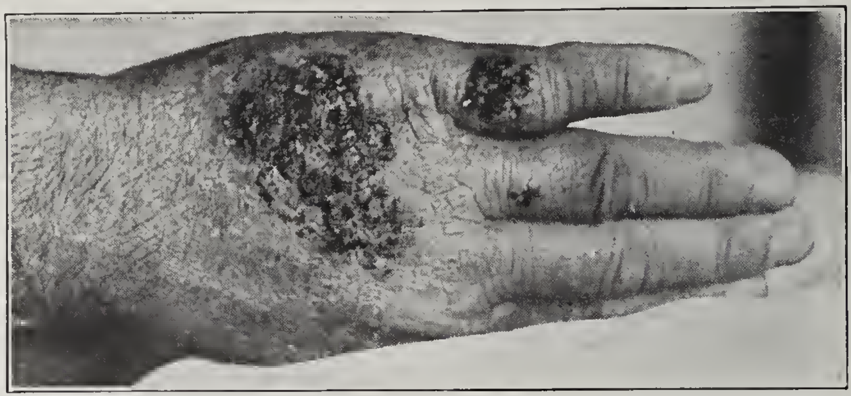
[1] Wallhauser: J. Cutan. Dis. 22: 77, 1904.
[2] Merian: Dermat. Wchnschr., January, 1912.

In the most commonly recognized type of the disease, the fungus is found in the yellowish or grayish masses discharged from the nodules. Fine, interlacing filaments radiating from a common center with "club" formation may be seen. The filaments are slender and sinuous, and have an external sheath and protoplasmic medulla. The filaments grow rapidly and probably produce the disease. Bostrom "spores" (coccus and bacillus-like cells) may also be found.

In human beings the resistance to the growth of the micro-organism is active but not very effective. The parasite, therefore, multiplies rapidly, and numerous filaments occurring singly, in loose tangles and in colonies are often abundant. The hyaline clubs are usually rare and often entirely wanting. They probably represent a protective secretion of the marginal filaments. This fact is often forgotten and the true nature of the disease overlooked because of failure to find the "clubs." In cattle, because of the greater chronicity of the lesion, the actinomycetes appear as colonies surrounded by a well developed layer of clubs.

The organism produces a toxin of considerable strength, so that more or less extensive necrosis is always produced. Polymorphonuclear leukocytes and serum form the exudate. Occasionally a foreign body giant cell is seen.


Appearance of hand after one week's treatment with surgical solution of chlorinated soda.

The reaction to the lesion is characteristic in the formation of granulation tissue around the colony. Immediately outside this, fibrous tissue is formed. Such a protective mechanism, it would appear, should be an effective barrier against extension of the disease. This, however, is not the case. Extension is rapid and is produced by direct invasion of the capsule, so that necrosis and softening are produced and further extension rendered possible.

The disease is probably more common than is generally believed. It may be mistaken for blastomycosis, tuberculosis and cutaneous syphilis. The diagnosis is usually self evident on microscopic examination of the discharge. However, as has been pointed out by Wohl,[3] the radiating clubs may not be found in the smears, and are found only in sections of the necrotic tissue, or on culture. The stained smears from the agar and bouillon cultures show long and short rods with branching filaments. No club formation is noticed.[4] Since the publication of the article by Wohl, I have been convinced that a puzzling case, also a lesion on the hand, in which no diagnosis was made, was probably actinomycosis. Failure to make a positive diagnosis I attribute to the absence of the characteristic clubs in the discharge, though the disease was suspected.

Various remedies have been recommended as effective in the treatment of actinomycosis. Of these, potassium iodid is still most commonly used. Good results are usually reported from its use. It is given in small doses at first, well diluted, and gradually increased to tolerance, much in the same manner as it is given in syphilis. In spite of the claim of an "almost" specific, potassium iodid does not inhibit the growth of *Actinomyces* in culture, even in high concentrations. Bevan,[5] in 1905, suggested the use of copper sulphate internally in the dosage of from one-quarter to 1 grain (0.016 to 0.065 gm.) three times a day. Locally, 1 per cent. solution was recommended. The method has proved of some value. Used in conjunction with the roentgen ray, it has proved of value in a case described by Zeisler. In my case, potassium iodid proved to be of no value whatsoever. Surgical treatment, consisting of an incision of the nodules and curettement of the lesion, should be instituted at once. Surgical solution of chlorinated soda (Dakin's solution), then applied, gives prompt results. The lesion is covered with gauze, kept constantly saturated with Dakin's solution. At intervals, moist heat is applied over the gauze. This results in the decomposition of the Dakin's solution with the liberation of free chlorin, and to this I attribute my results.

REPORT OF CASE

H. M., aged 35, a farmer and trapper, presented himself, May 3, 1919, with a lesion of the left hand. He had been trapping, and the lesion commenced a week before. Thinking it a boil, he painted it with iodin. The patient was healthy, with no subjective symptoms and all findings negative except the left hand. The temperature was normal. The leukocyte count was normal. The Wassermann reaction was negative. On the left hand was a lesion covering the wrist and entire dorsum of the hand, and extending onto the dorsal surface of the fingers. The skin was purplish, with numerous small sinuses and firm nodules. One of the nodules was incised and a minute droplet of pus expressed. Microscopic examination disclosed the fungus. The nodules were incised and the lesion curetted. Administration of potassium iodid was instituted, and boric acid dressings were applied. At the end of ten days the lesion showed no improvement and had increased in extent. May 13, the Dakin's solution as outlined above was used, and immediate improvement began. In one week the lesion had been reduced in extent by one half and appeared then as shown in the accompanying illustration. By June, two weeks after the institution of the treatment with Dakin's solution, the lesion was healed, leaving no scar. There has been no return to date.

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[3] Wohl: Nebraska M. J. **4**: 134 (May) 1919.

[4] Wright: J. M. Res., 1904-1905, p. 307.

[5] Bevan, A. D.: Treatment of Actinomycosis and Blastomycosis with Copper Salts, J. A. M. A. **45**: 1492 (Nov. 11) 1905.

Physician as Instructor in Health.—The general public today has just enough knowledge of personal hygiene to excite its interest and desire for more. People are more anxious to hold onto health than at any former time. Health notes in the daily and weekly press are eagerly read by great numbers. What is needed and what is being asked for in a measure is a fuller knowledge of the principles of physiology applied to the maintenance of personal health. Because of his knowledge and his right of entry into the homes of the people, the general practitioner of medicine is the individual best equipped of all the health agencies to render this service, representing as he does the one point of contact between scientific research and popular need.—Sir Napier Burnett, *Nation's Health* **4**:191 (April) 1922.

A PLEA FOR THE EARLY RECOGNITION OF UROLOGIC CONDITIONS *

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Urologists agree that a large percentage of their cases are either beyond remedial measures, or so far advanced that extensive surgical interference is necessary to improve their condition or cure them, and that many of these cases would not have advanced so far, had a correct diagnosis been made earlier. From an analysis of the postmortem records of urologic cases at Johns Hopkins Hospital between 1912 and 1914, Hinman concludes that in more than half of the deaths the cause was acute infection, indicated clinically by the history, and pathologically by finding cystitis, pyelitis, pyelonephritis and pyonephrosis. These and other well recognized facts emphasize the danger of urinary infection which so often follows misdirected treatment in cases involving the urogenital tract.

The foregoing condition is due to the fact that too much reliance has been placed on the efficacy of urinary antiseptics; these patients have invariably been fed on drugs regardless of the pathologic condition present. Another reason is that the practitioner frequently does not understand the urologic symptoms, or fails to interpret them correctly, disregarding the final outcome of a particular case with urinary symptoms.

We have all seen cases with symptoms of a surgical condition of the urogenital tract that have been treated with urinary antiseptics and bladder irrigations for many months and even years. We are also familiar with that type of patient who has been operated on for almost every conceivable condition in the abdomen and pelvis, when, as a matter of fact, the real pathologic condition was in the urinary tract. The same patients, their symptoms existing months and in some cases years, not having been relieved, have in many instances been reoperated on two or three or even more times, without knowing that the real trouble was in the urinary tract. O'Niel maintains that 25 per cent. of the patients with ureteral calculus that came to operation at the Massachusetts General Hospital had previous intra-abdominal operations for appendicitis and other abdominal conditions without relief.

It is evident, therefore, that one should not place too much reliance on the efficacy of urinary antiseptics, or depend too much on the physical examination or a urine analysis for a diagnosis of urologic conditions; if an abnormal condition is found, the administration of drugs and bladder irrigations should not be kept up indefinitely in the hope that the so-called cystitis will improve. Cystitis as such is a symptom of some abnormal condition referable to the urinary tract and not a separate and distinct entity, the only exception being, possibly, infection of the bladder following instrumentation.

To discuss the symptoms of diseases of the urogenital tract is not within the scope of this paper, because of the limitation in time and because this phase of the subject is well covered in modern books on urology. However, in analyzing these symptoms one becomes convinced that pain and tenderness, while they are important symptoms of urologic conditions, fail in their reliability because they too often simulate other conditions, whereas pus in the urine, blood in the urine and disturbances in the function of micturition (frequency, urgency, pain, burning, retention and incontinence) are symptoms that should receive serious consideration, as they are definite signs of pathologic conditions of the urinary tract that demand investigation to determine their cause.

With the means at our disposal for making correct urologic diagnoses and applying the proper remedy, it is certain that many extensive surgical procedures both on the urinary tract and outside the urinary tract could be avoided, thereby resulting in fewer unnecessary operations, fewer monorenal persons and, in all probability, fewer cases of malignant disease either beyond control or already engrafted on a lesion primarily benign.

ILLUSTRATIVE CASES

Case 1.—*History*.—A man, aged 59, admitted, Dec. 2, 1921, complained of bleeding from the bladder occurring every five or six months for the last six years. The bleeding lasted two or three days, and was painless. There had been frequency and terminal pain for the last six years. Cystoscopy revealed a papillomatous tumor of the bladder. December 5, a suprapubic cystotomy for excision of the tumor was performed. A large tumor mass involved the left lower portion, including the sphincter and prostate, making it inoperable. Two days later, radium was inserted through the suprapubic wound. The pathologic report was: papillary carcinoma.

Comment.—This patient had definite symptoms of a pathologic condition of the urinary tract for six years, which probably began as a benign papilloma. As in many of these cases, a malignant change took place later. Had the diagnosis been made when the symptoms indicated the necessity for investigation (six years before), a total excision of the tumor at that time would have given the patient a much better chance to live.

Case 2.—*History*.—A man, aged 57, admitted, Dec. 18, 1920, complained of pain in the left lumbar region. Six weeks prior to admission he had a severe pain in the region of the left kidney, accompanied by a large amount of blood in the urine. The left testicle became enlarged and tender. He had noticed blood in the urine about a year, and was receiving treatment for it from his family physician. The patient was poorly nourished, the skin was pale, and there was marked tenderness and rigidity over the left kidney. The left testicle was about twice as large as the right. The urine contained a large number of red blood cells. The roentgen ray revealed no shadows in the region of the left kidney; the lower pole was much lower than normal. Cystoscopy revealed a pouting left ureteral orifice. A No. 6 ureteral catheter was passed without obstruction, and clear urine was obtained from both sides (red blood cells from the left side microscopically). The appearance time of the functional test on the right side was seven minutes, and on the left side, twenty minutes. Sodium bromid solution was injected for pyelography, 7 c.c. on the right side and 18 c.c. on the left side. The roentgen ray revealed the left kidney pelvis moderately dilated, the upper minor calices elongated. The middle calices were widened, elongated and distorted. There was marked irregularity of the lower calices. The diagnosis was: left renal tumor. Nephrectomy was performed. Practically no normal tissue was seen on section. The diagnosis now was: hypernephroma.

Comment.—The significance of hematuria must always be given proper consideration, when first noted.

Case 3.—*History*.—A girl, aged 5, admitted, Dec. 16, 1921, complained of pain in the right lower abdomen. She had had three attacks of pneumonia, the last attack a year before. She had had pus in the urine for the last three years, for which she was being treated by her family physician, who diagnosed pyelitis. The present illness began two days before, with pain in the right lower abdomen, which was severe at times. She had had nausea but no vomiting.

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* From the Surgical Service of Mount Sinai Hospital.

* Read before the Academy of Medicine, Cleveland, March 17, 1922.

Physical examination was negative except for slight tenderness in the right lower abdomen. There was no rigidity. The urine was loaded with pus cells. The roentgen ray revealed three shadows in the region of the left kidney. Cystoscopy revealed a normal bladder and normal ureteral orifices. One cubic centimeter of indigocarmin was injected intramuscularly. The appearance time on the right side was seventeen minutes, and on the left side, thirty minutes. The diagnosis was: renal calculus, left side. Pyelotomy was performed, and three stones were removed.

Comment.—This patient may or may not have had pyelitis primarily. It is safe to assume, however, that she had had renal calculus for a considerable time, because of the size of the stones and the length of time that pus was present in the urine. The pain in the right abdomen was in all probability reflex.

Case 4.—*History.*—A man, aged 20, admitted, July 12, 1920, complained of marked urgency and frequency, accompanied by terminal pain. He had had hematuria six months before. The duration of the present symptoms was about six months. For the last year he had been treated for gonorrhea, although he denied ever having had a symptom of urethritis, aside from a slight burning at the end of micturition, for which he sought relief at that time. He had lost 50 pounds. The physical examination was negative. The urine showed many pus cells and a few red blood cells. Cystoscopy revealed marked inflammation of the bladder mucosa, with bullous edema, two large stones present making it impossible to catheterize the ureters. Suprapubic cystotomy was performed, and two stones were removed.

Comment.—A whole year was lost in this case through a wrong diagnosis.

Case 5.—*History.*—A man, aged 24, admitted, July 21, 1919, complained of kidney trouble and pain on urination. The duration of symptoms was six or seven years. He had had occasional attacks of colic and several attacks of hematuria. He had had pus in the urine for the last three years, and was treated by many physicians for this condition during the last six years. Physical examination was negative except for tenderness over the left kidney. Cystoscopy revealed a mild inflammation of the bladder mucosa and turbid urine from the left side. Function was normal on both sides. The roentgen ray revealed three shadows in the region of the left kidney. The diagnosis was: renal calculus on the left side. Pyelotomy was performed, and three stones were removed.

Comment.—A much earlier diagnosis in this case would have been a simple matter.

Case 6.—*History.*—A man, aged 36, admitted, Dec. 15, 1921, complained of hematuria and occasional pain in the region of the left kidney. The duration of the symptoms was ten years. He had been receiving treatment for this condition from various physicians. Physical examination was negative except for slight tenderness over the left kidney. The urine contained a large amount of red and white blood cells. Cystoscopic examination revealed a slightly inflamed bladder mucosa. Urine from the right side was clear, and from the left side, hemorrhagic. Indigocarmin appearance time on the right side was four minutes, and on the left side, fifteen minutes. Pyelograms revealed the left pelvis dilated and irregular, the calices indistinct and dilated. The right side was normal. The diagnosis was: tumor of the left kidney. Nephrectomy was performed. Instead of a tumor, a large calculus filled the entire pelvis and extended into the calices. For this reason and because the kidney was pale and soft, a nephrectomy rather than a pyelotomy was performed. Pathologically, the kidney showed a marked cloudy swelling and fatty degeneration, and a marked dilatation of the tubules.

Comment.—The mistake in the preoperative diagnosis as between tumor and calculus was an error in deduction, and yet, while the weight of the evidence was in favor of tumor, it is possible that a roentgen-ray examination prior to the cystoscopy and pyelography would have disclosed a shadow in the region of the left kidney. This, however, did not alter the surgical procedure. This patient was treated over a period of ten years, with medicines and bladder irrigations, no positive diagnosis being made.

Case 7.—*History.*—A man, aged 34, complained of a urethral discharge for the last two years. He was treated continuously for gonorrhea. He denied exposure and had had no other symptoms of urethritis except discharge and occasional terminal hematuria. The discharge had always been thin and watery. He had pain in the lower back and a full feeling in the perineum. Physical examination was negative except for a slight mucoid discharge, which was negative for gonococci. Endoscopic examination disclosed the posterior urethra and the superior and lateral surfaces of the neck of the bladder studded with numbers of polyps. The upper urinary tract was negative. The tumors were fulgurized. Complete recovery ensued after seven treatments.

Comment.—I have seen fifteen cases like this one. Nine of the patients admitted having had gonorrhea, and five denied it, but all were treated for it.

Case 8.—*History.*—A man, aged 24, admitted, May 21, 1918, complained of frequency and hematuria. About two months prior to this he was operated on for appendicitis because of pain in the epigastrium and because the roentgen ray revealed an obliterated appendix and a possible Lane's kink. The urine at this time showed a few pus cells. Two years before he was admitted he had a sharp, stabbing pain in the right lower abdomen which came on suddenly and lasted two days. He had had two similar attacks since. He had had urinary frequency since the first attack of sharp pain, two years before. Physical examination was negative. The urine contained a few red and white blood cells. Cystoscopic examination revealed a slightly inflamed bladder mucosa and a small calculus in the region of the left ureteral orifice. The urine from both sides was clear, and the functional test was normal. Cystoscopic removal of the calculus was effected.

Comment.—From the history and examination in this case, it is reasonable to assume that the attacks of pain described above were due to ureteral calculus and not to appendicitis.

Case 9 illustrates the application of modern urologic diagnostic methods in borderline cases in which it becomes necessary to rule out urologic conditions as a cause of particular symptoms, as well as differentiating interabdominal conditions.

Case 9.—A woman, aged 20, referred by Dr. Theodore Miller because of a mass in the lower abdomen which felt like a kidney, had been pregnant three months. Physical examination revealed a kidney-shaped mass fixed to the second and third lumbar vertebrae and extending about a hand's breadth to each side of the median line. Cystoscopic examination was negative. Sodium bromid solution was injected, 11 c.c. on the right side and 9 c.c. on the left side. Pyelograms revealed the left kidney in the position corresponding to the mass felt on physical examination. The right kidney was in the normal position, but rotated so that the calices pointed inward rather than outward.

The advisability of determining what this mass was is apparent, and requires no further comment.

COMMENT

These are only a few of the cases that have come under my observation at the hospital during the last five years. They illustrate how generally physicians fail to take advantage of modern urologic diagnostic methods, such as cystoscopy, ureteral catheterization, renal function tests, pyelography and roentgenography. The sooner the profession realizes the importance of accurate diagnoses in these cases, the sooner will it learn that calculi, tumors, obstructions and malformations of the urogenital tract, as well as infection of the upper urinary tract, are not cured by urinary antisepsis, and washing out the bladder.

Furthermore, the earlier a urologic diagnosis is made, the less extensive will be the surgical procedure for its correction, with a much greater chance for a complete recovery.

Certain points remain to be emphasized. It should be borne in mind that this discussion excludes gonorrheal infection.

1. Valuable information is obtained in urologic cases from a careful examination of the patient, combined with a careful examination of the urine.

2. One should not treat every case of pyuria or hematuria, either with or without urinary disturbances, with drugs and bladder irrigations indefinitely.

3. Pus in the urine, blood in the urine and disturbances in the function of micturition are definite signs of a pathologic condition of the urinary tract that demand serious consideration.

4. Cystitis, so-called, is a symptom of some pathologic condition of the urinary tract and not a distinct entity.

5. By applying modern urologic diagnostic methods, a correct diagnosis can be made with a reasonable degree of certainty. Then and then only can this class of cases be treated along proper lines.

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THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS

WITH SPECIAL REFERENCE TO PYLOROPLASTY

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The selection of the proper surgical procedure for the treatment of duodenal or gastric ulcers depends on some knowledge of the etiology of the ulcer, of the physiology of the stomach, and of the pathologic condition present.

It is undoubtedly true that many ulcers of the stomach or duodenum can be and are cured by medical measures, chiefly by diet. These cases, however, are usually the more recent ulcers. Operation is not advisable in an ulcer that has existed only a few weeks, unless some complication, such as hemorrhage or perforation, appears to threaten life. The old peptic ulcers that have become callous are not often cured by medical treatment, though the symptoms may be ameliorated and the patient's general health improved. The condition somewhat resembles ulceration in other portions of the body, as on the leg. When a recent injury has caused an ulcer, such a lesion does not require excision. If, however, there are varicose veins, and the ulcer has become indurated and has persisted for months or years, its surgical removal is indicated, together with correction of the underlying aggravating pathologic condition by excision of the varicose veins.

Medical treatment should go hand in hand with the surgical treatment. Surgeons and physicians can merely assist Nature. Suturing a wound is only a temporary aid, which apposes, immobilizes and rests the injured tissues; unless Nature unites the apposed tissues, they will fall apart when the stitches are removed, just as would two pieces of leather. In like manner, operations on the stomach should be followed not only by general rest in bed for a sufficient time, but also by local physiologic rest, which in this instance can be only partial, and is secured by a proper and scientific regulation of diet, so that the stomach receives only the necessary quantity of nourishment, administered in such a manner and at such times as will give it the least possible amount of work to do.

Living tissue cannot be treated in the same manner as inanimate things, and a recognition of the best means of giving a diseased organ rest, relative or absolute, is one of the greatest therapeutic resources in either medicine or surgery.

The etiology of ulcers of the stomach and duodenum has not been fully explained, though much light has been thrown on it. The work of Reeves [1] in demonstrating the peculiar arrangement of the vascular supply of the pyloric portion of the stomach and the first portion of the duodenum is interesting because this circulation seems favorable for the development of thrombi. The pyloric end of the stomach is equipped with strong and active muscles. The caliber of the stomach tapers off to the pylorus, producing more pressure and friction in this region. These facts, together with the sudden change in reaction from acidity in the stomach to alkalinity in the duodenum, doubtless influence greatly the formation of pyloric and duodenal ulcers.

Most gastric and duodenal ulcers seem to be hematogenous in origin. At the time of the formation of the ulcer there probably were other lesions, such as cholecystitis, pancreatitis and nephritis, which cleared up and left the ulcer as the sole surviving lesion. The work of Rosenow in this regard is exceedingly interesting. If, however, after other lesions have healed, the ulcer still exists, its elimination seems to be indicated.

The removal of a focus of infection has been emphasized in recent years. While this doctrine may occasionally have been carried too far, efforts made to remove any source of toxic absorption, no matter how small, are founded on correct principles. If the sepsis from an apical abscess of a tooth is a cause of a distant pathologic condition, certainly an ulcer of the stomach or duodenum, which is almost constantly massaged by peristaltic waves, cannot be overlooked as a source of toxic products.

The object of surgical treatment in these cases is to remove the pathologic condition and then to restore as far as possible the physiology of the stomach. These indications do not admit of any one standard type of operation in all ulcers. If an ulcer is in the body of the stomach, near its lesser curvature, a V-shaped resection is indicated. If the ulcer is extensive, and not malignant, a "sleeve" resection would probably give better eventual results than the removal of a large V-shaped section. Barber and others have shown that the "sleeve" resection apparently interferes less with harmonious peristalsis than the removal of a large V-shaped section from the lesser border. If the ulcer is very difficult to reach, the cauterization of Balfour should be done; or, if this is impossible, a pyloroplasty alone may benefit.

The removal of an ulcer from the posterior wall is best done by an incision through the gastrocolic and the gastrohepatic mesentery, according to the suggestion of W. J. Mayo. After the ulcer has been excised and the wound sutured, a piece of the great omentum can be fastened over the site of the excised ulcer for additional security and to prevent adhesions to the pancreas. Ulcers of the stomach near the pylorus, and ulcers in the first inch of the duodenum, may be treated by excision and pyloroplasty. If, however, there are multiple ulcers in the pyloric end of the stomach, or if they tend to recur, pylorectomy with the Billroth method of union of the duodenum and stomach, or the Polya-Balfour union of the jejunum to the stump of the stomach gives satisfactory results. These operations carry a higher mortality rate than the simpler pyloroplasty or gastro-enterostomy, though the pathologic condition present may cause them to be indicated on account of the better late results.

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[1] Reeves, T. B.: Surg., Gynec. & Obst. **33**: 374 (April) 1920.

The most frequent site of ulcer is near the pylorus, either on the duodenal or on the gastric side. If the ulcers have resulted in cicatricial contraction and marked stenosis, the normal gastric or duodenal wall is replaced by an extensive scar, and it becomes impossible to restore physiologic function to tissue that has been thus permanently damaged. Here it must be determined whether it is wiser to attempt to restore a crippled outlet at the pyloric end of the stomach by doing a pyloroplasty, and so preserving the physiologic exit of the gastric contents, or whether it would be better to do a gastro-enterostomy because of the impossibility of restoring the pyloric function. J. M. T. Finney has very justly said that a gastro-enterostomy, like an amputation, is a confession of failure, and the problem may be likened to the question that sometimes arises as to whether we shall preserve or amputate a limb that has been permanently crippled.

CONDITIONS IN WHICH GASTRO-ENTEROSTOMY IS OPERATION OF CHOICE

There are three conditions in connection with ulcer of the stomach and duodenum in which it seems to us that gastro-enterostomy is preferable to pyloroplasty: (1) When there is an extensive stenosis, so that most of the normal tissue near the pylorus has been destroyed; (2) when there is a large ulcer in the first portion of the duodenum or in the pyloric end of the stomach, accompanied by extensive leukocytic infiltration, and especially if there is a subacute perforation; and (3) when adhesions are very extensive, especially with only slight disease of the gallbladder.

1. The first classification admits of little further discussion. In a narrow stenosis, with no adhesions, a pyloroplasty may be done with good results, but in extensive stenosis, pyloroplasty is not only difficult but unsatisfactory. If, however, there is bleeding accompanied by dense stenosis, it would be well to do a pyloroplasty in order to break the ring of cicatricial tissue and bring in normal duodenal and gastric wall which will drain away the venous blood. Contraction is likely to follow in these extensive stenoses, and a gastro-enterostomy should be performed at the same time.

2. Any large infiltrated ulcer near the pylorus, either in the stomach or on the duodenal side, will probably be followed by an eventual stenosis. Such infiltrated tissue does not hold sutures well, and gastro-enterostomy is here clearly indicated. If a perforation seems imminent, the gallbladder or a tag of omentum should be fastened over the site of the ulcer with catgut sutures.

3. When extensive adhesions exist, and the gallbladder shows but little disease, even removal of the gallbladder is often followed by adhesions of the duodenum to the liver, which provoke pain and distress and make the eventual results unsatisfactory. One of us[2] has recently elaborated this feature in discussing cholecystitis and duodenal ulcer. If the adhesions are mostly or entirely between the duodenum and the gallbladder, removal of the gallbladder with a pyloroplasty will usually be satisfactory. The gallbladder should be removed as gently as possible, and the stump of the cystic duct should not be drained, but preferably covered with a tag of omentum.

In gastro-enterostomy the strong peristalsis in the pyloric end of the stomach is diminished because a large portion of the food finds an easier outlet through the stoma of the gastro-enterostomy. Therefore, though the adhesions here will still exist, they produce no symptoms because they are not tugged at by the strong peristaltic waves; whereas, when all the food passes through the pylorus, the increased tugging on the peripyloric adhesions by the normal peristalsis causes discomfort.

WHEN PYLOROPLASTY SHOULD BE CHOSEN

The type of cases in which pyloric or duodenal ulcer exists, and the pylorus is open and there are no adhesions, clearly calls for a pyloroplasty. Acute perforations of small ulcers are similarly treated. This restores the stomach as nearly as possible to its normal physiologic condition. Also, when there is but little injury to the structures of the stomach or duodenum, as in a narrow stenosis, pyloroplasty is indicated. When the diseased condition of the stomach or duodenum is well localized, and can be completely extirpated or corrected without serious harm to the anatomy or function of the tissues, it would be as unwise to perform a gastro-enterostomy as it would be to amputate for a comparatively slight lesion of the leg. Moreover, it is in this type of case, in which the pylorus is open, that gastro-enterostomy gives the worst results. If we can extirpate the lesion and still find the organs from which it is removed in excellent condition, we should obviously reconstruct the tissues in as nearly normal condition as possible.

This, we think, is best accomplished by the pyloroplasty devised by one of us.[3] There are a few modifications of the original operation which have been described in subsequent publications.[4] The most important of these is the use of two tractor sutures instead of one, and the mere approximation of the cut edges of the tissue with the second row of sutures, instead of attempting to infold with the second row. Whatever infolding is done is accomplished by the third row of sutures.

When in doubt with a borderline case, it is better to perform a pyloroplasty than a gastro-enterostomy; for a secondary gastro-enterostomy is easier and safer than a secondary pyloroplasty accompanied by the uncoupling of the gastro-enterostomy and suturing the resulting wounds in the stomach and in the jejunum. Thus, in an acute perforation of a duodenal ulcer, pyloroplasty seems to offer the best immediate result, though, from the character of the lesion with its extensive peritoneal irritation, marked adhesions may occur and a subsequent gastro-enterostomy may sometimes be necessary to relieve symptoms.

Ulcers that are situated in the duodenum more than an inch from the pylorus do not admit of a pyloroplasty, but may be excised with a transverse incision and sutured, as practiced by E. S. Judd.

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[2] Vaughan, W. T.: Duodenal Ulcer and Cholecystitis, Virginia M. Month., April, 1922.

[3] Horsley, J. S.: A New Operation for Duodenal and Gastric Ulcer, J. A. M. A. **73**: 575 (Aug. 23) 1919.

[4] Horsley, J. S.: Ulcer of the Jejunum Following Gastro-Enterostomy, J. A. M. A. **76**: 354-358 (Feb. 5) 1921; Ann. Surg. **73**: 199-210 (Feb.) 1921.

Whenever an operation for gastric ulcer is performed, whether by a "sleeve" or a V-shaped resection, a pyloroplasty should be done. This is necessary for the same reason that makes it wise to paralyze the sphincter ani when ulcers of the rectum are excised. The pyloric sphincter offers an increased resistance because of the irritation, and the stomach muscles, being weakened by the operation, can hardly overcome even the normal resistance. Therefore the pyloroplasty, which puts out of commission temporarily the muscular resistance of the pylorus, makes it possible for the injured stomach to empty its contents with a minimum exertion.

It seems, then, that gastric or duodenal ulcers can usually be treated satisfactorily by one of these types of operation. But the operation must fit the ulcer, and not the ulcer the operation. The presence of marked symptoms after gastro-enterostomy with an open pylorus has given the advocates of routine gastro-enterostomy in every ulcer much concern. The poor results in such cases are doubtless due to the action of the acid gastric juice on the mucosa of the jejunum, which is accustomed to alkaline contents. The alkalinity of the duodenal contents is lowered by the gastric juice, which enters through the open pylorus, but remains at its maximum when the pylorus is permanently closed by stenosis. In the latter condition, the high alkalinity may overcome the acidity of the gastric contents at the stoma of the gastro-enterostomy, and so protect the jejunal mucosa.

When the operative procedure has failed to give benefit in an individual case, it is safe to assume that the method was not the proper one for that case, and we should endeavor to find wherein there was a failure. It has been by such analysis that the general principles formulated above have been determined.

RESULTS

Up to April 19, 1922, we have performed thirty-nine pyloroplasties according to the technic referred to. In the first twelve there were three deaths, all of which we think would be now avoidable. There have been no other operative mortalities.

From July 1, 1921 to the present time (April 19, 1922) eight pyloroplasties have been done. So far as we know, all of these patients are doing well, except one who had an acute perforation of a duodenal ulcer, and now has "hunger pain." These eight operations, however, are too recent to be included in a statistical study of end-results. A few patients in the earlier group were not heard from when the summary of July 1 was made, but they had previously reported their condition, from a few months to a year after operation, as being satisfactory.

In cases of duodenal or pyloric ulcer, uncomplicated by adhesions or other pathologic condition in the right upper quadrant, simple excision with the pyloroplasty has apparently given 100 per cent. symptom-free cures. On the contrary, when, as often occurs, there were complicating adhesions between the duodenum and the gallbladder, and when these adhesions were merely separated, the results have been 66 per cent. unsatisfactory, and no case has remained entirely symptom-free. This has been true even though the gallbladder has appeared normal except for adhesions.

This fact having been recognized, if adhesions are solely to the gallbladder, we now remove such gallbladders at the original operation, with 100 per cent. symptom-free results. In one case, drainage of the gallbladder was unsuccessful, while subsequent cholecystectomy gave entire relief from symptoms. From this it would appear that removal of the gallbladder, together with such precautions to prevent the occurrence of adhesions as have been outlined elsewhere, is preferable to drainage.

We have found that if, in addition to adhesions to the gallbladder, there are adhesions elsewhere, as to the liver, which are not very extensive, cholecystectomy with separation of the additional adhesions and precautions against their recurrence will, as a rule, give satisfactory results. In a similar manner, light adhesions in this region, complicating duodenal ulcer, without involvement of the gallbladder, may be merely separated with quite satisfactory results. This has occurred even when the light adhesions involved the pylorus.

In most cases with adhesions to an otherwise apparently normal gallbladder, pathologic examination of that organ after removal will show it to be more or less diseased.

It has been a curious fact in our experience that when a duodenal ulcer with adhesions to the gallbladder was found and was treated by excision and pyloroplasty with merely separation of the adhesions, and when the symptoms have later returned, a subsequent cholecystectomy does not guarantee freedom from recurrence of adhesions and symptoms. In such cases it sometimes becomes necessary to perform a gastro-enterostomy. We have had one such case. When adhesions in the region of the pylorus and duodenum are very extensive, successful results can be obtained only after relative immobilization of this area by a gastro-enterostomy. In one case with gastric ulcer and extensive adhesions on the lesser curvature and slight adhesions near the pylorus, pyloroplasty alone gave perfect results.

In our series an important factor controlling successful results after pyloroplasty is not the recurrence of ulcer, but the development of peripyloric adhesions, and procedures toward eliminating the latter have been found to improve the ultimate results.

CONCLUSIONS

It is evident that stereotyped procedures have no place in the treatment of gastric and duodenal ulcer. Each case must be considered on its own merits. That there are early ulcers which can be successfully treated medically, no experienced internist or surgeon will deny. But because of this fact, one should not blindly endeavor to treat all ulcers solely by medical methods. As well attempt to cure an indolent ulcer of the leg by rest and elevation for twelve months or longer, when the same results can be more effectively accomplished in twelve days by the proper surgical procedure. There has been a tendency among internists to treat gastric ulcers only by medical methods, and among surgeons always to operate. The best interests of the patient require closer cooperation between surgeon and internist than has hitherto been the vogue. If it has been decided that a case should be treated surgically, the method best fitted to the condition found at operation should be chosen. Routine gastro-enterostomy in all ulcer cases will give as unsatisfactory eventual results as routine pyloroplasty. It is an unsuccessful workman who tries to accomplish all of his work with but one tool or method.

It must be remembered that the treatment of the patient with duodenal or gastric ulcer is not completed with the operation. Appropriate medical supervision should be continued for a long period to prevent additional damage. The patient's general condition must be studied and treated. Infection elsewhere should be eliminated. The patient's resistance must be built up and the diet carefully controlled to prevent renewed insults to the convalescing organ.

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RADIUM IN CANCER OF THE PROSTATE

A REPORT OF TWO HUNDRED AND SEVENTEEN CASES *

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The enthusiastic reports of results from the treatment of cancer of the prostrate with radium indicate the need of careful analyses of large series of such cases in which treatment has been carried out for several years.

There are records at the Mayo Clinic of 729 patients with carcinoma of the prostate; 217 of these have been treated with radium during the last seven years, and 363 have not been treated. The number of patients treated by radium is sufficiently large to afford valuable statistical data with regard to the treatment, and the patients who were not treated afford a record of the normal course of the disease, thus making a basis on which to compare results.

Before treating patients with carcinoma of the prostate with radium, or judging the results of such treatment, metastasis must be excluded. The frequency with which metastasis occurs in these cases is not fully appreciated unless routine roentgenograms are made. In 297 of the series, plates were made of the chest, spine or pelvis, and in eighty-four (28.28 per cent.) metastasis was demonstrated, the greater number most commonly in the lumbar sacral region. Sixty-one of 218 roentgenograms of the spine and pelvis showed metastasis, and only eight of 169 roentgenograms of the chest showed metastasis. As a matter of fact, it is unnecessary to search the chest for evidences of metastasis, since it probably never occurs there unless it is also in the pelvis or lumbar spine. I have already [1] called attention to the fact that such metastasis often occurs without symptoms, before the appearance of cachexia, and in patients whose prostate glands are comparatively small. The detection of metastasis in 28 per cent. of all patients examined reduces materially the indications for radium treatment. From the facts that 73 per cent. of 113 patients with metastasis examined at the Mayo Clinic died during the ensuing year, and the average length of life after examination was seven months, it does not seem justifiable to treat a patient with radium simply for the local effect obtained on the original growth. Exception to this might be made if the local results of radium treatment could be depended on to relieve obstruction, diminish residual urine, or relieve pain. Although in occasional cases benefit is obtained in one or more of these ways, our experience has not been such as to warrant giving radium for these conditions alone when there is no hope of prolonging the patient's life. A permanent urethral catheter or simple suprapubic drainage gives better immediate results and is less trying to the patient than are large doses of radium.

TABLE 1.—DATA ON 241 OF 363 PATIENTS WITH CARCINOMA OF THE PROSTATE NOT TREATED

	Patients	Per Cent.	Total Length of Disease, Months	Metastasis	No Metastasis	Length of Life After Examination, Months
Heard from.........	241	66.39	32.04	80	161	10.41
Dead...............	229	95.02	32.29	75	154	9.14
Living.............	12	4.97	22.83	5	7	34.5
Patients dead, 229						
Lived from:						
1 to 12 months	171	74 67	27.95	55	116	4.63
13 to 24 months	41	17.9	42.7	17	24	17.19
25 to 36 months	9	3.93	40.44	1	8	29.11
37 to 48 months	3	1.31	76.0	..	3	44.3
49 to 60 months	2	0.87	68.0	..	2	52.0
72 to 84 months	1	0 43	.....	..	1	78.0
Not stated.....	2	0.87	.....	2		
Patients living, 12						
Living from:						
1 to 12 months	7	58.33	21.83	5	2	9.42
13 to 24 months	1	8.33	.....	..	1	21.0
37 to 48 months	1	8.33	.....	..	1	41.0
49 to 60 months	1	8.33	.....	..	1	55.0
85 to 96 months	1	8.33	.....	..	1	90.0
133 to 144 months	1	8.33	.....	..	1	141.0

TABLE 2.—RADIUM TREATMENT IN PATIENTS WITH CARCINOMA OF THE PROSTATE

	Patients	Per Cent.	Average Length of Disease, Mos.	Average Mg. Hours Given by			Average Total Mg. Hours	Average Length of Life After Rtdium, Months
				Needles	Rectum	Urethra		
Heard from.....	152	70.04	40.65	1325.1	765.84	249.23	1694.2	15.0
Dead...........	118	77.63	37.76	1236.39	838.4	252.0	1634.34	12.36
Living.........	34	22.36	51.03	1597.77	535.58	244.75	1898.41	23.32
Patients dead, 118								
Lived from:								
1 to 12 mos.	72	61.01	33.86	1138.25	619.98	237.76	1429.5	6.77
13 to 24 mos.	26	22.03	41.0	1313.89	839.15	303.33	1644.53	17.34
25 to 36 mos.	10	8.47	52.75	2505.75	1488.2	219.0	2623.1	28.7
37 to 48 mos.	3	2.54	93.0	2062.0	3456.66	550.0	4327.3	41.33
Not stated..	7	5.93						
Patients living, 34								
Living from:								
1 to 12 mos.	9	26.47	29.62	1470.0	400.0	224.25	1358.22	8.77
13 to 24 mos.	12	35.29	55.54	1760.33	477.45	254.54	2431.33	18.33
25 to 36 mos.	8	23.52	51.85	1566.25	313.33	220.0	1923.75	29.5
37 to 48 mos.	1	2.94	96.0	1000.0	....	......	1000.0	45.0
49 to 60 mos.	4	11.76	71.33	1136.0	1300.0	400.0	1684.0	52.32

If patients with glandular metastasis alone are added to the 28 per cent. of patients whose metastasis is detected by the roentgen ray, it seems a conservative estimate that one third of all patients with carcinoma of the prostate will be unfit subjects for radium treatment because of metastasis. In the remaining two thirds, many complain of pain of recent onset, in the lower back, often with radiation down the outside of the thigh or around the hips. Such pain is pathognomonic of involvement of the lymph nodes of the sacral promontory and aorta which drain the prostate, and because of their deep-seated location are not demonstrable by physical examination. More often patients complain of recent attacks of sciatica, evidence of periprostatic extension of the malignancy. Our experience agrees with Barringer's,[2] that the irritation pro-

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* Because of lack of space, this article is abbreviated in The Journal by the omission of three illustrations. The complete article appears in the author's reprints.

[1] Bumpus, H. C., Jr.: Carcinoma of Prostate, Surg., Gynec. & Obst. 32: 31-43 (Jan.) 1921; Radium Therapy in Cancer of the Prostate, M. Clin. N. Am. 5: 707-712, 1921.

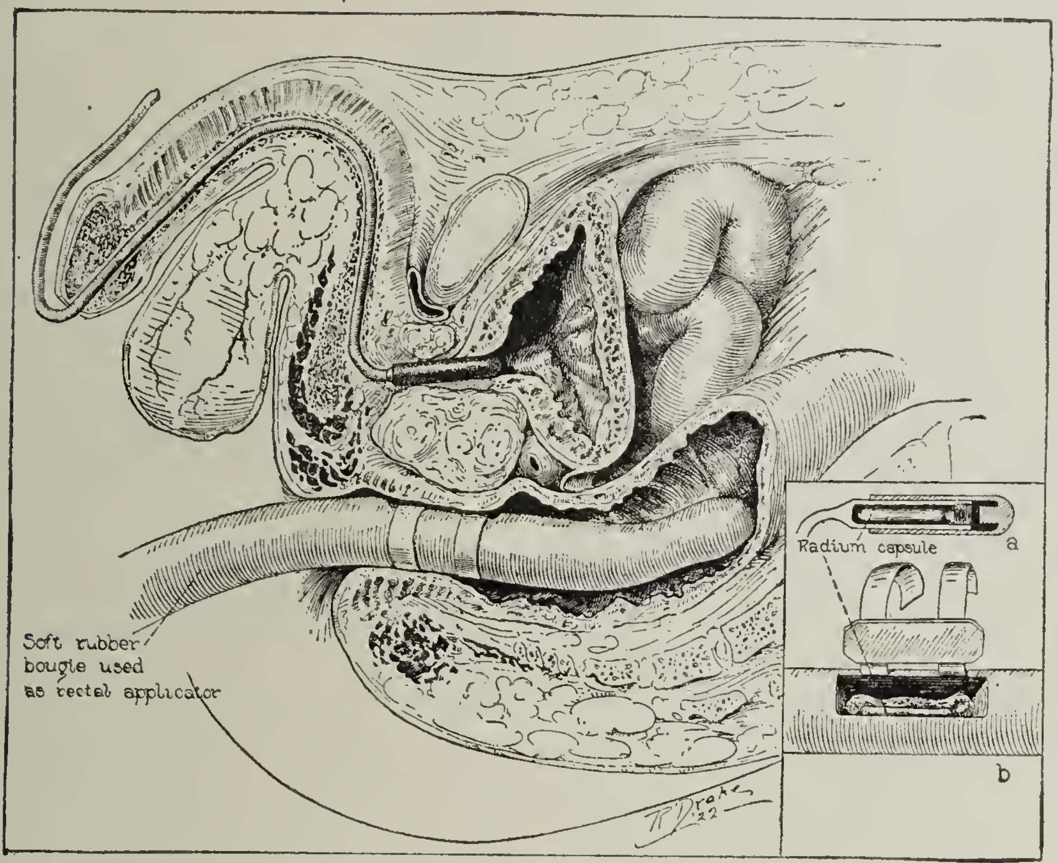
[2] Barringer, B. S.: Radium in Treatment of Carcinoma of the Bladder and Prostate: Review of One Year's Work, J. A. M. A. 68: 1227-1230 (April 28) 1917; Carcinoma of Prostate, Surg., Gynec. & Obst. 34: 168-176 (Feb.) 1922.

duced by nerve pressure is uninfluenced by radium treatment, even if the tumor is considerably reduced in the prostatic area.

Besides patients with demonstrable metastasis are those whose renal function has been reduced by obstruction and whose general physical condition is such that treatment by radium is contraindicated. Such treatment is not without danger, and if sufficiently large doses of radium are given an added burden is necessarily thrown on the excretory mechanism. The tissue destroyed by the radium must be absorbed and eliminated, and if this task is added to an already deficient renal mechanism the result may prove fatal. Therefore, before undertaking the destruction of a malignant prostate by radium, the urea content of the blood should be determined and the usual tests of renal function should be taken as before surgical procedures. Small doses of radium may be given without great danger; but, if sufficient amount is applied, renal function must be adequate to handle the absorbed tissue. I believe that after excluding the several types of cases referred to, radium treatment will be indicated in considerably less than half of the cases examined.

Often in reporting the results of treatment of malignant disease, emphasis is placed on the number of patients who have lived for an arbitrary period of years, three or five, such patients being referred to as three-year or five-year cures. It is disregarded that in every 100 cases of malignant disease a certain number of patients will live very much longer than the average duration of the disease. This is particularly true in cancer of the prostate, in which the malignancy may progress slowly. In the series of 363 untreated cases, ten patients have lived more than three years after the diagnosis of cancer without any form of treatment. The average length of the disease in this series was determined and used as a basis of comparison for the results of radium treatment. Likewise, the length of time the untreated patients lived after examination may be compared with the length of time the patients lived after having received radium. Successful radium treatment must inhibit the progress of the malignant process to the extent of appreciably prolonging life beyond the time the patient might be expected to live. Records concerning 241 of our 363 untreated cases show that the patients have lived on an average of ten months after examinations and that the total duration of their disease was approximately thirty-two months from the date of the first symptoms. These data are derived from a sufficiently large series to be considered significant, and will be used as a basis for comparison of results obtained by radium treatment.

The fact that radium emanation permanently destroys cancer cells is accepted. However, it is not so well understood that the effect desired is not complete destruction of these cells, with the resulting necrosis and slough, but disintegration of the nuclei so that they lose their power of reproduction. A dosage sufficient to cause this, rather than destruction of tissue, stimulates fibrosis and hyalinization, thus walling in the altered cancer cells, compressing them into distorted and flattened shapes, and preventing their further spread. In order successfully to treat prostatic malignancy, radiation must be brought into contact with every part of the growth. Success or failure depends on the ability to reach all parts of the neoplasm with a comparatively small dosage. To give one treatment and then advise the patient to return in two or three months for further treatment is illogical, since, if the malignant cells are reached by the first treatment, the second will be unnecessary. If the cells have not been reached, the length of time before the second treatment may permit the malignant process to extend beyond hope of cure or benefit. A second point against such series of treatment is the fact that the formation of the fibrous tissue diminishes the blood supply so that necrosis and sloughing are far more liable to occur after a second exposure. To illustrate this, I divided the 217 patients treated with radium into three groups: Group 1, patients treated by rectum and by urethra; Group 2, patients treated by needles inserted directly into the growth through the perineum; Group 3, patients treated by a combination of the two methods.



Sagittal section of pelvis, showing solder urethral applicator and soft rubber rectal applicator in place; *a*, cross section of head of urethral applicator showing radium capsule and brass container with hard rubber shield in position for attachment; *b*, section of soft rubber bougie rectal applicator, showing window for carrying of radium capsule.

RESULTS OF TREATMENT

Group 1. The radium used was in the form of a 50 or 100 mg. capsule. At first a lead and brass shield was used in the rectal applicators; in the urethral applicators the standard silver container was the only filter. Both proved unsatisfactory, and, after several applicators had been tried, the following was adopted: A No. 10 soft rubber rectal bougie marked off in centimeters, with a window cut in the side to hold the radium tubes, is used in making applications by rectum. The size of the bougie keeps the rectal mucosa, except the area to be exposed, sufficiently far away to reduce the exposure to a minimum, and does not cause the secondary beta rays that occur when the metal shields are used. The bougie is inserted first so that the window is in the vesical area. Each hour it is withdrawn 1 cm. to expose new areas of mucosa. This method has proved less irksome to the patient than a stationary applicator attached to bed or table. For urethral work, nothing has proved so satisfactory as a rubber covered brass receptacle attached to a piece of soft solder. The flexibility of the solder permits any curve of the prostatic urethra to be met, and enables the application to be applied at several areas. The applicator is withdrawn the length of the capsule each time, and the handle, bent over at the urethral meatus, affords fixity of position.

The amount of radium given by these methods has varied, since the treatments were given in the earliest cases. The rectal and urethral applications were alternated. The rectal dosage averaged 1,482 mg. hours, and the urethral 217. The rectal dosage represents overirradiation. Experience has since taught that from 400 to 600 mg. hours represents the maximum of safety in rectal applications, especially if needles have also been used and the mucosa thus cross-fired. However, fifty patients were treated by this method, and completed records have been obtained from forty. They lived an average of seventeen months after treatment, and an average of forty-five months after the onset of symptoms. The method was discontinued because of the proctitis produced by overdosage, and the method described by Dr. Barringer of the Memorial Hospital, New York, was adopted, that is, applying the radium directly to the substance of the gland by means of needles. The Memorial Hospital very kindly supplied us with such emanation-bearing needles.

Group 2. Thirty-seven patients were treated by inserting needles directly into the gland through the perineum. The average dosage was approximately 2,000 mg. hours. Completed records of twenty-seven patients show that they lived an average of fourteen months after treatment, and that the duration of the disease from the onset was forty-five months, slightly longer than the average for patients not treated. These poor results are explainable by the fact that by abandoning the rectal and urethral applications the periphery of the growth, where the greatest cell activity occurs, was not thoroughly irradiated. The needles were allowed to remain long enough in one location to destroy the malignant tissue immediately around them, but the tissue was only slightly affected beyond. The radium rays, like light, diffuse as they leave their source, and their effect diminishes progressively. Therefore, instead of stimulating fibrosis and hyalinization, the natural barriers of malignancy, destruction of only limited areas of malignant tissue had resulted. At the Memorial Hospital, New York, results of the work with buried emanation tubes have shown that 0.5 millicurie of emanation, when buried in tumor tissue, affects an area approximately 1 cm. in diameter, and that to increase this dosage to three or four times this amount does not increase the area irradiated appreciably, but causes marked destruction of cancer tissues with resulting necrosis. Each half millicurie emits 66 millicurie hours; this is equal to a needle containing 12.5 mg. radium in place for five hours. Therefore, keeping needles containing 12.5 mg. in one position for from twelve to twenty-four hours causes localized necrosis and sloughing. The desired minimal dosage is obtained by leaving a needle bearing 12.5 mg. of radium in one position for five hours, and then withdrawing it 12 mm., the length of the radium-bearing portion, in order to irradiate a second area 1 cm. in diameter. By using four needles at once and changing their position three times, twelve such areas, or twenty-four areas in two treatments, will be irradiated, affording approximately 1,500 mg. hours of irradiation. If to this, 600 mg. hours in the rectal exposure and 400 mg. hours in the urethral exposure are added, the maximum of malignant tissue is affected. In this way it is possible to avoid the necessity of giving from 4,000 to 5,000 mg. hours of exposure, with the danger of slough and fistula formation, and the so-called radium reactions incident to heavy dosage, which are really due to absorption of the toxic necrotic tissue destroyed. It has been our experience that approximately 2,500 mg. hours is the maximal dose that may be safely given, even in the largest glands, without producing sloughs.

Group 3. On the supposition that the poor results obtained from the use of rectal and urethral exposures alone, or from the use of needles alone, was attributable to the fact that not all of the cancer cells were reached by the radium emanations, the last 127 patients were treated by a combination of the three methods. The completed records of eighty-three patients show that the average dose of radium was 1,960.45 mg. hours. Sixty patients (72.28 per cent.) are dead; they lived an average of eleven and twenty-five hundredths months after treatment; 66 per cent. died the first year. The duration of the disease in the patients who died (thirty-three and sixty-seven hundredths months) is approximately the duration of the disease in the untreated patients; twenty-three (27 per cent.) are alive, the duration of the disease having increased to forty-seven and thirty-three hundredths months, and the time since their last treatment to twenty months, an extension approximately of one year in each.

Since only eight of the 217 patients treated with radium are alive after three years, it will be seen that the results are far from satisfactory. However, the average extension of life for one year as a result of the combined method of administration is significant, and demonstrates that by careful selection of cases and care in irradiating all portions of the gland, better results may be expected in the future. The fact that 27 per cent. of the living patients are now in their third year after treatment, and that a number do not show evidence of malignancy either by palpation or by symptoms, while only 8 per cent. of untreated patients survive to their third year, prevents the abandonment of this form of therapy. The results emphasize, however, that the treatment is applicable only to a selected few; to apply it to all patients with carcinoma of the prostate is to encourage false hopes and cause results disheartening to both patient and physician.

CONCLUSIONS

1. Radium therapy should be applied in less than one half of the patients with carcinoma of the prostate.
2. One third of all patients with carcinoma of the prostate will be found to have metastasis at the primary examination.
3. Complete and thorough irradiation of all portions of the neoplasm with minimal doses applied from many locations affords better results than maximal doses applied from a few locations.
4. Prolongation of life can be expected in only one fourth of the patients treated.

THE FUNCTIONAL CAPACITY OF THE HEART DURING HEMORRHAGE *

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The physiologic reactions to hemorrhage are so well known that they need not be discussed in detail at this time. Briefly outlined, they consist in (*a*) an increase in the frequency of the heart, which tends to maintain the general pressure by an augmentation in the cardiac output per unit of time; (*b*) a faster respiratory rate, increasing the ventilation in the lungs as well as the venous return, and (*c*) a constriction of the distal blood vessels, which diminishes the caliber of the vascular system and heightens the peripheral resistance. This change compensates for the gradual decrease in the viscosity of the blood brought about by the transfer of a certain quantity of lymph into the general vascular system.

The experiments of Johansson and Tigerstedt [1] are based on cardiographic readings, obtained by connecting the pericardial sac with a piston recorder. Wiggers [2] employed pulse pressure tracings in relation with records of the volume output of the heart as ascertained by means of a cardiometer. As a decided reduction in the filling power of the ventricles did not result until after the completion of a definite latent period, it was assumed by this author that the reduction in the venous inflow which one would naturally expect to develop after a hemorrhage is compensated for at first by a discharge of all superfluous amounts of blood from the venous cisterns. As has been pointed out by Krogh,[3] the portal system is peculiarly adapted to serve as a reservoir of this kind.

It seems, however, that the presence of venous cisterns is not essential to the preservation of the venous flow into the heart, because the evidence pertaining to the constriction of the peripheral vessels is sufficiently convincing to explain this phenomenon on this basis. Thus, Hooker [4] has recently succeeded in demonstrating a varying filling power on the part of the capillaries and venules, while Meek and Eyster [5] have shown by a similar method that an almost instantaneous whitening of the integument results when the hemorrhage has reached a certain stage. It appears, therefore, that the blood vessels of the integument respond actively at a certain stage of a hemorrhage in an endeavor to keep the circulatory conditions as near normal as possible.

Meek and Eyster have attempted to obtain a measure of the diastolic size of the heart and, therefore, of the cardiac filling by a series of examinations of the hearts of dogs by means of the roentgen rays. This procedure necessitated the taking of successive roentgenograms before as well as after definite amounts of blood had been withdrawn from the femoral artery. Care was taken to retain each animal in precisely the same position throughout the experiment. It was found that the diastolic size of the heart is maintained even after a considerable quantity of blood had been removed. Only after the average loss equaled 2 per cent. of the body weight or from 11 to 28 per cent. of the blood volume could a decrease of more than 5 per cent. in the heart's shadow be definitely established. When the loss of blood amounted to about 2 per cent., a rather sudden reduction in the diastolic heart size was noted.

The relative constancy of the shadow is supposed to show that the heart secures an adequate return of venous blood for some time after considerable quantities of blood have been removed. By inference it may then be concluded that the ventricles maintain their normal degree of distention under these circumstances. Their frequency of contraction remains practically the same until a considerable quantity of blood has been lost. It is obvious that a marked acceleration must definitely decrease the cardiac silhouette, although Meek and Eyster have also observed the latter phenomenon when not associated with acceleration. An explanation for this dissociation is not offered by these authors. It will become apparent in the course of this paper that it is due to a simple reduction in the filling of the heart.

This view, that bleeding impairs cardiac filling, has been advocated by Henderson,[6] Mann [7] and others, chiefly on the basis of cardiographic tracings. It is assumed that the peripheral circulatory channels are depleted, thereby rendering the venous return inadequate. Obviously, the cardiac output must suffer a corresponding diminution, because the increase in the frequency of the heart cannot compensate for the venous deficiency.

Several years ago I studied this particular subject-matter with the help of stereoscopic photographs of the exposed dog's heart taken at different moments of the cardiac cycle. The animal was placed horizontally, its heart being covered with a square frame of metal to which were fastened a number of cross wires at distances of 1 cm. from one another. These photographs showed that the lateral dimensions of the heart are only moderately shortened during hemorrhage. The organ as a whole, however, assumes a much softer consistency, permitting it to adjust itself more closely to the resistant surface of the spinal column. In order to avoid this mechanical effect, the animal was eventually placed in a nearly vertical position. The effects of gravity on the blood flow and pressure I sought to diminish by first establishing a direct communication between the carotid artery and jugular vein of each side, as well as by bandaging the abdomen.

These photographs did not show a significant reduction in the size of the diastolic heart, although the loss of blood amounted to about 1 to 2 per cent. of the body weight. More recently I have repeated these experiments on cats, outlining their hearts with the aid of calipers. While the results obtained with this method are not free from objections, owing to certain incontrollable errors in technic, it was easily noted that relatively large quantities of blood had to be withdrawn before an appreciable reduction in the size of the diastolic heart could be established.

It is generally stated that the rate of the heart is not materially increased until considerable amounts of blood have been lost. Accordingly, it might be assumed that the cardiac filling is not seriously impaired during the early stage of a hemorrhage. This retention of the venous inflow would enable the heart to preserve its normal outlines, thereby rendering the direct and indirect determinations of its volume practically valueless. During this early period the compensation would be effected by the peripheral vessels, i. e., by an active adjustment of their caliber to the quantity of blood still circulating.

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* From the physiologic laboratory of Columbia University.

[1] Johannson and Tigerstedt: Skand. Arch. f. Physiol. **1**: 331, 1889.

[2] Wiggers, C. J.: The Pathologic Physiology of the Circulation During Hemorrhage, Arch. Int. Med. **14**: 33 (July) 1914.

[3] Krogh: Skand. Arch. f. Physiol. **27**: 227, 1912.

[4] Hooker, D. R.: Am. J. Physiol. **54**: 30 (Nov.) 1920.

[5] Meek, W. J., and Eyster, J. A. E.: Am. J. Physiol. **56**: 1 (May) 1921.

[6] Henderson: Am. J. Physiol. **21**: 126, 1908. Henderson and Barringer: Ibid. **31**: 288, 1913. Henderson, Barringer and Harvey, Ibid. **46**: 533 (Aug.) 1918.

[7] Mann: Bull. Johns Hopkins Hosp. **25**: 205, 1915.

The correctness of this assumption I have tested by the direct calibration of the venous supply of the heart and the simultaneous registration of the arterial and venous pressures. Large cats in ether narcosis were used for these experiments. The chest having been opened, a current measurer or stromuhr was inserted in the inferior vena cava in close proximity to the heart.[8] The arterial pressure was ascertained in the left carotid artery, and the venous pressure in the inferior cava centrally to the instrument measuring the blood flow. The record of a Jaquet chronograph served as the abscissa for these tracings.

TABLE 1.—RESULTS OF EXPERIMENT 2 *

Phase of Stromuhr	Time, Sec.	Blood Flow, C.c.	Blood Flow, per Sec.	Blood Pressure, Mm. Hg: Carotid Artery	Blood Pressure, Mm. Hg: Inferior Vena Cava	Procedure
11	5.7	18.8	3.29	92.3	1.5	
12	5.4	18.8	3.48			
13	5.8	19.5	3.36	93.4	...	Loss of blood, 5 c.c.
14	6.0	19.5	3.25			
15	6.0	19.8	3.30			
16	5.9	19.8	3.35	92.0		
27	5.9	19.5	3.30	92.5	1.5	
28	6.0	19.5	3.25			
29	5.9	19.5	3.30	....	...	Repeated 1 minute later
30	5.9	19.5	3.30			
31	5.8	19.5	3.36	92.0		
32	5.9	19.5	3.30			
40	6.2	19.5	3.11	90.4	1.5	
41	6.1	19.5	3.19	....	...	Repeated 1 minute later
42	5.6	19.0	3.39	91.6		
43	5.7	19.0	3.33			
44	5.7	19.0	3.33			
45	5.6	18.5	3.30	90.5	1.5	

* Cat: weight, 4 kg.; heart, 22 gm.; frequency, 161 a minute.

The procedure followed in each of these ten experiments consisted in ascertaining the normal caval blood stream as well as the pressures before and after the withdrawal of varying quantities of blood. The blood was collected from either the left carotid or the left femoral artery. The hemorrhages lasted anywhere from a few seconds to several minutes. The quantity of the total amount of blood was estimated at one thirteenth of the body weight.

In Table 1 are presented the data pertaining to a portion of Experiment 2. They are intended to illustrate the effects of several slight hemorrhages repeated at intervals of one minute. It will be seen that these bleedings, amounting to 5 c.c. each time and to a total loss of 15 c.c., or to about 0.4 per cent. of the body weight, did not evoke clearly recognizable changes in the filling of the right auricle or in the height of the arterial and venous pressures.

As has been stated above, this adaptation of the system to the gradual loss of a relatively small amount of blood is said to be brought about by the constriction of the peripheral vessels and the transfer of a certain quantity of tissue fluid into the general vascular channels. It appears, however, that the second factor plays only a secondary part in the maintenance of the venous inflow. Thus, while the determinations[9] pertaining to the changes in the viscosity and specific gravity of the arterial blood after hemorrhage have shown that these factors suffer a clearly recognizable reduction in consequence of hemorrhage, the differences did not assume significant proportions at any time. The greatest diminution in the specific gravity amounted to 0.005, and the greatest reduction in the viscosity to 162.3 points. Furthermore, it required an interval of from twenty to thirty minutes before these changes could be clearly recognized by the methods at present at our disposal, and secondly, the most striking alterations appeared only after the amount of blood lost equaled from 20 to 30 per cent. of the body weight. Nevertheless, it seems certain that these reductions developed very shortly after the hemorrhage, and steadily increased up to the time when these viscosity determinations were made. If allowance is made for the progressive character of these changes, it will be seen that they cannot begin to influence the circulation in an effective manner until some time after the hemorrhage. Accordingly, since the experiments that I am here reporting were always completed within twenty minutes after the hemorrhage, this entrance of tissue fluid into the general vascular system cannot be the deciding factor in the maintenance of auricular filling after slight hemorrhages. The only other factor is the active regulation of the caliber of the peripheral vessels.

I am pleased to note that the more recent experiments of Scott,[10] Richet, Brodin and Saint-Girons,[11] and Meek and Eyster have yielded results which very closely agree with mine. Thus, Scott has found that, fifty-nine minutes after a hemorrhage of 206 c.c., the hemoglobin indicated an intake of only 23 c.c. from the tissues. Meek and Eyster, who finally resorted to determinations of the specific gravity by means of the method of Hammerschlag, report that, after hemorrhages equaling from 15 to 25 per cent. of the blood volume, this value showed a decline of only 0.002. Since this difference indicates a replacement of less than 5 per cent. of the blood volume, the inflow of tissue fluid cannot serve as a significant means of restoring the blood volume within the time required for the completion of these experiments.

TABLE 2.—RESULTS OF EXPERIMENT 6 *

Phase of Stromuhr	Time, Sec.	Blood Flow, C.c.	Blood Flow, per Sec.	Blood Pressure, Mm. Hg: Carotid Artery	Blood Pressure, Mm. Hg: Inferior Vena Cava	Procedure
15	6.0	18.5	3.08	94.6	1.0	None
16	6.0	18.5	3.08	....	1.2	
17	6.4	19.5	3.04			
18	6.2	19.5	3.14			
19	6.0	19.0	3.16	89.2	1.0	Loss of blood, 40 c.c.; frequency, 182
20	6.4	19.0	2.96			
21	7.0	19.0	2.71			
22	7.0	19.0	2.71			
23	7.2	18.8	2.61			
24	7.0	18.8	2.68			
25	7.1	19.0	2.67	92.0	1.0+	
26	6.4	19.0	2.79			
27	6.4	18.5	2.90			
28	6.2	18.5	2.98	92.5		
29	6.4	18.8	2.95	....	...	Loss of blood repeated

* Cat: weight, 3.8 kg.; heart, 20 gm.; frequency, 162 a minute.

In Table 2 are presented the data pertaining to a section of Experiment 6. They are intended to illustrate the changes resulting in consequence of hemorrhages amounting to about 1 per cent. of the body weight. Table 3 gives the results of continuous hemorrhages, amounting finally to more than 50 per cent. of the total amount of blood.

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[8] Burton-Opitz, R.: Am. J. Physiol. **58**: 226 (Dec.) 1921.

[9] Burton-Opitz, R.: Arch. f. d. ges. Physiol. **82**: 31, 1900.

[10] Scott: J. Physiol. **50**: 157, 1915.

[11] Richet, Brodin and Saint-Girons: Comp. rend. Acad. d. sc. **166**: 587, 1918.

It will be seen from these tables that the frequency of the heart increases appreciably when the loss of blood reaches a value approximately 0.5 per cent. of the body weight. From now on may also be observed a slight reduction in the venous supply of the heart and venous pressure. The carotid pressure also presented a general decline, although it rarely assumed the value of 10 mm. of mercury. This second stage of the hemorrhage was usually initiated by a brief period during which the systolic pressure rose slightly above normal, this augmentation being due in all probability to the greater cardiac rate and still adequate vasomotor compensation. It should also be noted that the bleeding from the carotid artery proved more effective than that from the femoral artery.

TABLE 3.—RESULTS OF EXPERIMENT 8*

				Blood Pressure, Mm. Hg		
Phase of Stromuhr	Time, Sec.	Blood Flow, C.c.	Blood Flow, per Sec.	Carotid Artery	Inferior Vena Cava	Procedure
5	6.8	19.0	2.79	98.6	2.0	None
6	6.8	19.0	2.79			
7	6.9	19.0	2.75			
8	7.1	19.5	2.74			
9	7.2	19.5	2.70			
10	6.9	19.5	2.82			
Average			2.76	98.6	2.0	Hemorrhage, continuous, from femoral artery
11	7.0	19.5	2.77			
12	7.0	19.5	2.77			
13	6.8	18.8	2.76	102.3	2.0+	
14	6.7	18.8	2.77			
15	6.9	19.0	2.75	100.6		
16	6.7	19.0	2.83			
17	6.7	19.0	2.83			
18	6.8	19.0	2.79	97.5	2.0—	
19	6.9	18.8	2.72	....	...	Loss of blood, 20 c.c.; cardiac rate, 165
20	6.9	18.8	2.72	94.6		
21	7.0	18.8	2.68			
22	7.2	18.8	2.61	92.4	1.0	Loss of blood, 40 c.c.; cardiac rate, 176
23	7.5	19.0	2.53	86.7		
24	8.0	19.0	2.37			
25	8.0	19.5	24.3			
26	8.5	19.5	2.29	72.8	0.5	
27	8.8	19.5	2.21			
28	10.5	19.5	1.85	64.0	...	Loss of blood, 80 c.c.; cardiac rate, 189
29	10.0	18.8	1.88			
30	10.0	18.8	1.88			
31	12.0	19.5	1.62	54.1		
32	12.2	19.5	1.59			
33	12.8	19.5	1.52	50.3	...	Loss of blood, 120 c.c.; cardiac rate, 185
34	12.9	19.5	1.51	....	0.5—	
35	12.6	18.8	1.49			
36	15.4	18.8	1.22			
37	16.3	19.0	1.16	36.2	...	Loss of blood, 160 c.c.; cardiac rate, 52
38	17.5	19.0	1.08			
39	17.6	19.0	1.07			
40	10.5	19.0	1.80	64.5	1.5	Injected an equal quantity of saline solution, repeated experiment
41	7.5	19.0	2.53	84.6	1.5+	
42	7.4	19.0	2.54			

* Cat: weight, 3.8 kg.; heart, 20 gm.; frequency, 158 a minute.

Recovery of the normal was usually complete within five minutes after a small hemorrhage. As has been stated above, this compensation should be ascribed to vascular adaptations and not to a replacement of the blood lost by an equal amount of tissue fluid. The fact that these small hemorrhages actually gave rise to a clearly recognizable diminution in the venous return, and did not lead to an appreciable reduction in the size of the heart as ascertained by means of the stereoscope, calipers and roentgen rays, proves convincingly that the planometric alterations in its mass are counteracted by certain peculiarities in its structure. In other words, the factor which should be held responsible for the retention of the contours of this organ after hemorrhage is resident in its tissues and not in the peripheral circulation. Clearly, our inability to discern planometric differences in the heart after a moderate hemorrhage cannot be ascribed to a maintenance of ventricular filling, because the present experiments show that the venous supply is diminished. Since the heart endeavors to compensate for this deficiency by contracting more frequently, its output per beat must become smaller, although its total discharge per unit of time need not be reduced until the venous return has been materially decreased.

While cardioplethysmographic tracings are by no means free from objections, because they cannot be employed as a direct measure of the ventricular output, it is of interest to note that Henderson, as well as Meek and Eyster, has succeeded in demonstrating recognizable reductions in the volume curve of the heart of dogs at a time when the hemorrhage amounted to less than 1 per cent. of the body weight. Obviously, the cardiograph is a more suitable instrument than are planometric appliances for detecting these volumetric changes. It more clearly depicts those alterations in the mass of the heart which arise in consequence of a general loss of its compactness.

Continuous slow bleeding produces finally the same results as an equally severe rapid hemorrhage. The initial reduction in the venous return, which becomes clearly apparent when the loss of blood reaches the value of 0.5 per cent. of the body weight, is associated with an increase in the frequency of the heart. The latter persists until the arterial pressure has reached a level about one third of normal. It is obvious that the impaired filling of the auricles cannot be fully compensated for by the increase in the cardiac rate, and, hence, the output per beat and per unit of time must finally be greatly diminished. Thus, while the arterial pressure is well retained during the early stages of a hemorrhage, and may, in fact, rise a few millimeters above normal, it must decrease as soon as the filling of the cardiac chambers has been seriously impaired. In the experiments here under discussion, this decompensation set in when the loss of blood equaled about 1 to 1.5 per cent. of the body weight, or slightly less than one fourth of the total amount of blood.

The second stage of a hemorrhage is followed by a period during which the decompensation continues until the gradual loss of blood to one third and one half of the total quantity causes the venous supply to suffer a corresponding decrease. A steady decline of the carotid and venous pressures to about one third of normal are the most evident symptoms of this stage. The mucous membranes whiten perceptibly at the beginning of this stage, when the loss of blood approximates one fourth of the total.

One may also recognize a fourth stage of hemorrhage. It is characterized by the symptoms of cardiac failure. The heart then reveals a marked diastolic tendency, which is associated with very low arterial and venous pressures. In the experiment here cited, the amount of venous blood returned to the heart through the inferior cava during the third stage measured only 1.22 c.c. a second, as against the normal volume of flow of 2.76 c.c. a second. This decline continued steadily until the frequency of the heart had been reduced to about 50 beats to the minute and the caval blood stream to 1.06 c.c. a second.

It has long been recognized that the phenomena of dyspnea and asphyxia may be closely imitated by bleeding. It is easily conceivable that the results of a diminished venous supply of the heart affect the oxidations of the tissues essentially in the same manner as mechanical and chemical interferences with pulmonary ventilation. Stress has also been placed on the fact that the movements of respiration, and the changes in intrathoracic pressure evoked thereby, serve as a distinct aid to the return of the venous blood and, hence, also to the cardiac output. The changes in the character of the respiratory movements observed during hemorrhage are so well known to the clinician that they need not be enumerated in this place. Their purpose is to augment the total quantity of the respiratory air in an attempt to overcome the diminished venous supply and arterial discharge of the heart occasioned by the hemorrhage.

In the experiments here under discussion, the respiratory factor has been eliminated by the opening of the chest and the institution of rhythmic artificial respiration. It is obvious, however, that normal respiration cannot materially alter the effects of hemorrhage as outlined above, because the respiratory movements usually pursue a course parallel to the action of the heart.

Since these experiments furnish direct proof for the view that the venous supply of the heart is diminished during hemorrhage, the conception of Zuntz[12] and his pupils, tending to equip the heart with the power of altering its amplitude of contraction independently of its rate, so as to retain its normal output, cannot be seriously considered in this connection. Under the conditions described above, the heart cannot continue to discharge normal quantities of blood, because, quite aside from its diastolic capacity, it cannot obtain the amount of venous blood required for its proper filling.

DISEASE OF THE OTOLITH APPARATUS

REPORT OF CASE *

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It has been thought that the semicircular canals have to do with the perception of rotatory movements, and that the otolith organs have to do with the perception of rectilinear motion. A concept which has not been fully established by experimental data is that the flow of the endolymph induced by rotation causes a displacement of the cupola on the crista ampullaris of the canal or canals affected, and that this in turn stimulates the nerve endings, which have been shown to terminate there. It is a fact, however, that we have in the inner ear an organ which is stimulated by motion either increasing or decreasing in speed, but which ceases to be stimulated when speed is maintained at a constant rate. If the rate of movement has been more rapid than a person is accustomed to, when movement begins to get slower or ceases he has a false sense of motion in the opposite direction. This can be demonstrated easily by rotating a subject with the eyes shut, in a well balanced, smoothly working chair, taking care to exclude any auditory or visual stimuli, which would give him a clue, and instructing him to tell the direction in which he is going. As we rotate him, let us say, to the right, he says correctly "To the right, to the right." When, however, we maintain a constant speed for a few seconds he says, "I am not moving." As soon as we begin to retard the speed, he feels that he is moving to the left, although he is still rotating to the right. The same phenomenon of false sense of being still, or of motion in the opposite direction during retarding movement, or when progression ceases, has been shown to exist with rectilinear motion by experiments in elevators or moving trains. In this case, the thought has been that the perception apparatus was in the otolith membranes of the maculae of the utricle and saccule, and that the force of gravity on the otoliths was the activating stimulus.

Another function of the vestibular apparatus that has been noted in many of the earliest researches is that from it go a constant stream of tonic impulses which help us maintain our position in space or which enable us to orient our position in space. Many observers have noted that the destruction of the vestibular apparatus is accompanied by characteristic postures of the animals, and by changes in the position reflex of the eyes. Recently, de Kleijn and Magnus[1] have continued the research instituted by Wittmaach in 1910 by rotating animals in a centrifuge at 2,000 revolutions a minute, and thus dislocating the otoliths in the otolith membranes. By examining the reflexes of the animals before and after rotations, and by examining the otolith organs histologically, after rotation, they have come to the conclusion that it is the otolith organs exclusively that are concerned in sending out these tonic labyrinth reflexes to the body muscles and in the maintenance of the position reflex and compensatory eye movements. They conclude that the otolith apparatus is not stimulated by centrifugal force or, in the case of rectilinear motion, by any lagging of the otoliths on progression, and they call attention to the fact that, in the case of the canals, the stimulus is on movement either starting or stopping, whereas in the otolith membranes the stimulus is constant from the time the head moves from the horizontal position, and they think it quite likely that even in that position there is a constant minimum stimulus for tonus. In support of this, they quote cases in which extirpation of the labyrinth resulted in the head being held to the normal side, but in which extirpation of the remaining labyrinth, many months afterward, resulted in the head taking a median position again, owing to the cutting of the constant impulses from the good side. They have shown that the maximum impulse occurs when the otoliths hang from the maculae, and the minimum impulse when the otoliths press on the maculae, excepting in the case of certain eye reflexes and flexor muscle reflexes, when the opposite seems to be true. If this is the case, then disease of the otolith organs would cause physical signs, which are to be induced by the position of the head, rather than by rotation of the head.

De Kleijn and Magnus have also investigated the functions of the semicircular canals after destruction of the otolith membrane by centrifuging, and find that the turning reflex and after (nach) reflex, as well as the progressive movement reflexes, are present, and they conclude that these are activated by the semicircular canals. As these reflexes remain after extirpation of the cerebrum, most of the cerebellum and the afferent nerves of the muscles affected, they conclude that the centers are in the brain stem. As stated before, the theory of flow of the endolymph has not been fully accepted, the argument being that the canals are extremely small, that currents in the utricle or saccule, on account of their greater relative size, are much more likely to occur, and that it is not possible physically to create a flow in an unyielding cavity filled with fluid. Accordingly, at their suggestion, a model was made of glass representing the bony labyrinth with a projection at one side, covered with a sheet of rubber to provide elasticity and represent the connection of the perilymph with the fenestrae ovalis and rotunda. Inside this glass model of the bony labyrinth they have placed a rubber model representing the membranous labyrinth having a glass ampulla, in which is located a small elastic cupola and hair cell. This membranous labyrinth has an opening in the glass or bony labyrinth leading to a rubber bag, representing the saccus endolymphaticus. Having filled the models with fluid, they have moved it back and forth and observed movements of the cupola, and they feel that they have shown it physically possible that the semicircular canals can be stimulated on rectilinear motion. For reasons that I shall not state in detail, however, they conclude that from their experiments on guinea-pigs, although the progressive reflexes remain after extirpation of the otolith membrane, they are not willing to say that the otoliths do not participate to some degree.

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[12] Zuntz: Ztschr. f. klin. Med. 74, Nos. 3 and 4, 1912.

* Read before the Philadelphia Neurological Society, Feb. 24, 1922.

[1] De Kleijn, A., and Magnus, R.: Arch. f. d. ges. Physiol. 186: 6-60, 61-81, 1921.

Some interesting work on the dogfish, which has an easily accessible labyrinth in which the otoliths or the ampullae can be destroyed without injury to other parts, has been done by Maxwell.[2] He concludes that most of the reflexes are activated by both the semicircular canals and the utricle, and finds them destroyed only when both organs are extirpated. He believes that the saccule has nothing to do with equilibrium. This may be true of fishes, but not of the higher vertebrates. He also believes that the canals are stimulated not by the flow of endolymph, but by the pull of the utricle on the ampullae.

Bárány [3] has reported a case of disease of the otolith apparatus; it is the only one I have been able to find:

> A woman, aged 27, had had a headache for a year. The hearing, caloric reaction and neurologic conditions were normal. She had had vertigo for fourteen days, but only when lying on the right side. During the attacks there was marked rotary nystagmus to the right, with an upward directed vertical component. The nystagmus became purely rotary when the patient directed the eyes to the right, and purely vertical when she directed them to the left. It was position and not movement that caused the nystagmus. If, immediately after the cessation of an attack, the head were again turned to the right, no such phenomena could be induced, and it was necessary for the patient to lie on the back on the left side for a while before these results could be obtained again. The nystagmus began when the head was inclined even the slighest degree to the right.

No doubt, these cases are not infrequent, but have not been sought for.

REPORT OF CASE

The case that I report differs from the one reported by Bárány, but is, I believe, due to injury of the otolith apparatus.

C. C., a boy, aged 14 years, referred to me at the Lankenau Hospital, had never had convulsions or any other illness, with the exception of the present complaint. He was the seventh of nine children. The mother and father were healthy. He struck his head in a fall when 1 year old. At the age of 2 years he had a bad fall, cutting the right eyebrow. He received a severe blow, but was not unconscious. Some years later he was hit with a baseball, and later had a fall on the ice. The mother had not noticed that he was ungainly or had any peculiarity in walking or tendency to fall more than the other children. No one in the family had a similar complaint. The mother noticed that he held his head toward the side soon after he had had the blow on the head at the age of 2 years, and he had continued to do so ever since. She thought that the nystagmus grew worse when he became excited. The patient presented as his most prominent physical sign a marked horizontal nystagmus, with excursions varying greatly. The nystagmus was horizontal when the head was held with the horizontal semicircular canals parallel to the floor. In this position, with a pencil held at or near his near point, the movement was so small and fine that it was difficult to describe its direction. When asked to look to the right, he had horizontal nystagmus to the right, which was quick and of small amplitude. When asked to look to the left, he had horizontal nystagmus to the left. That is to say, the quick component was to the left on looking to the left, and to the right on looking to the right. The amplitude was greater, but the frequency was less, when he looked to the left. When asked to look to a distant point, he had marked horizontal nystagmus, which was very quick, of good amplitude and with the quick component to the left. The patient stated that when he looked at an object close at hand he had noted that the violent movement stopped. He had also noted that, if he put his head to the left side about 15 degrees, the nystagmus stopped. When he held his head straight or looked at a distance, he became dizzy and sick at the stomach. He defined dizziness as a state in which objects moved back and forth. He said that the room did not go round. When he looked up, the nystagmus continued to be horizontal and to the left. When he looked down, the nystagmus was very slight. When he read a book, the nystagmus was very slight, if he held his head to one side. He did not have these attacks when in bed. He had not noticed what effect shutting the eyes would have. With eyelids gently closed and the head 30 degrees forward, both eyes appeared to be turned inward and slightly upward. When the eyelids were raised during forcible closure, the eyes were looking straight ahead, and then turned upward and outward.

The position of the head which the patient found most comfortable was with it inclined to the left shoulder and with a line from the external auditory canal to the external canthus, 30 degrees upward, that is, the head upright and the right chin rotated 10 degrees to the left. When told to look at a distance with the head in this position the eyes oscillated very slowly and slightly, it was impossible to say in which direction. He still showed some nystagmus on looking to the right, and to the left on looking to the left with the head held in this position. With his head 60 degrees back, he held his eyes still for several seconds, when they oscillated again. With his head either over to the left or over to the right shoulder, he could hold the eyes almost still. With his head 30 degrees forward he had spontaneous past-pointing when taken in the perpendicular plane of 2 inches to the left with the right arm, and 3 inches to the right with the left arm. With his head in the same position, the past-pointing in the horizontal plane gave 2 inches below with the right arm and touched with the left arm. With his head 60 degrees backward he touched normally when moving the arms in the perpendicular plane, and the same when moving the arms in a horizontal plane. With his right leg (when the head was 30 degrees forward) he spontaneously past-pointed to the right. With the left leg he touched normally. When the head was 60 degrees backward he touched with both feet.

With the head held in the patient's "favorite position," he past-pointed normally, with his arms moving in the perpendicular plane, and also with his arms moving in a horizontal plane. With the right leg he was a little uncertain in pointing, going sometimes to the right and sometimes to the left. With the left leg he touched.

Station was perfect. Gait was normal. Gait was normal walking to an object 15 feet away with the eyes shut. When his head was held 30 degrees forward, the eyes being shut, he walked to the right sometimes, and sometimes he touched.

Several teeth were decayed. Both ear drums were retracted. There was an old scar in the posterior quadrant of the right side. Hearing was normal.

Caloric test of the right ear, with water at 68 F., revealed rotary nystagmus, small amplitude in forty-five seconds. Horizontal nystagmus was marked. Past-pointing was normal for all pathways. Caloric test of the left ear, with water at 68 F., revealed rotary nystagmus, small amplitude in forty-five seconds. Horizontal nystagmus was marked. Past-pointing was normal for all pathways. There was marked nausea and vertigo with each ear.

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[2] Maxwell, S. S.: Removal of Otolith Organs, J. Gen. Physiol. **2:** 123 (Nov.) 1919; Static Labyrinth, J. Gen. Physiol. **2:** 349 (March) 1920; **3:** 157 (Nov.) 1920.

[3] Bárány, R.: Hygiea **83:** 81 (Feb. 14) 1921; J. Laryng. & Otol. **36:** 229 (May) 1921.

The rotation test was made one week after the caloric test. Rotation, ten turns to the right in twenty seconds, gave horizontal nystagmus to the left with marked excursions. This nystagmus would keep up indefinitely, but I am sure, from the change in rapidity and amplitude, that he got a stimulus through. There was marked sense of vertigo.

Rotation ten times to the left in twenty seconds gave nystagmus to the right. The amplitude was small. The excursions were rapid. After thirty seconds the nystagmus reversed and became the usual constant type seen in the patient. Just as the nystagmus reversed, the patient said, "The objects are not moving," and as the usual constant nystagmus started again he said, "There they start again." There is no question that he got a stimulus through. Vertigo was marked.

Rotation ten times to the right in ten seconds gave past-pointing to the right with the right arm 1 inch two times, and past-pointing to the right with the left arm 2 inches three times. There was marked nausea.

Rotation ten times to the left in ten seconds gave very marked nausea; the patient was distracted. He touched with the right arm and past-pointed to the left with the left arm 1 inch.

After a short rest this test was repeated, and he past-pointed 3 inches to the left with the right arm, and touched with the left arm. The patient vomited.

The rotation tests disclosed that impulses went through all pathways and were of usual intensity.

The patient consulted the eye dispensary of the Lankenau Hospital, Dec. 14, 1921, for the relief of asthenopic symptoms. He had never worn glasses. Examination by Dr. A. C. Sautter disclosed a lateral nystagmus which, the patient stated, had existed since birth. This nystagmus was most pronounced while fixing a distant object. With his head turned to the left, nystagmus was much less marked, and vision tested with the head in this position equaled 6/6 in each eye. Direct vision in each eye equaled 6/30 of the normal. Ocular excursions were full in all directions, and accommodation and convergence were normal. The corneas were clear, pupils 4 mm., irises reacting normally. Ophthalmoscopic examination revealed in each eye clear media and healthy eyegrounds. The refraction was taken with the aid of scopolamin, but no lens improved vision; consequently, no glasses were prescribed. Neurologic examination by Dr. Potts was negative.

COMMENT

The interesting points in this case are: (1) the history of incidence of nystagmus after a blow; (2) the significant fact that this had continued twelve years, and that except in his "favorite position" the nystagmus was constant and that there had been no vicarious assumption of function, such as we find after injury to the semicircular canals; (3) the most interesting feature, that the nystagmus was almost entirely absent in his "favorite position," but resumed instantly as soon as the head was moved from this plane, no matter how slowly and carefully it was moved, and at the same time the past-pointing, which was normal in his "favorite position," became abnormal in other positions. It seems to me that this points toward an injury of the otolith apparatus which was probably on the right side; the left side, maintaining tonus, caused the head to be drawn to the left. It is probable that this posture, according to the theory of Magnus and de Kleijn, places the otoliths in a position of pressing on the maculae, and therefore gives a minimum stimulus. As the otolith organ on the opposite side is nonfunctioning, we have the normal opposing muscle tonus of the neck muscles removed; and the head took that position when at rest. We also have the nystagmus due to the unopposed influence of the normal side.

On the other hand, many cases of unilateral destruction of the labyrinth, we have seen, must also have included the otolith apparatus. If this is so, how is it that we do not more often see the head going to the opposite side? Would the destruction of the canals in addition to the otolith apparatus be sufficient to cause this? The fact that the amplitude of the nystagmus is very marked on looking to a distance and is controlled by looking at a near point is in keeping with what we know of nystagmus after rotation.

1825 Chestnut Street.

SUBACUTE MALIGNANT INFLUENZAL ENDOCARDITIS

REPORT OF CASE *

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The subject of subacute bacterial endocarditis is of interest because, of all the various types of endocarditis, it is the only one with a definite etiology, and further, because it manifests itself in a fashion making clinical recognition more or less certain. Frequently, however, a departure from the usual picture is encountered, as regards both the causative bacterial agent and the clinical phenomena. Thus, while the usual microorganism is *Streptococcus mitis* (*Streptococcus viridans* or nonhemolytic streptococcus), the influenza bacillus may be responsible for an identical picture. Libman and Celler,[1] in their exhaustive studies on the subject of subacute bacterial endocarditis, mention the influenza bacillus as being responsible for about 5 per cent. of the cases. More recently, Malloch and Rhea[2] reported two well-studied cases. The literature, however, is rather meager as far as influenzal subacute endocarditis is concerned, and for this reason it was thought worth while reporting this case.

REPORT OF CASE

History.—S. F., a man, aged 45, salesman, was admitted to Lebanon Hospital, July 24, 1921, complaining of chills, fever, and sweats. The family history was negative, and his previous history was irrelevant, except for a "cold in the head," three months prior to the present illness. Eleven days before admission he had a chill, followed by fever, and sweats. These symptoms occurred every other day. He also complained of weakness and lassitude, but had no pain. The fever for the first week was intermittent, and later remittent, ranging between 103 and 104 F.

Examination.—The patient was well built and obese. He did not look very ill. There was a slight icteric tinge to the skin and sclera. The head and neck were normal. The chest showed moderate emphysema; the heart sounds were not well heard (emphysema?). The liver and spleen were palpable but not tender. The pulse was 100, respiration 24, and temperature about 103 F. Prior to admission, the blood was repeatedly examined for malaria, and was negative. The urine showed red blood cells on several occasions as well as a faint trace of albumin, with an occasional hyaline and granular cast. A blood examination on admission to the hospital revealed: erythrocytes, 5,104,000; leukocytes, 11,600; polymorphonuclears, 81 per cent.; lymphocytes, 19 per cent.; hemoglobin, 100 per cent. The urine showed again a faint trace of albumin, an occasional leukocyte, occasional hyaline and granular casts, and a few red blood cells. The specific gravity was between 1.013 and 1.015.

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* From the Medical Service and Pathological Department of Lebanon Hospital.

[1] Libman and Celler: Observations on Etiology of Subacute Infectious Endocarditis, Tr. Am. Phys. **25**: 5-19, 1910; Etiology of Subacute Infectious Endocarditis, Am. J. M. Sc. **140**: 516, 1910.

[2] Malloch, A., and Rhea, L. J.: Two Cases of Endocarditis Due to Bacillus Influenza, Quart. J. Med. **12**: 174 (April) 1919.

At this time the diseases that had to be considered in making a diagnosis were malaria, miliary tuberculosis, typhoid fever, and infectious endocarditis. Malaria was excluded because of the unremitting elevation of temperature, the negative blood examination, polynucleosis, and the failure of response to quinin. Miliary tuberculosis was ruled out because of the negative history and negative lung findings (including roentgen-ray), the slow pulse, and absence of lymphocytosis. Typhoid fever was excluded because of the repeated chills, absence of rash, negative Widal reaction, and polynucleosis. A probable diagnosis of infectious endocarditis was, therefore, made, although we could not explain the absence of clinical evidence of endocarditis (murmurs, etc.), and the absence of petechiae and sternal tenderness; but the chills and fever, the peculiar skin pallor, the splenic tumor, the polynucleosis, and the microscopic blood in the urine could best be explained on a basis of subacute endocarditis; but we did not suspect the influenza bacillus as the causative agent.

Subsequent Clinical Course.—The patient became more toxic in the ensuing days. He developed a suspicious Kernig's sign, and Babinski phenomenon, and some tenderness over the spleen and liver. The blood count revealed now 22,400 leukocytes, with 86 per cent. polymorphonuclears. A spinal tap revealed a normal cerebrospinal fluid. An agglutination test was negative for typhoid and paratyphoid. A blood culture was negative, and a blood chemistry examination gave normal figures.

About two weeks after his admission to the hospital, the patient developed petechiae in the conjunctiva, followed by petechiae in the skin. A blood culture about this time was positive for influenza bacilli, showing about 6 organisms per cubic centimeter of blood. Another blood culture several days later showed again influenza bacilli with 40 organisms per cubic centimeter of blood (progressive septicemia), and blood in the urine was found in increasing amounts.

The temperature continued high and was very irregular. The patient became more toxic and delirious toward the end. August 8, ten days prior to death, there was an indefinite systolic murmur at the apex, which the clinical notes record as a roughened first sound. August 14, there was a suggestion of a presystolic murmur, as well as a systolic murmur at the apex. The delirium and toxemia continued; the patient died of exhaustion, August 18, the thirty-sixth day of his illness.

Necropsy.—There was a peculiar pallor, and there were petechiae all over the body, especially the extremities and shoulders. Some of these petechiae were pale and somewhat depressed in the center. There were also petechiae in the conjunctiva and the mouth, and the mucous membranes were extremely pale. No petechiae were noted on the viscera except over the kidney and spleen, which showed a small number of infarcts.

The pericardium contained about 250 c.c. of clear fluid.

The heart was of about normal size, but pale. There was some hypertrophy of the left ventricular wall. The right ventricular wall was thinned out, and showed some fatty infiltration. The tricuspid and pulmonary valves were normal. The aortic valve, right cusp, was moderately thickened, and presented besides a fine, firm vegetation, which looked like a mere roughening of the endocardium at the edges of this vegetation. This was thought to be a beginning involvement of the valve.

The mitral valves were distorted by large, irregular, firm, varicose vegetations. These were pale and well organized (chronic valvular endocarditis), and superimposed on them were several small reddish-brown, friable, flat vegetations, which were ulcerated, and which extended to the base of the valve, and on to the auricular wall on the left cusp, and on the chordae tendineae of the right cusp. Some of these chordae tendineae were surrounded by these firm, friable vegetations in a cufflike manner. Within the left ventricle there was a small thrombus, moderately pale and partially organized, but not adherent to the ventricular wall.

The spleen was enlarged from four to five times its normal size. There were several small, reddish and reddish-gray infarcts scattered over its surface, as well as over the cut section. These measured about 2 to 3 mm. In addition to these smaller infarcts there were several larger ones, irregular in outline, measuring about 1 to 1.5 cm. in size, pale gray, and rather firm, which were considered older and partially organized infarcts. The capsule of the spleen was moderately thickened. Microscopic examination disclosed moderate, generalized congestion, and partial replacement of the malphighian bodies by inflammatory tissue.

The kidneys contained small infarcts similar to those of the spleen. The markings were indistinct, the capsule stripped with ease, and the parenchyma was swollen (cloudy swelling). Microscopic examination revealed an increase of connective tissue about the tubules and glomeruli. The tubular epithelium showed cloudy swelling, and some glomeruli hyaline replacement, varying in extent from just a portion of the glomeruli to complete hyaline degeneration.

Postmortem cultures were negative.

COMMENT

There are several points that one would like to clear up in connection with this case. As to the portal of entry, we found no primary lesion unless we assume that the nasopharyngitis described by the patient as a "cold in the head," with a possible latent sinusitis, was responsible for his subsequent illness. It is well known, however, that sinus infections are the rule rather than the exception in influenza. Brooks,[3] with his extensive experience with influenza in the army, said: "My own studies of 9,000 fatal cases of pandemic influenza have fully convinced me that sinus and nasal infection is an essential part of the introduction of the disease, and, in my opinion, it remains as the focus of infection and reinfection, from which subsequently develops most of the complications and sequelae of the disease," and yet influenzal septicemia, especially associated with ulcerative valvular lesions, were by no means frequently encountered during the recent epidemics. It is rather surprising how well patients with chronic valvular endocarditis get along during the prevalence of influenza. One is almost tempted to assume that the influenza bacillus plays only a minor and secondary rôle in so-called epidemic influenza. Otherwise, we should have had more cases of subacute bacterial endocarditis due to this organism.

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A COMPARISON OF SEVERAL CLINICAL QUANTITATIVE BLOOD SUGAR METHODS *

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This investigation is a comparison of four quantitative, clinical methods for determining blood sugar. These are the original method of Lewis and Benedict,[1] the Myers and Bailey [2] and Benedict [3] modifications of this, and the latest modification of the method of Folin and Wu.[4] The Lewis-Benedict method was used in only a few determinations, the investigation being confined mainly to the three other methods.

It is well known that the results with the copper methods are consistently lower than those with the

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3. Brooks, Harlow: M. Clin. N. Am. **4**: 29 (July) 1920.

* From the Laboratories of Columbia Hospital.

* Because of lack of space, this article is abbreviated in The Journal by the omission of a discussion of the literature. The complete article appears in the authors' reprints.

1. Lewis, R. C., and Benedict, S. R.: J. Biol. Chem. **20**: 61, 1915.
2. Myers, V. C., and Bailey, C. V.: J. Biol. Chem. **24**: 141 (Feb.) 1916.
3. Benedict, S. R.: J. Biol. Chem. **34**: 203 (April) 1918.
4. Folin, O., and Wu, H.: J. Biol. Chem. **41**: 367 (March) 1920.

picric acid methods.[5] If, with both types of methods, it is possible to estimate accurately changes in concentration of blood sugar. then it is only necessary to obtain normal figures for each method, and judge the abnormal figures accordingly. The usual figures[5] found reported for blood sugar in normal persons, are, in blood obtained before breakfast, from 0.07 to 0.12 per cent., with an occasional high normal of 0.14 or even 0.16 per cent.

When the blood sugar increases, or when glucose is added to blood (in vitro), if all of these methods are accurate, the increase determined by all methods should be proportional. In the instance in which sugar is added to the blood, the figures for the added glucose should approach the theoretical.

It may be stated that in our hands not only has the Benedict modification always given the highest figures, but when glucose was added to the blood the proportionate increase in the figures by the Benedict modification was greater than by the other methods. The Benedict modification also showed a greater percentage variation in a case of diabetes mellitus with high blood sugar determined on three different days. The figures obtained with Myers and Bailey's modification were lower than those obtained with the Benedict modification, and higher than the figures obtained with the latest modification of the method of Folin and Wu. The few figures obtained with the original Lewis-Benedict method were at about the same level as the Folin and Wu figures. Determinations of blood sugar in the series of normals studied by the three methods mentioned showed, however, approximately the same degree of variation by each method.

The picric acid methods have been widely used and have given valuable information to clinicians, and our study does not detract from their proved value. It does show, we believe, that one must be somewhat more circumspect in interpreting results obtained with picric methods than is, perhaps, generally recognized.

METHODS

In this investigation, four blood sugar methods were used: Benedict's[3] modification of the method of Lewis and Benedict; Myers and Bailey's[2] modification of the method of Lewis and Benedict; the latest modification of the method of Folin and Wu,[4] and, in two of the experiments on the recovery of added glucose from beef blood, the original method of Lewis and Benedict.[1]

All four are colorimtric methods. The basis of the original method of Lewis and Benedict and the two modifications of this method is the red to brown color of the reduction product (probably sodium picramate) formed by the interaction of the glucose in the blood filtrate and sodium picrate. This reaction is made to take place in the presence of a moderate excess of sodium carbonate when heated almost to dryness over a free flame, in the case of the original method of Lewis and Benedict, and at the temperature of boiling water for fifteen minutes,[14] in the case of the other two methods. In these three methods the protein of the blood is removed by precipitation with the picric acid which is used for the development of the color. The picric acid is thus made to serve the dual rôle of a precipitating and a colorimetric reagent. In the Myers and Bailey modification, the blood is laked with four volumes of water and then saturated with dry picric acid, stirred until the protein is completely precipitated, centrifuged and filtered. In the Benedict modification, the blood is laked with 2 volumes of water; 9½ volumes of a saturated solution of picric acid in 0.5 per cent. sodium hydroxid are added, and the mixture is shaken vigorously until the protein is completely precipitated and then filtered. The picrate reagent of the Benedict modification contains about three times[15] as much picric acid as a saturated aqueous solution. The original method of Lewis and Benedict differs from the two other picric acid methods in that less acid is used to precipitate the blood protein (15 c.c. of a saturated aqueous solution of picric acid to 2 c.c. of blood laked with 8 c.c. of water), and the filtrate is heated almost to dryness with the carbonate over a free flame instead of in a boiling water bath.

The basis of the method of Folin and Wu is the deep blue color formed by the reaction of a molybdate phosphate solution with the cuprous oxid reduced from cupric sulphate by the glucose in the unknown solution or blood filtrate. In this method the blood is laked with 7 volumes of water and the protein precipitated by vigorous shaking after the addition of 1 volume of 10 per cent. sodium tungstate and 1 volume of two-thirds normal sulphuric acid. After complete precipitation of the blood protein, the mixture is filtered.

TECHNIC

For the details of technic, reference should be made to the original articles. It is sufficient to state here that the details of technic in each method as outlined in the original articles were rigidly adhered to throughout this work.

In most cases the filtrates from the blood and spinal fluid were examined immediately, and in no case was a filtrate allowed to stand more than one, or, at the most, two hours. Duplicates were run on all filtrates. In each determination, the average of from three to five colorimetric readings was taken.

In the sugar determinations on spinal fluid, exactly the same technic was employed as is employed for blood in the case of the Myers and Bailey modification of the method of Lewis and Benedict and in the case of the method of Folin and Wu. In the latter method a glucose standard containing only 0.5 mg.[16] of glucose per 10 c.c. was used in addition to the two used for blood, which contain, respectively, 1 and 2 mg., of glucose per 10 c.c. As the protein content of spinal fluid is much less than that of blood, it would seem that considerably less sodium tungstate and sulphuric acid than is used by Folin and Wu for precipitation of blood protein would suffice for complete precipitation of the protein in spinal fluid. Experiments in which half the usual amounts of the foregoing precipitants were employed yielded results identical with the results obtained with the full amounts of the precipitants. For the sake of uniformity, the amounts of the two precipitants specified by Folin and Wu were employed in all the determinations by the Folin-Wu method which are here reported.

In the application of the Benedict modification to spinal fluid, Professor Benedict suggested to us, shortly after this investigation was started, that it would be better to dilute the spinal fluid with 5 instead of 2 volumes of water, and to add 6½ volumes of picrate instead of 9½, in order to reduce the amount of picric acid radical in the filtrate. The reason for this is quite apparent. The protein content of spinal fluid is much less than that of blood. For this reason very little picrate is removed with the precipitate on precipitation of the protein and, consequently, if the original technic is followed, the filtrate will contain more picrate and hence give a deeper color than the glucose standard which the permanent picramic standard is made to match. We have specified in the tables which technic was used for spinal fluid sugar as either "original or changed."

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[5] Williams, J. R., and Humphreys, E. M.: The Clinical Significance of Blood Sugar in Diabetes Mellitus, Arch. Int. Med. **23**: 537 (May) 1919.

[14] Myers and Bailey specified heating for fifteen minutes. Benedict, in his original communication, specifies only ten minutes of heating, but in a communication to Falk (Falk, K. G., and Noyes, H. M.: J. Biol. Chem. **42**: 109 [May] 1920) recommends a longer period.

[15] Benedict, S. R., and Osterberg, E.: J. Biol. Chem. **34**: 195 (April) 1918.

[16] Foster, H. E.: Hyperglycorachia in Epidemic Encephalitis, J. A. M. A. **76**: 1300 (May 7) 1921.

The blood was collected in corked test tubes, marked at the level to which they were to be filled. A 2 per cent. solution of potassium oxalate was kept on hand, and enough of this was added to each tube to furnish 20 mg. of oxalate per 10 c.c. of blood. Thus, if the tube was marked at the 5 c.c. level, 0.5 c.c. of 2 per cent. potassium oxalate was added, and the solution evaporated to dryness so as to form a thin film of oxalate over the inner surface of the test tube. The blood was drawn with a syringe, before breakfast unless otherwise stated. Whenever sugar determinations were made on the blood and spinal fluid of the same patient, the spinal fluid was drawn at the same time as the blood.

In the experiments in which pure glucose was added to beef blood and sheep blood, the requisite amount of glucose was accurately weighed and transferred carefully to a 100 c.c. volumetric flask. The flask was then filled to the mark with blood, and the contents thoroughly mixed.

APPARATUS

A Bock-Benedict colorimeter was used throughout. Daylight, preferably the light reflected from a white cloud, was utilized whenever available. On dark days an artificial light was used, the source of which was a 75 watt electric bulb enclosed in a white enameled box. In case artificial light was used, this fact is noted. Throughout all the readings the standard was set uniformly at 15 mm.

All measuring apparatus, including the Oswald pipets used for measuring the blood, was checked and calibrated in this laboratory.

REAGENTS

The picric acid used was J. T. Baker's analyzed, which was purified by the method of Folin and Doisy.[17] When 8 c.c. of the picrate-picric acid reagent prepared from this was heated with 1 c.c. of 20 per cent. sodium carbonate in a boiling water bath for fifteen minutes, there was no marked increased color development. This reagent was likewise checked against that of Professor Farmer of Northwestern University School of Medicine, and was found to be identical with his.

The picramic acid, which was prepared by the method of Egerer,[18] was furnished us by Dr. J. C. Bock. The picric acid and picramic acid reagents were kept at all times in brown bottles in a dark closet, and never exposed to light except when in use.

The pure glucose used throughout these experiments was likewise furnished us by Dr. Bock. It had been purified by the acetic acid method of Hudson,[19] dried in the thermostat at 37 C., kept in a desiccator over calcium chlorid, and gave the theoretical polariscopic readings. Our reagents were repeatedly checked against this pure glucose.

COMMENT

A number (twenty-four) of the samples of normal bloods were analyzed by the Benedict modification of the Lewis-Benedict method (during March and April). The samples were obtained from physicians, nurses and patients, care being taken to choose persons without any metabolic abnormalities. The results obtained are rather striking because they are, with only one exception of 0.098 per cent., above 0.12 per cent., the generally accepted upper limit of normal blood sugar. The lowest figures (excepting 0.098 per cent.) is 0.126 per cent.; the maximum is 0.171 per cent. The average of the twenty-four results is 0.141 per cent. There is one result below 0.12 per cent.; there are four above 0.12 per cent., eight above 0.13 per cent., four above 0.14 per cent., and seven above 0.15 per cent.[20]

TABLE 3.—SUGAR IN THE BLOOD OF NORMAL PERSONS AND HOSPITAL PATIENTS HAVING NO APPARENT ABNORMALITY OF METABOLISM; COMPARATIVE RESULTS BY THREE METHODS

			Per Cent. Blood Sugar		
Date	Subject	Sex*	Benedict	Myers and Bailey	Folin and Wu
3/23/21	P. K.	♂	0.150	.....	.....
3/23/21	T. R.	♂	0.146	.....	.....
7/14/21	P. K.	♂	0.184	0.167	.....
7/14/21	T. R.	♂	0.129	0.125	.....
8/ 2/21	G. N. E.	♀	0.107	0.107	0.075
8/ 3/21	G. N.	♂	0.134	0.120	0.098
8/ 8/21	R. O.	♀	0.115	0.098	0.100
8/ 8/21	R. L.	♀	0.125	0.114	0.100
8/ 8/21	S. T.	♀	0.121	0.110	0.100
8/ 8/21	S. Z. R.	♀	0.136	0.115	0.100
8/ 8/21	Z. K.	♀	0.125	0.115	0.107
8/ 9/21	D. L.	♀	0.136	0.120	0.115
8/ 9/21	H. Z.	♀	0.115	0.107	0.097
8/ 9/21	R. T. S.	♀	0.115	0.103	0.097
8/ 9/21	S. E.	♀	0.125	0.115	0.097
8/ 9/21	S. R.	♀	0.125	0.123	0.103
8/10/21	E. N.	♂	0.136	0.115	0.094
8/10/21	H. H.	♂	0.128	0.125	0.092
8/10/21	P. K.	♂	0.136	0.130	0.095
8/10/21	R. R. S.	♂	0.125	0.111	0.092
8/10/21	T. R.	♂	0.132	0.118	0.092
8/11/21	G. K.	♂	0.115	0.094	0.079
8/11/21	K. N.	♂	0.117	0.100	0.080
Sugar in Blood of Cases of Diabetes Mellitus and Furunculosis					
7/25/21	M. N.	♂	0.200	0.177	.....
8/ 3/21	M. N.	♂	0.200	0.183	0.154
8/13/21	O. E.	♀	0.316	0.273	0.261
8/15/21	O. E.	♀	0.263	0.234	0.219
8/29/21	O. E.	♀	0.169	0.158	0.143
8/13/21	E. N.	♀	0.144	0.126	0.107
8/ 6/21	E. R.	♂	0.122	0.107	0.088

* In this column, ♂ indicates male, and ♀ female.

These figures, obtained in apparently normal persons, first called our attention to the high results obtained with the Benedict modification of the Lewis-Benedict method. The investigation which followed can be divided into two parts. One part consists of blood sugar estimations in another group of normals (Table 3) by Myers and Bailey's and Folin and Wu's methods, as well as by the Benedict modification. The other part (Table 4) is a test of the accuracy of the three methods, and also of the original Lewis-Benedict method, in the recovery of glucose added to beef and sheep blood.

Table 3 also shows high figures by the Benedict modification, lower, however, than those quoted above. Slightly lower figures were obtained by Myers and Bailey's modification, and even lower ones by Folin and Wu's method.

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[17] Folin, O., and Doisy, E. A.: J. Biol. Chem. **28**: 349 (Jan.) 1917.
[18] Egerer, G.: J. Biol. Chem. **35**: 565 (Sept.) 1918.
[19] Hudson, C. S.: J. Am. Chem. Soc. **39**: 322, 1917.

[20] It is unfortunate that at the time these results were obtained we had not yet decided to make a comparison of the several blood sugar methods.

This same gradation holds true in Table 4, in which results obtained with four methods are presented. It may be noted also that a percentage of glucose considerably more than the added amount was recovered by Benedict's modification, while results definitely closer to the theoretical were obtained with the other methods. In this series of tests (Table 4) it will be noticed that, in general, the greater the amount of glucose present, the greater the excess over theoretical are the figures obtained by the Benedict modification.

A somewhat analogous result is found in the lower portion of Table 3, which shows figures from the blood of patients with diabetes and with furunculosis. In the case of Patient O. E., the percentage differences in the blood sugar figures, obtained on three different days, is greater by the Benedict modification than by the other two methods. This corresponds to the greater variation from the theoretical by the Benedict modification in the in vitro experiments when the amount of glucose added to blood is increased.

TABLE 4.—A SERIES OF EXPERIMENTS DEALING WITH THE RECOVERY OF ADDED GLUCOSE FROM BEEF BLOOD AND SHEEP BLOOD BY FOUR DIFFERENT METHODS

					Blood				
					Blood Alone,	Blood + 100 Mg. Glucose per 100 C.c.		Blood + 200 Mg. Glucose per 100 C.c.	
Series Number	Date	Kind of Blood	Method	Standard	Per Cent. Sugar	Per Cent. Sugar	Per Cent. Added Glucose Recovered	Per Cent. Sugar	Per Cent. Added Glucose Recovered
1*	1/20/21	Beef	Benedict modification of Lewis and Benedict	Picramic acid	0.118	0.242	124	0.380	131
2	4/21/21	Beef	Benedict modification of Lewis and Benedict	Picramic acid	0.136	0.246	110	.....	.....
			Lewis and Benedict	Pure glucose	0.074	0.168	94	.....	.....
			Myers - Lewis modification of Lewis and Benedict	Pure glucose	0.109	0.211	102	.....	.....
3	5/17/21	Beef	Benedict modification of Lewis and Benedict	Picramic acid	0.146	0.263	117	.....	.....
			Lewis and Benedict	Pure glucose	0.095	0.207	112	.....	.....
			Myers-Bailey modification of Lewis and Benedict	Pure glucose	0.114	0.222	108	.....	.....
4	8/4/21	Beef	Benedict modification of Lewis and Benedict	Picramic acid	0.150	0.273	123	.....	.....
			Myers-Bailey modification of Lewis and Benedict	Pure glucose	0.136	0.242	106	.....	.....
			Folin and Wu	Pure glucose	0.115	0.214	99	.....	.....
5	8/5/21	Sheep	Benedict modification of Lewis and Benedict	Picramic acid	0.083	0.200	117	.....	.....
			Myers-Bailey modification of Lewis and Benedict	Pure glucose	0.068	0.177	109	.....	.....
			Folin and Wu	Pure glucose	0.060	0.167	107	.....	.....

* Artificial light was used in Series 1.

In the accompanying chart, the results of a glucose tolerance test are recorded in which blood sugar determinations were made by the three methods. Curves are plotted for the results by each method. These results are consistently higher by the Benedict modification than by the Myers-Bailey modification, and the results by the Myers-Bailey modification are consistently higher than those by the method of Folin and Wu. The curves, however, remain nearly parallel and show almost the same difference when the blood sugar is high as when it is low.

The figures obtained for sugar in spinal fluid are given elsewhere. Difficulty in obtaining spinal fluid from control cases has rendered it possible to examine only a limited number. At first the only method used was the Benedict[3] modification for blood sugar. This was later changed, as indicated above in the description of the technic. As the study progressed, the other methods were introduced. There are, therefore, only a few spinal fluids which have been examined by all three methods. In these the results by the Benedict modification (changed to adapt it to correspond to the low protein content of spinal fluids), Myers and Bailey's modification, and the method of Folin and Wu are practically the same. The results with the (unchanged) blood sugar technic of Benedict's modification are slightly higher. As pointed out in describing the technic, the concentration of picric acid radical in the spinal fluid filtrates is higher when the original blood sugar technic is employed. There is not the degree of difference by the three methods when sugar is determined in spinal fluid that there is when it is determined in blood.

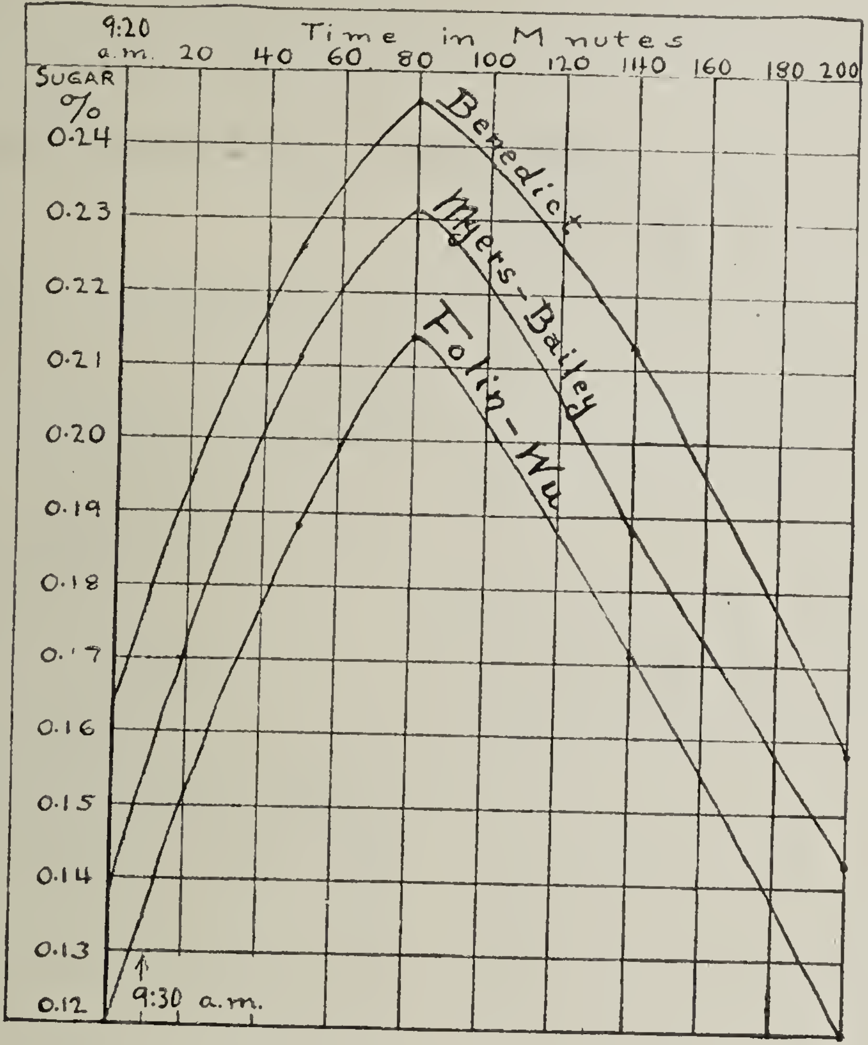
It can be seen that the high blood sugar figures with Benedict's modification are in agreement with the results of Wesselow, Folin and Wu, and Shaffer. In addition to this, our determinations of amounts of glucose added to blood show recovery with the Benedict modification of more than the theoretical amount of added glucose. The question which presents itself is, What is the explanation of these differences?

We have not attempted a critical examination of this. The possibility that creatinin is the factor can quite certainly be eliminated, except in cases with marked nitrogen retention. It might be that there is an interfering substance (or substances) in blood, which is not creatinin, as has been suggested by other investigators. If this is the explanation, then the interfering substances are evidently present in much smaller amounts in spinal fluid. There is one aspect of the three picric acid methods, however, to which it seems worth while to call attention.

The blood filtrate in the Myers and Bailey modification contains less of the picric acid radical than the blood filtrate in the Benedict modification. Also, the blood filtrate in the original method of Lewis and Benedict contains a lesser concentration of picric acid radical than the blood filtrate in the Myers and Bailey modification.

We have found the blood sugar figures by the Benedict modification at a distinctly higher level than those by the Myers and Bailey modification, and the latter at a higher level than the figures obtained by the original method of Lewis and Benedict. In other words, as the concentration of picric acid radical is increased in a blood filtrate, it appears that higher figures for blood sugar are obtained. Such a finding might be explained by the assumption that an increase of picric acid radical increases the sensitiveness of the picric acid reagent for substances in the blood other than glucose. Two investigators[21] have expressed the opinion that the picrate reagent used in the Benedict modification is more sensitive to interfering blood constituents than an ordinary saturated aqueous solution of picric acid. Myers[22] attributes the increased sensitiveness of this reagent to the presence of sodium hydroxid. Our results would seem to indicate that the concentration of the picric acid radical also may be an influential factor in determining the sensitiveness of such a reagent for unknown blood constituents.

One other factor which possibly deserves consideration has been brought out by Falk and Noyes.[23] They have shown that with the combination of two colors, such as from picric acid and picramate, comparison in a colorimeter with a uniform color standard, such as the picramic acid standard of the Benedict modification, will not always give an accurate estimation of the amount of picramate present in the unknown solution. The results will vary with the concentration of the two colors in the unknown solution. No attempt was made in their investigation to show the limits of accuracy of determinations of varying amounts of glucose.



Glucose tolerance test in a patient, aged 47, with comparative figures by three methods. At 9: 30 a. m., 100 gm. of glucose was administered by the mouth.

It can be stated that from the results reported in this article, and also by Wesselow, Folin and Wu, Myers, and Shaffer, the Benedict modification gives blood sugar figures considerably higher than do the other methods used. These figures for normal bloods are higher than those generally accepted. A separate standard of normal by the Benedict modification must be established when this method is used clinically. This, we believe, necessarily follows, so far as all blood sugar methods are concerned, as is indicated by many investigators using a still larger number of methods. There is at present no method which has been proved to determine the absolute amount of glucose in the blood. The blood is so complex and variable a mixture that it seems probable that an absolute blood sugar method will never be devised. On the other hand, it is remarkable that these methods have been brought to the present degree of accuracy. With any of the methods here studied, and with a number of others, quite an accurate knowledge can be obtained as to whether blood contains glucose in amounts which are normal, or above or below normal. The relative findings, day by day, when the blood sugar varies, can be even more accurately followed.

The usual test for accuracy of a blood sugar method is to determine how accurately it will estimate an amount of glucose added to blood. The Benedict modification, by giving results which are too high, does not meet this test as satisfactorily as other methods. This may not be considered a fair test, as the variation in the Benedict results, with human blood, keeps pace quite proportionally to that with other methods, with a possible exception in the case of high blood sugar findings in diabetes mellitus. We have not investigated the blood of nephritic patients from this standpoint.

Whatever method of blood sugar determination is employed in a clinical laboratory, the original technic should be followed accurately in every detail whenever possible. There should be absolutely no variation from this; but, should one be necessary, it should be carefully described when figures for blood sugar are reported.

SUMMARY

Comparative blood sugar determinations were made by three different methods, the Myers and Bailey and the Benedict modifications of the method of Lewis and Benedict, and the latest modification of the method of Folin and Wu. The results obtained show that the blood sugar percentages as determined by the Benedict modification are, as a rule, at a higher level than those determined by the Myers and Bailey modification, and the latter higher than those by the method of Folin and Wu. The range of variation, however, in the figures obtained by each method is practically the same. A series of twenty-four normal persons examined during cold weather in March and April,[24] by the Benedict modification alone, yielded blood sugar figures ranging, with one exception, from 0.126 to 0.171 per cent. The lowest of these figures is higher than the generally accepted upper limit of normal by other methods, namely, 0.120 per cent. The exception referred to is 0.098 per cent. In a series of nineteen normal persons examined in the hot weather of July and August, the figures by the Benedict modification range from 0.107

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[21] Wesselow (Footnote 7). Myers (Footnote 22).

[22] Myers, V. C.: Practical Chemical Analysis of Blood, St. Louis, C. V. Mosby Company, 1921, p. 66.

[23] Falk, K. G., and Noyes, H. M.: J. Biol. Chem. **42**: 109 (May) 1920.

[24] Some of our blood sugar findings are in agreement with some observations of Strouse (Arch. Int. Med. **26**: 751 [751] 1920) as to the possible relationship of weather conditions to the percentage amount of blood sugar. The figures obtained from normals in cold weather are slightly higher than those of Table 3, obtained from a similar group of persons in hot weather. This holds true, in particular, in two (P. K. and T. R.), whose blood sugars were first determined during cold weather in March and April, and later, in July and August, when the weather was very hot and oppressive.

to 0.136 per cent., by the Myers and Bailey modification from 0.094 to 0.130 per cent., and by the method of Folin and Wu from 0.075 to 0.115 per cent.

The results by four different methods of a series of five experiments on the recovery of glucose added to beef blood and sheep blood show that the Benedict modification yielded in each case a higher percentage recovery than the other three methods. The three other methods yielded percentages of recovery quite comparable to one another and closer to the theoretical than did the Benedict modification.

Blood sugar determinations were made on three succeeding days in a case of diabetes mellitus in which the patient was under treatment. The figures were obtained on each day by the three methods under investigation. On each succeeding day, each method showed a decided decrease in blood sugar percentage. However, the percentage differences between the figures obtained on the three successive days were greater by the Benedict modification than by the other two methods.

In a glucose tolerance test in a case of arthritis deformans, blood sugar determinations were made by the same three methods. Here the percentage differences in the figures obtained at different intervals by each method were in quite close agreement. The figures by the Benedict modification were at a distinctly higher level than those obtained by the Myers and Bailey modification, and the latter at a distinctly higher level than those obtained by the method of Folin and Wu; but the curves run very nearly parallel.

CONCLUSIONS

In interpreting the blood sugar findings obtained in any laboratory, it is of the utmost importance to the clinician that he be advised of the method employed in the laboratory in question and also of the range of normal figures for the method as actually determined in this laboratory.

The choice of a blood sugar method may be considered a matter of individual preference, provided the foregoing precautions are taken in interpreting the figures obtained. However, we believe that there is some evidence to indicate that, in some bloods containing a high percentage of sugar, the Benedict modification of the method of Lewis and Benedict does not yield results as reliable as the other methods discussed in this article. The Benedict and the Myers and Bailey modifications of the method of Lewis and Benedict, as well as the latest modification of the method of Folin and Wu, have impressed us as being on practically an equal footing as regards simplicity of technic.

Nature of Public Health Service.—The true province of the public health service is the prevention of disease. The efficiency of public health work is to be measured by the results of its work in the protection of the drinking water at its source, in the establishment and enforcement of regulations for the prevention of the spread of communicable disease, in the standardization and enforcement of regulations which will prevent the contamination of milk and other foods, in the establishment and enforcement of regulations which will insure comfortable and sanitary homes, workshops and places of recreation and amusement, in the establishment and enforcement of regulations to insure freedom from infection and injury in railroad and vehicular transportation, in the establishment and enforcement of regulations which will insure the inspection, the treatment for local infection and the physical education of schoolchildren.—F. Billings, *Hospital Social Service* **5**:217 (April) 1922.

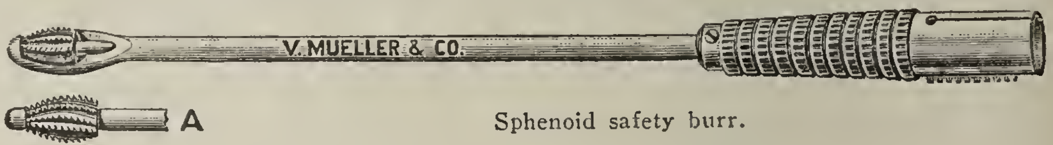
Clinical Notes, Suggestions, and New Instruments

SPHENOID SAFETY BURR

JOHN A. CAVANAUGH, M.D., CHICAGO

The burr with handle, as it appears in the illustration, is 6 inches long and will fit on any electrically driven dental handle. The shaft passes through the hollow handle and through the burr, which rests within the dilated or hooded end of the handle. This shaft is held in position by a small screw. There is a small ridge on the proximal end of the handle, reverse to the burr, so that when the instrument is inserted into the nose the operator will know the position of the cutting surface of the burr.

The anterior wall of the sphenoid at the opening of the ostium is removed in the usual way, an opening being made large enough to introduce the hooded burr with the cutting edge downward. The lower part of this wall can be destroyed with ease and without danger. After this wall has been removed to the floor of the cavity, the soft overhanging tissue can be cut away with biting forceps. Since using this instrument I have found that the opening into this cavity does not granulate in, as it does by other methods.



Sphenoid safety burr.

7 West Madison Street.

CHLORINATED LIME AND CYSTS OF HUMAN INTESTINAL PARASITES *

NATHANIEL BERCOVITZ, M.D., BERKELEY, CALIF.
Fellow of China Medical Board, Rockefeller Foundation

In the course of an investigation of the viability of ova and cysts of human intestinal parasites now being made under the direction of Dr. C. A. Kofoid, under a grant of the Research Board of the University of California, the effect of chlorinated lime on cysts of amebas and flagellates has been studied.

For a number of years chlorinated lime has been used extensively for purposes of sterilization of drinking water. In 1916, Mills of Korea advocated the general use, by foreigners in the Far East, of chlorinated lime tablets, with a small quantity of magnesium carbonate as an excipient added for sterilizing drinking water. At that time I was in Kachek, Hainan, China, and experimented with these tablets, but found that they deteriorated so rapidly in the hot and humid climate there as to be of no value. I tried another brand of chlorinated lime tablets with similar results, and, in correspondence, the manufacturers said that chlorinated lime could not be used for sterilizing purposes in tropical climates.

A manufacturer supplied me with chlorinated lime in glass ampules, 1 grain of chlorinated lime dissolved in distilled water, to the ampule. These were made in September, 1919, and kept in the tropics until June, 1921, and at present in California they still retain their full strength. This is a good way to put up chlorinated lime, and great hopes were entertained that there might be a general application of this method of sterilizing drinking water and fresh fruits and vegetables in the tropics and other places where such diseases as cholera, typhoid fever and dysentery are endemic.

In the present research the effect of chlorinated lime on cysts of amebas and flagellates was noted. The types studied were: *Endolimax nana*, small race; *Endameba dysenteriae*, large and small races; *Endameba coli; Councilmania lafleuri*, Kofoid and Swezy; *Giardia intestinalis*, and *Chilomastix mesnili*. The viability of the cyst was tested by using an aqueous solution of eosin. This has been adopted elsewhere as a standard method,[1] the cysts which stain being considered as dead, and those not staining showing clear in the pink background, being regarded as alive.

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* From the Zoological Laboratory, University of California.

All cysts of the types named were unaffected by the chlorinated lime. In each case the presence of free chlorin was demonstrated by the potassium iodid-starch method. Various concentrations were used from 0.01 to 1 per cent., but in each case the result was the same.

In 1917, Wenyon and O'Connor[2] used chlorinated lime tablets on cysts of *Endameba dysenteriae* (*histolytica*) and found that they were not affected; they also "found that free chlorin in water at a strength of 1:10,000 failed to kill the cysts after several hours' exposure."

It is evident that the use of chlorinated lime has its limitations, and this communication is made in order to warn against a false sense of security when chlorinated lime is used. This fact is important in view of the increasing number of amebic and flagellate infections being found in America today. There is no doubt that free amebas and flagellates are killed by minute doses, but the fact that cysts of amebas and flagellates are not killed even by strong doses minimizes its value. Recent communications from other sources[3] indicate, furthermore, that the chlorination process as ordinarily used is not effective against certain types of encapsulated bacteria.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SABROMIN. — Calbroben. — Calcium Dibrombehenate $Ca(C_{21}H_{41}Br_2.COO)_2$.

Sabromin contains not less than 28.5 per cent. of bromine.

Actions and Uses.—Sabromin is converted in the stomach into dibrombehenic acid, and this is absorbed from the intestinal tract. The absorption and elimination are slower than that of the inorganic bromides; hence, sabromin is not adapted to conditions in which a rapid saturation of the system with bromine is required. It is indicated in conditions in which the bromides cannot be administered for continued periods without gastric disturbance or in which brominism is caused readily. It is claimed that sabromin is of value in conditions in which a mild sedative action is desired, particularly in conditions requiring prolonged administration, and that because of absence of taste, it is of value in pediatric practice.

Dosage.—For adults, from 0.3 to 1.2 Gm. (5 to 20 grains). When administered in the form of tablets, these should be masticated before swallowing.

Manufactured by the Bayer Company, Inc., Rensselaer, N. Y. (Winthrop Chemical Company, Inc., New York, distributor). U. S. patent 848.230 (March 26, 1907; expires 1924). U. S. trademark 74,091.

Sabromin tablets, 8 grains.

Sabromin is a yellowish white powder; odorless and tasteless. It is insoluble in water and alcohol, but soluble in ether, chloroform, acetone, benzene, petroleum benzin and carbon tetrachloride.

Shake about 0.5 Gm. of sabromin with 10 Cc. of boiling water and filter. The filtrate is neutral to litmus paper and gives not more than a slight opalescence with silver nitrate solution (*soluble bromides*), and no precipitate with barium chloride solution (*sulphates*).

Heat about 0.2 Gm. of sabromin with 5 Cc. of sodium hydroxide solution for one minute. Dilute the solution with 5 Cc. of water, acidulate with acetic acid, filter, and divide the filtrate into two portions. To one portion add ammonium oxalate solution. A white precipitate results (*calcium*); shake the second portion with 5 Cc. of dilute hydrochloric acid; add 10 drops of chlorine water and 5 Cc. of chloroform and agitate the mixture. After separation, the chloroform shows a yellow coloration (*bromine*).

Dry about 1 Gm. of sabromin, accurately weighed to constant weight at 100 C. The loss is not more than 2.5 per cent. (*limit of moisture*).

Dissolve 0.25 Gm. of sabromin in 5 Cc. of chloroform and add 3 drops of absolute alcohol. Not more than a slight opalescence is produced, and only a very slight precipitate occurs after standing for twenty-four hours.

Boil about 2 Gm. of sabromin, accurately weighed, in a reflux apparatus with 100 Cc. of 10 per cent. alcoholic potassium hydroxide for six hours. Transfer the solution to a porcelain evaporating dish and evaporate the alcohol over a water bath. Dilute the residue with a little water, pour the solution into a 500 Cc. flask, and add 40 Cc. of 30 per cent. nitric acid. Dilute to 500 Cc. with water, shake well and filter. To 250 Cc. of the filtrate add 20 Cc. of nitric acid and 50 Cc. of tenth-normal silver nitrate. Titrate the excess of silver salt with tenth-normal potassium sulphocyanate solution, using ferric ammonium sulphate as indicator. The tenth-normal silver nitrate consumed corresponds to not less than 28.5 per cent. of bromine.

Heat about 2 Gm. of dried sabromin, accurately weighed, until most of the carbon has been consumed; extract the residue with hot, diluted hydrochloric acid; filter; add a slight excess, each of ammonia water and ammonium oxalate solution; collect the precipitate, dry it and ignite it to calcium oxide in the usual way. The weight of calcium oxide corresponds to not less than 3.5 per cent. of calcium.

POWDERED PROTEIN MILK-MERRELL-SOULE.—Dry Protein Milk.—A modified milk preparation having a relatively high protein content and a relatively low carbohydrate content. Each 100 Gm. contains approximately protein, 38 Gm.; butter fat, 27 Gm.; free lactic acid, 3 Gm.; lactose, 24 Gm., and ash, 5 Gm.

Actions and Uses.—When suitably mixed with water, powdered protein milk is said to be useful for correcting intestinal disorders of infants and children. It is claimed that the preparation is especially satisfactory because of the flocculent nature of the casein.

Dosage.—For the majority of conditions, powdered protein milk should be administered in small quantities according to age and condition of the patient, after a period of starvation of from twelve to forty-eight hours. Suitable carbohydrates may gradually be added to the preparation as indicated by the clinical conditions.

To prepare protein milk for use, 1 ounce (3½ tablespoonfuls) of powdered protein milk is placed on the surface of 11 fluidounces of cold, previously boiled, water and the mixture beaten with an egg beater or wire whip. Greater dilutions are sometimes prescribed. Carbohydrates, if prescribed, are dissolved in a little warm water and added to the protein milk, and then sufficient boiled water is added to make 12 fluidounces. One hundred Cc. of the finished mixture, without additional carbohydrate, contains approximately 3.45 Gm. of protein, 2.45 Gm. of butter fat, 2.18 Gm. of lactose, and 0.45 Gm. of ash.

Manufactured by the Merrell-Soule Company, Syracuse, N. Y. No U. S. patent or trademark.

IZAL.—An albuminous emulsion containing not less than 50 per cent. of a liquid, "izal oil," which is obtained in the destructive distillation of bituminous coal, and which consists essentially of monatomic phenols boiling between 205 and 300 C. Izal is, therefore, practically free from phenol and cresols.

Actions and Uses.—Izal is a germicide and disinfectant. The germicidal efficiency of izal is claimed to be twelve times as great as that of an equal quantity of phenol, but it is stated to be less toxic than phenol.

Dosage.—For general use and as a gargle, douche, etc., dilutions of 1:300 (1 fluidrachm to 1 quart of water) are used. For the disinfection of urine, feces, etc., dilutions of 1:100 (1 fluidrachm to 1 pint of water) are advised. Izal is not intended for internal use.

Manufactured by The Abbott Laboratories, Chicago, under license from Newton, Chambers and Company, Ltd., Thorncliffe, near Sheffield, England. No U. S. patent. U. S. trademark.

Izal Disinfectant Powder: Izal oil, 10 per cent.; naphthalene, 5 per cent.; inert, absorbent earth, 85 per cent.

Izal oil is obtained by extraction and fractionation of substances which are obtained when certain grades of bituminous coal are distilled at controlled temperature. It is fractionated to exclude cresols.

Mix 100 Cc. of izal with an equal volume of hydrochloric acid, heat to 80 C. for thirty minutes, and pour the mixture into a measuring cylinder and allow to cool. The supernatant layer of izal oil should measure at least 50 Cc.

Into a standard Engler side tube flask measure 50 Cc. of izal oil as obtained in the preceding test and distil through a condenser at the rate of 60 drops per minute; the thermometer bulb should be opposite the side tube, and the readings should be corrected for temperature and pressure; at least 90 per cent. of the "oil" distils between 205 and 300 C.

When tested by the U. S. Hygienic Laboratory method, izal has a phenol coefficient of 12.

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[1] Kuenen, W. A., and Swellengrebel, N. H.: Die Entamoeba des Menschen und ihre praktische Bedeutung, Centralbl. f. Bakteriol, I, Orig. **71**: 378, 1913. Boeck, W. C.: Thermal Death Point of Protozoan Cysts, Am. J. Hyg. **1**: 365 (July) 1921.

[2] Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East, Wellcome Burroughs Sc. Rev., 1917.

[3] Larner, H. B.: Bacillus Welchii in a Public Water Supply as a Possible Cause of Intestinal Disease, J. A. M. A. **78**: 276 (Jan. 28) 1922.

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SATURDAY, MAY 6, 1922

DETOXIFYING DEVICES IN THE LIVING BODY

The enormously rapid development of the new science of immunology in the last few years has tended to focus attention on a special group of factors contributing immunity and resistance to the body. In the literature of this recent progress one reads of antitoxins, cytolysins, agglutinins and precipitins, of phagocytins and defensive ferments, and of a growing number of novel conceptions scarcely realized a generation ago. In the early enthusiasm for any new aspect of science, the pendulum of consideration is always liable to swing too far in one direction or another before the usual stabilization takes place. Thus, amid the intense and well warranted interest in the latest principles of immunology, some of the long known protective devices of the organism have almost been forgotten. In truth, the body often avails itself of relatively simple chemical reactions, such as oxidation, reduction and synthesis, to avert the menace of a harmful substance. Presumably, many of the newer "immune reactions" are fundamentally chemical in character; but this is likely to be overlooked when they are described in a vocabulary that has an unfamiliar sound to the untutored chemist.

When mineral acids or bases are introduced into the body they are, if possible, neutralized and thereby prevented from producing further injury. To a large extent the marvelous neutrality regulation of the organism is a chemical device to avert the toxic effects of deleterious substances that may arise. There is no longer anything essentially vague about this, as there is about the less clearly understood toxins and antitoxins. Other detrimental substances, such as alcohols and some of the organic acids, are readily burned up in the tissues and thus excluded from doing further harm. The resistant benzoic acid is united with glycocoll and excreted as the harmless hippuric acid (benzoylglycocoll). A still different chemical protective is seen in the "conjugation" of certain toxic compounds into less objectional derivatives. Putrefaction in the alimentary tract, for example, gives rise to a diversity of bacterial decomposition products of proteins or their constituent amino-acids. Indol thus formed is hydroxylated and conjugated to form the indican of the urine. The hydroxyacids which have no toxic effects are not subjected in any noticeable degree to oxidation or conjugation, and are almost completely excreted in the urine in the free state.

Another group of such putrefactive products of biochemical importance includes the volatile phenols, notably paracresol and phenol. As these are toxic even in small amounts, the latter being familiar under the more popular name of carbolic acid, they are dealt with by the body in a different way. Baumann long ago demonstrated that phenols can be detoxified by combination with sulphuric acid (doubtless originating principally from oxidized protein-sulphur). In a renewed study of this phenomenon, Pelkan and Whipple[1] have come to the conclusion that more than half of these toxic phenols are oxidized by the intestinal mucosa, body fluids, and liver parenchyma. The remainder is conjugated in the liver with sulphuric or glycuronic acids. After passing from the liver, the conjugated phenols are uniformly distributed to all the tissues, and are rapidly eliminated by normal kidneys, probably within twelve hours.

In expressing their confidence that the synthesis of phenol-sulphuric and phenol-glycuronic acids takes place only in the hepatic parenchyma, Pelkan and Whipple lend a new importance to the liver as a protective organ. They state that the volatile phenols produced in the intestinal tract are probably to a large extent rapidly oxidized by the intestinal mucosa and the liver—and those which escape this process are completely conjugated by the liver. When the oxidizing mechanism is overwhelmed by large amounts of phenol, as occurs when phenol is ingested, more of that substance reaches the hepatic tissues unchanged, and the relative amount of conjugated phenols is greater. Ordinarily, they add, this oxidizing mechanism is sufficient, and much larger amounts of volatile phenols than are normally produced in the intestine are oxidized within a few minutes. This serves to strengthen the argument that free volatile phenols as such cannot remain in the blood stream for any considerable period.

As phenol conjugation seems to be a function of the liver cells exclusively, it is easy to understand why, as Pelkan and Whipple have further found, extensive liver injury due to poisons will always lessen phenol conjugation. Extreme and fatal liver injury (chloroform) will reduce phenol conjugation to zero. That slight injuries are not attended by such a failure of detoxication is due to the enormous factor of safety in the mass of liver tissue in the body. It is helpful to know that something more than mere vague hypothesis is represented by the familiar statement that the liver protects us against intestinal poisons.

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[1] Pelkan, K. F.: The Physiology of the Phenols, I, A Quantitative Method for the Determination of Phenols in the Blood, J. Biol. Chem. **50**: 491 (Feb.) 1922. Pelkan, K. F., and Whipple, G. H.: II, Absorption, Conjugation and Excretion, ibid., p. 499; Studies of Liver Function, III, Phenol Conjugation as Influenced by Liver Injury and Insufficiency, ibid., p. 513.

THE PHYSIOLOGIC AND THERAPEUTIC ACTION OF LIGHT

Since the day when our first ancestor crawled out of the primordial ooze to bask in the sun, ailing animal life has instinctively turned to the beneficent source of energy for comfort in its afflictions. Universal experience has demonstrated the benefits of heliotherapy in whatever primitive forms it has been applied, and probably it is the oldest of all forms of therapy. More exact modern methods have served to support the experience of the ancients, and the recent experimental study of rickets has furnished a most remarkable instance of the definite, if inexplicable, etiologic relation and therapeutic effect of light. As stated by Hess [1] in his review of this topic in THE JOURNAL two weeks ago, the experimental production of rickets by defective diets may be determined or prevented by sunlight or artificial light of sufficient intensity and proper quality, and human rickets may be improved or cured by the same agency. The frequency of rickets in negroes and the dark skinned white races occupying northern cities evidently depends partly on defective nutrition and partly on the shutting out of the sunlight by the pigment intended to protect them from excessive doses of light in their native habitats. Heliotherapy in tuberculosis has also taken a definite place in therapeutics, while the therapeutic effects of radiant energy in other forms is, of course, one of the most rapidly growing aspects of medicine, often leaping far ahead of any safe experimental foundation.

A thorough review of the subject of the physiologic action of light by Janet H. Clark [2] is, therefore, most timely. We learn that, despite the long history of heliotherapy, the first systematic effort to study the biologic effects of light, and its therapeutic uses, was made by Finsen, when he founded his light institute in Copenhagen in 1896. Much valuable work, both theoretical and practical, has been done there since, with especial success on the therapeutic side, in the treatment of lupus, but the fundamental problem of the mode of action of light on the living cell remains unsolved. Although there is a universal conviction that sunlight is healthful, it is certain that human beings and animals can live a long time in darkness without any noticeably bad results. Blessing, who acted as physician to Nansen during his expedition in the *Fram*, published a report showing that members of the party exhibited no evidence of anemia during the trip. More recently, Grober and Sempell examined horses that had worked for years in coal mines, and found no anemia in any case in which a satisfactory nutritive condition existed. But, though the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet and visible light under certain pathologic conditions, has been investigated enough to show that there are well-defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays.

Recent contributions have come chiefly through study of the biologic effects of light in relation to the wave length of the rays concerned. In general, the shorter the wave length the greater the physiologic effect. The spectrum of sunlight reaches only to 290 microns in the ultraviolet, and light greater than 300 microns being our normal environment, it is obvious that any organism ordinarily exposed to this light and easily injured by it would have perished long since. Light less than 300 microns is an unnatural environment, and produces in all living cells strong and often very harmful reactions. Since the effect of light is probably due to the photochemical reactions produced when light energy is absorbed, it is not surprising to find that the various constituents of protoplasm begin to absorb light strongly in the neighborhood of 300 microns. We find that bacteria begin to be killed quickly by wave lengths of 296 microns or below, and hence sunlight contains few rays short enough to affect bacteria except on prolonged exposure, or at higher temperatures which augment the effect of light.

We do not know the exact nature of the photochemical reactions produced in protoplasm by ultraviolet light, although various clues have been suggested. Bovie finds that paramecia exposed to a sublethal dose of ultraviolet light are so sensitized to heat that they cannot stand, even for sixty seconds, a temperature which is the optimum for the controls. He concludes that death from ultraviolet light is due to heat coagulation following sensitization by radiation. Others have found that the effect of ultraviolet light on protein solutions is to make them less soluble, as indicated by their easier precipitation.

Snow blindness depends on the reflection of ultraviolet rays from large areas of water and snow fields, these short rays being absorbed by the cornea and conjunctiva with resulting injury to their protein constituents. Any artificial illuminants, such as the quartz mercury arc and bare metallic arcs, which emit a large amount of radiation of a wave length less than 295 microns, are known to be extremely injurious to the eyes. These short rays are the ones that stimulate the formation of lymphocytes in man and animals, which may be a factor in the heliotherapy of tuberculosis. Light exerts some influence on body metabolism, as is shown by a number of results indicating a change in the amount of carbon dioxid expired, a change in rate and depth of respiration, and an increased rate of growth in the light compared to the dark. However, the effects are not as great as might be expected, presumably because the chemically active rays cannot penetrate deeply.

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[1] Hess, A. F.: Newer Aspects of the Rickets Problem, J. A. M. A. 78: 1177 (April 22) 1922.

[2] Clark, Janet H.: The Physiological Action of Light, Physiol. Rev. 2: 277 (April) 1922.

A remarkable phenomenon produced by light is that of photodynamic sensitization, in which, through the action of various chemicals, the tissues are sensitized, just as one sensitizes a photographic plate, so that they are affected by visible light rays as normal cells would be by ultraviolet rays. Among the substances producing this effect is hematoporphyrin, derived from hemoglobin, which so sensitizes animals that sunlight is promptly fatal. Possibly the skin reactions of pellagrins to exposure to light depend on such sensitization.

As yet, relatively little investigation has been made as to how heliotherapy produces its effects in tuberculosis and rickets. In the latter, roentgenoscopy discloses that under the influence of sunlight the recalcification of bones proceeds at an accelerated rate, and chemistry reveals an increase in the inorganic phosphorus of the blood. Cod liver oil does much the same thing, and it is difficult to understand how sunlight and the oil can produce similar effects.

The physicists and biochemists will have to determine the explanation of the effects produced by the sun's rays; for the clinician it is important to realize that we are only at the threshold of the subject of the physics and physiology of light, and that, as these advance, new and probably unexpected therapeutic advances will also come.

SIGNIFICANCE OF THE KETOGENIC-ANTIKETOGENIC BALANCE IN DIABETES

When for any reason carbohydrate is inadequately oxidized in the body, the so-called "acetone bodies"—acetone, acetoacetic acid and beta-hydroxybutyric acid—may make their appearance in the urine as products of abnormal metabolism. The reason for this has not been clear heretofore, nor have the precursors of the acid compounds been precisely established. In a general way it has been realized that ketonuria or ketosis is dependent, among other things at least, on an altered breakdown of fats. The widely quoted generalization that "fats burn in the flame of the carbohydrates" throws little light on the chemistry of the reaction, and Woodyatt's [1] clever version, that when the proportion of fat is too great for the fire it "smokes" with unburnt fats and acetone bodies, was obviously intended only as a fanciful analogy.

Shaffer [2] of the Washington University School of Medicine has developed the theory that acetoacetic acid itself is not easily burned in the body, but that it forms with glucose, or with degradation products of glucose and related substances, a compound which is easily burned. To compounds which give rise, in the progress of metabolism, to acetoacetic acid the name "ketogenic" is given, while the name "antiketogenic" has been applied to compounds which furnish glucose or other related compounds with which the acetone body combines. The ketogenic compounds contained in the diets include the fatty acids contained in the fats, and some of the amino-acids, such as leucin and tyrosin, derived from the proteins. The antiketogenic substances are derived not only from the carbohydrates furnished preformed but also from the glucose derived in the metabolism of proteins, for it is well known that the latter yield glucose in large amounts readily demonstrable in severe diabetes. There is, further, evidence that glycerol yields glucose under some conditions; and hence fat, from which glycerol is produced by hydrolysis in the organism, must also be considered as a possible source of antiketogenic compounds.

If these considerations are to any extent valid, it becomes evident that there is a sort of ketogenic-antiketogenic balance in the body. So long as an abundance of carbohydrate can be burned with ease, the appearance of ketone substances will be averted, as they are in truth in the everyday life of healthy persons. As soon as carbohydrate tolerance is lowered, however, it must be assumed that ketosis can be avoided only by controlling the antagonistic factors so that either the antiketogenic components will be increased, or the sources of acetoacetic acid and its concomitants decreased.

The most recent clinical observations harmonize with the theoretical assumptions, and promise to pave the way for distinct advances in the management of diabetes.[3] The practical problem consists in determining how to estimate the ketogenic and antiketogenic values of the protein, fat and carbohydrate in any given diet. There are indications that this can be done. Shaffer [4] has lately asserted that the minimal amount of food carbohydrate needed to provide a theoretical ketogenic balance can be approximately calculated for any given subject; and this figure is the absolute minimum of carbohydrate tolerance below which ketosis is unavoidable. If, Shaffer adds, a diabetic has enough carbohydrate tolerance to remain "sugar-free" on a diet containing the calculated amount (or more) of food carbohydrate, he will have little or no ketosis. The calculated amount allows no margin of safety against accidental increase in total metabolism from unusual activity or infection. If the tolerance is lower, the only recourse is to reduce the total metabolism (the amount of ketogenic material in the metabolic mixture) by rest, low protein diet, undernutrition or fasting until the estimated appropriate relationship is established.

Hubbard and Wright [5] likewise have shown at the Clifton Springs (N. Y.) Sanitarium that the level of acetone excretion changes with altered dietary intake in correspondence with the principles just enunciated. According to them it appears that the mechanism which controls the formation of increased amounts of the acetone bodies can be regarded as a molecular reaction or balance between ketogenic substances, such as the fatty acids, and antiketogenic substances, such as glucose: that protein figures as an antiketogenic compound only to the extent of the glucose which it can yield in the organism; that glycerol, when fed as a part of the fat molecule, figures as an antiketogenic compound only to the extent to which it forms glucose in the organism; and probably that glycerol so fed does figure as an antiketogenic compound to the extent to which glycerol itself can yield glucose. It represents a decided advantage to be able, as Shaffer, Woodyatt, Hubbard and their collaborators have proposed, to calculate the "ketogenic balance" of any proposed diet and make favorable readjustments in accord with its indications, and have outlined suitable methods. The value of precise knowledge regarding protein and fat intakes or breakdown, as well as carbohydrate consumption, thus becomes clearer. The tolerance for fat becomes something measurable and predictable. The dietotherapy of diabetes will benefit by the newer knowledge which directs attention to the interrelations of all the nutrients and to the necessity and methods of taking into account the protein and fat as well as the tolerated carbohydrate of the patient.

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[1] Woodyatt, R. T.: Acidosis in Diabetes, J. A. M. A. **66**: 1910 (June 17) 1916.

[2] Shaffer, P. A.: Antiketogenesis, I, An In Vitro Analogy, J. Biol. Chem. **47**: 433 (July) 1921; Antiketogenesis, II, The Antiketogenetic Balance in Man, ibid. **47**: 449 (July) 1921; Antiketogenesis: The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, ibid. **50**: 26 (Feb.) 1922.

[3] Woodyatt, R. T.: The Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921.

[4] Shaffer, P. A.: Antiketogenesis: The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, J. Biol. Chem. **50**: 26 (Feb.) 1922.

[5] Hubbard, R. S., and Wright, F. R.: Studies on the Acetonuria Produced by Diets Containing Large Amounts of Fat, J. Biol. Chem. **50**: 361 (Feb.) 1922.

Current Comment

THE IDENTITY OF BENCE-JONES PROTEIN

The so-called "Bence-Jones protein," which has long been known to physiologic chemists as a peculiar albuminous substance occurring in rather rare instances in the urine of man, should be regarded as something more than a mere medical curiosity. The fact that this unique protein has not been identified in the normal body and that it has frequently, though by no means exclusively, been found in cases of multiple myeloma serves to direct attention to its possible diagnostic importance, and also to its problematic significance in the pathology or pathogenesis of certain disease states. Many of the earlier ideas in regard to this abnormal urinary component have been abandoned in the light of chemical investigation. The Bence-Jones protein is no longer regarded as an "albumose," despite its proteose-like behavior in the urine; nor is it considered to be a mere degradation product of ordinary proteins. Some recent writers have favored the contention of Simon that it is most closely related to one of the globulins of the blood.[1] A few, however, have argued, on the basis of immunologic differences, for a sharp differentiation between the Bence-Jones products and the proteins of human serum.[2] Bayne-Jones and Wilson[3] of the Johns Hopkins Medical School have been fortunate in securing a specimen of Bence-Jones protein which could be thoroughly purified by crystallization, and thus freed from other proteins which may be present in abnormal urine. The latter, as they occur in familiar albuminurias, are commonly regarded as having their origin in the blood, and as being identical with the serum proteins. A comparison of the refined Bence-Jones protein and the proteins of normal serum by use of highly specific precipitin, complement-fixation and anaphylactic reactions revealed unmistakable differences. Whether there is only one protein or many unlike proteins of the Bence-Jones type cannot yet be definitely stated. Most preparations heretofore secured have unquestionably been contaminated or admixed with other urinary albuminous constituents. In any event, the Bence-Jones protein must be regarded as *sui generis*. Bayne-Jones and Wilson take occasion to point out, on the basis of the immunologic differences observed in their experiments, that these are further evidence in support of the conception that the specificity of proteins is not dependent on their biologic origin, but is due to some feature of their chemical composition.

VISUALIZING OUR COMPOSITION

In medicine we often get so close to the details that we do not see the whole; so close to the forest that we cannot see the woods for the trees. This is especially true in respect to things that are examined with the microscope or determined by microchemical methods. Luden[4] has called attention to this tendency, and points out a number of quantitative facts that are somewhat startling. For example, the entire volume of circulating blood, which about half fills an ordinary bucket, contains only a small teaspoonful (from 4 to 6 gm.) of sugar and a tablespoonful (32 gm.) of salt. When we consider the minute variations in the sugar content that the modern chemist can measure in a few drops of blood, we gain added respect for the science of quantitative analysis. The iodin in the entire blood amounts to but 0.01 gm., or an average dose of atropin. When the physiologist tells us that epinephrin can be detected by biologic methods in a dilution of 1:330,000,000, it means far less than to say that it is equivalent to diluting "a small glass of whisky (10 c.c.)"—a very small glass, that—into the contents of 1,320 city street sprinkling carts, which would form a procession about six miles long. We all know that the normal blood contains about 5,000,000 red corpuscles in each cubic millimeter, but do we all realize that the entire blood must therefore contain some 25 trillion (25,000,000,000,000) red cells and 30 billion leukocytes, figures that have an astronomical aspect? And do we realize that in all that mass of blood is distributed the insignificant quantity of from 1 to 3 grains (65 to 200 mg.) of uric acid, which we assay accurately and speculate about vaguely? Luden quotes an amusing, if not very precise, estimate of the total chemical composition of "the average man," which has recently been published by a big industrial company, and which may be thus summarized: fat enough for seven bars of soap; iron enough for a medium-sized nail; sugar enough to fill a shaker; lime enough to whitewash a chicken coop; phosphorus enough to make 2,200 match-tips; magnesium enough for a dose of magnesia; potassium enough to explode a toy cannon, and sulphur enough to rid a dog of fleas. Many items in this estimate are left largely to the imagination, such as the size of the dog and the number of his tormentors, but the total cost of the ingredients is given as 98 cents, which is neither expensive nor calculated to foster megalomania. The practical value of visualized scientific data lies not only in the stimulation of memory through the imagination, but also in the food for thought which they offer and in their bearing on great medical problems. If mental pictures of the billions and trillions of blood cells crowding, jostling, and possibly struggling for a share of the mere teaspoonful of sugar in the total blood volume of a full-sized man, or the endless procession of sprinkling carts representing the epinephrin concentration to which animal tissues respond, appeal to one's sense of humor, they also do much more than this: They bring home the delicacy of the adjustment by which the human body mechanism is regulated; the extent to which this fine adjustment may be disturbed by seemingly trivial factors; the obligation of both laymen and physicians not to ignore the "slight" tokens of distress of the body engine, and the value of comparing the quantities used in the body chemistry with the "dosage" in therapeutics.

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[1] Wells, H. G.: Chemical Pathology, 1920, p. 526, which contains an elaborate review of the literature of the subject.

[2] Massini, R.: Deutsch. Arch. f. klin. Med. **104**: 29, 1911. Hektoen, Ludvig: Specific Precipitin for Bence-Jones Protein, J. A. M. A. **76**: 929 (April 2) 1921.

[3] Bayne-Jones, S., and Wilson, D. W.: Immunological Reactions of Bence-Jones Proteins, I, Differences Between Bence-Jones Proteins and Human Serum Proteins, Bull. Johns Hopkins Hosp. **33**: 37 (Feb.) 1922.

[4] Luden, Georgine: The Importance of Visualizing Established Scientific Data with Reference to the Size of the Body Cells and Their Chemical Supplies in the Circulating Blood, Endocrinology **5**: 715 (Nov.) 1921.

DYSPNEA IN CARDIAC DISEASE

It is well known that patients with heart disease may become "short of breath" as the result of an amount of exercise that does not similarly affect normal persons. Recent studies of Peabody and Sturgis[1] on persons thus experiencing dyspnea after moderate exertion indicate that the rise in metabolism, heart rate and pulmonary ventilation in patients with cardiac disease following a given amount of exercise is proportionally the same as that observed in normal persons. The dyspnea is therefore not attributable to any undue increment in metabolism with an augmented production of excretory products. Peabody and Sturgis rather attribute the shortness of breath in these patients to their tendency to breathe less deeply than normal persons, with the result that the total pulmonary ventilation becomes greater in order to obtain the same effective alveolar ventilation. A second contributory factor is the circulation of these patients, which becomes inadequate during the strains imposed by exercise and consequently contributes delay in the elimination of carbon dioxid, one of the most important stimuli to the respiratory center.

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[1] Peabody, F. W., and Sturgis, C. C.: Clinical Studies on the Respiration, IX, The Effect of Exercise on the Metabolism, Heart Rate and Pulmonary Ventilation of Normal Subjects and Patients with Heart Disease, Arch. Int. Med. **29**: 277 (March) 1922.

Association News

ST. LOUIS SESSION

Luncheon for Rotarians

All Rotarians who attend the Annual Session are requested to register at the Club Headquarters—Mezzanine Floor, South, Hotel Statler. A luncheon will be given under the auspices of the St. Louis Rotary Club in Parlor "A" of that hotel, Thursday, May 25.

Air Service Medical Association

The Air Service Medical Association of the United States will hold its annual meeting at St. Louis on Tuesday, May 23, at the Clinical Building, Washington University Medical School, Euclid and Scott avenues.

Schedule of Clinics to Be Held Prior to the Meetings of the Sections, May 18-23

Alexian Brothers' Hospital.—May 19 and 20, 9-12: *General Surgery,* Carroll Smith. *Genito-Urinary,* J. W. Marchildon. *Medicine,* E. P. Budde. *Neurology,* Hillel Unterberg. May 18 and 20, 2-5 p. m.: *Ear, Nose and Throat,* S. S. Burns. May 19 and 22, 2-4: *Eye,* J. M. Keller.

Barnard Skin and Cancer Hospital, 3427 Washington Avenue.—May 22, 10-12: 30, and 2-4: *Dermatology, Surgery, Gynecology, Pathology.*

Barnes Hospital, St. Louis Children's Hospital, 4945 Kingshighway Boulevard.—May 18-23, 9-12: *Surgery, Medicine, Pediatrics, Obstetrics.*

Washington University Medical School.—May 18-23: *Department of Biological Chemistry:* Demonstrations of Methods of Blood Chemistry and of Basal Metabolism by members of the staff. *Department of Anatomy:* Demonstrations in the Museum of Topographical Anatomy. *Physiological Laboratory:* Demonstration of Procedure of Investigating the Accuracy of the Methods of Blood Pressure.

Bethesda Hospital, 3659 Vista Avenue.—9-12: *General Surgery,* Roland Hill.

City Hospital, Unit No. 3, Fourteenth and Lafayette Avenues.—*Surgery,* daily, 9-12. *Gynecology,* daily, 10-12. *Medicine,* daily, 9-12. *Genito-Urinary,* Monday, Thursday and Saturday, 1-3. *Ear, Nose and Throat,* Monday, Thursday and Saturday, 2-4.

City Hospital No. 2, 2945 Lawton Street.—*Neurology,* May 18 and 20, 10-11, J. F. McFadden.

Deaconess Hospital, 4125 West Belle Place.—May 18, 9-10: *Gynecology,* Lee Dorsett. 10-12: *Surgery,* H. L. Nietert. May 19, 9-10: *Orthopedics,* F. H. Albrecht. 9-11: *Surgery,* F. L. Reder. 9-1: *Surgery,* E. A. Babler. 11-12: *Medicine,* L. H. Hempelmann and Schreffler. May 20, 9-10: *Urology,* Herluf G. Lund. 9-1: *Surgery,* E. A. Babler. May 21, 10-12: *Surgery,* Shutt. 11-12: *Medicine,* L. H. Hempelmann and Schreffler.

Jewish Hospital, 5415 Delmar Boulevard.—May 18, 9-10: Phil Hoffmann. 9-11: Harry Sandperl. May 19, 9-11: R. Y. Tilles. 2-4: Barney Brooks. May 21, 2-4: Ernest Sachs. May 22, 8: 30-10: H. W. Loeb and S. B. Westlake. 2: L. K. Guggenheim. 2: Meyer Wiener.

Lutheran Hospital, Ohio and Potomac Streets.—May 20, 8-10: Robert E. Schlueter.

Mullanphy Hospital, Montgomery near Grand.—May 18, 8-10: Robert E. Schlueter.

Missouri Baptist Sanitarium, 919 North Taylor Avenue.—May 18, 9: *Medicine,* L. H. Behrens and George Ives. 9: *Surgery,* W. S. Wiatt and Willard Bartlett. *Gynecology,* H. M. Lowenstein. May 19, 9: *Medicine,* O. H. Campbell. *Surgery,* Hudson Talbott and Willard Bartlett. *Neurology,* F. R. Fry. *Orthopedic Surgery,* M. L. Klinefelter. *Surgery,* V. P. Blair May 20, 9: Staff meeting. May 22, 9: *Medicine,* C. H. Neilson. *Genito-Urinary,* C. E. Burford. *Surgery,* Drs. Talbott, W. S. Wiatt and Willard Bartlett. *Orthopedic Surgery,* M L. Klinefelter. *Otolaronology,* Selden Spencer.

St. Anthony's Hospital, Grand and Chippewa Streets.—May 18, 9-11: *Surgery,* Willis Young. May 18, 20 and 23, 9-12: *Maxillofacial Plastic and General Surgery,* H. S. McKay and F. J. Tainter. May 20 and 23, 9-12: *Medicine,* J. C. Lyter. Pathogenic, clinical and experimental demonstrations. *Genito-Urinary,* Neil S. Moore.

St. John's Hospital, Euclid and Park View Place.—May 19 and 20, 3-5: *Endocrinology,* William Engelbach and J. L. Tierney. Conducted by: Llewellyn S. Barker, Baltimore. David Riesman, Philadelphia. Nelson W. Janney, Los Angeles.

St. Louis Baptist Hospital, 2945 Franklin Avenue.—May 19, 8-10: *Genito-Urinary Surgery,* M. E. Hagerty. 9-11: *Plastic Bone Surgery,* Arthur Gundlach; demonstration of two cases. 9-10: *Roentgen-Ray Clinic,* M. B. Titterington. May 20, 8-10: *Plastic Bone Surgery,* F. L. Morse. 8-12: *Surgery,* John D. Hayward. 12-1: Buffet luncheon. 10-12: *Diseases of the Chest,* Solon Cameron. May 22, 8-12: *Surgery,* E. H. Johnson. 12-1: Buffet luncheon. 2-4: *Laboratory Demonstrations,* R. B. H. Gradwohl. 1-5: *Eye, Ear, Nose and Throat,* A. S. Steiner. May 23, 8-10: *Surgery,* H. C. Bohrer. 10-12: *Surgery,* C. C. Morris. 12-1: Buffet luncheon. 1-5: *Ear, Nose and Throat:* Tonsillectomies; Local and Gas Anesthesias; Septum Operation; Esophageal Examination, E. Lee Meyers. 1: 30-4: *Genito-Urinary Surgery,* W. E. Jost.

St. Louis University Medical School.—Laboratory Demonstrations, dates to be announced later.

ST. LUKE'S HOSPITAL, Delmar and Belt Avenues.—May 18-23, 9-12: *Medicine and Surgery.*

ST. MARY'S INFIRMARY, 1536 Papin Street.—May 18, 9-10: *Empyema, Local Anesthesia. Vaginal Hysterectomy for Carcinoma,* John M. Dean. 11: *Empyema, Paroxysmal Tachycardia,* Fritz Neuhoff. 2-4: *Eye,* W. H. Luedde and J. F. Hardesty. May 19, 9: *Retroversion of Uterus; Repair of Perineum.* 10: *Cholecystitis,* Louis Rassieur. 11: *Hypertension Disease; Cardiorenal,* A. P. Henske. 1-2: *Neurology,* F. M. Barnes and Elliott. 4: *Genito-Urinary,* C. E. Burford, Koenig, M. L. Custer and H. H. Kramolowsky. May 20, 9: *Thyroidectomy for Toxic Goiter.* 10: *Cholecystectomy for Gallstones.* 11: *Diverticula of Jejunum,* J. F. Clancy. 2: *Diseases of Children,* J. F. Clancy. May 22, 9: *Transposition Operation for Uterine Prolapse.* 10: *Thyroidectomy, Toxic Goiter, Local Anesthesia,* J. M. Dean. 11: *Treatment of Bronchial Asthma by Defibrinated Blood; Pulmonary Tuberculosis,* A. C. Henske. 2-4: *Children's Diseases,* J. P. Costello. May 23, 9: *Gallstones.* 10: *Umbilical Hernia,* Louis Rassieur. 11: *Duodenal Tube.* 2-4: *Tonsils and Adenoids* (ten cases); *Deviated Septum; Mastoid Operation,* S. B. Westlake and Schmit.

Physicians attending these clinics are requested to register at the office of the St. Louis Clinics, 3525 Pine Street, giving their St. Louis address so that the daily bulletins may be mailed to them.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Special Course in Venereal Disease.—The U. S. Public Health Service conducted a special thirty-day course in venereal disease control at the new government clinic at Hot Springs in April.

CALIFORNIA

Hospital News.—The forty-five physician stockholders comprising the Sutter Hospital Association have accepted plans for the Sutter Hospital, to be erected in Sacramento. The hospital will contain wards and private rooms and the beds in the wards will be separated by partitions. There will be a large solarium on the roof. The institution is partially financed by the Bank of Italy.——Contracts have been awarded for the new U. S. Veterans' Bureau hospital at Palo Alto, consisting of twenty-two new concrete buildings, which will be erected at a cost of $861,969. The contract, of which the full amount is $1,154,309, also includes the building of roads and completing of the grounds of the institution. The present structures will be torn down and the new hospital completed within eight months. Contracts have also been let for mechanical equipment, heating and lighting at a cost of $292,400.——Medical superintendents of the state hospitals and homes in California held a two-day session in San Diego, April 24-25.

CONNECTICUT

Health Institute.—The New England Health Institute was held in Hartford, May 1-6. Public health workers from all parts of New England were present, and prominent public health speakers addressed the meetings.

Personal.—Dr. Roy L. Leak has been appointed superintendent of the Connecticut State Hospital, Middletown, to succeed Dr. Clarence Floyd Haviland, who resigned recently. ——Dr. James H. Kingman, Hartford, was elected president of the Middlesex County Medical Association at its one hundred and thirtieth annual meeting.

DELAWARE

Personal.—Dr. Joseph P. Wales, Wilmington, has been appointed by the governor a member of the state board of health to succeed Dr. Charles A. Ritchie, who resigned recently.——Dr. Charles M. Hanby, president, and Dr. Harvey Murray have been reelected members of the state board of health.

DISTRICT OF COLUMBIA

Physicians' Organization.—The Wapiya (Sioux Indian name for medicine men) was organized the latter part of 1921, in Washington, and consists of 100 members of the University Club of the city. The officers of the Wapiya have Sioux Indian names also, Dr. Noble P. Barnes, president, "Itanca," and Dr. Everett M. Ellison, secretary-treasurer, "Wowabkaga."

Prevention of Venereal Disease.—Senator Owen of Oklahoma has introduced a bill in the senate for the prevention, treatment and detection of venereal diseases in the District of Columbia. The bill is a duplicate of the measure presented to the House of Representatives and favorably reported by Representative Gilbert, in March. It gives the district health officer the power to go into court and compel the examination of persons suspected of having venereal diseases. It also provides for the registration by physicians of all cases of venereal diseases, without revealing the identity of the patients.

FLORIDA

Physician Must Serve Term.—It is reported that Dr. R. C. Hammers, former Tampa physician, convicted five years ago of violation of the Harrison Narcotic Law, must serve four and one-half years at hard labor, under a recent decision of the United States Court of Appeals.

State Medical Meeting.—The forty-ninth annual meeting of the Florida Medical Association will be held in Havana, Cuba, June 27-28, not, as previously announced, on June 30. Connections will be made at Key West, from which port the S. S. *Cuba* will sail, Monday, June 26, at 9:10 a. m., arriving at Havana at 5 p. m. on the same day. Return excursion rates from Jacksonville will be $50.45. Association headquarters will be at Hotel Sevilla.

Board of Health News.—Dr. George A. Dame, director of the Bureau of Communicable Disease, is making, through its division of field service, brief surveys of each county, covering about 150 physical, sociologic and sanitary questions that frequently arise in the directing of public health activities in the state.——Capt. W. H. Gillette, U. S. Public Health Service, who has been detailed to the Bureau of Communicable Disease, Division of Venereal Disease Control, is carrying out an extensive program of lectures and motion pictures throughout the state on social hygiene.

ILLINOIS

Health Society.—The Illinois Health Society, with headquarters in Chicago, was recently granted a charter by the secretary of state. The incorporators are Dr. Isaac D. Rawlings, Springfield, and Dr. William A. Evans and Mary R. Plummer, both of Chicago.

Catholic Hospital Conference.—At the second Illinois conference of Catholic hospitals held recently, in Peoria, the eight-hour day in hospitals as a substitute for the twelve-hour day was voted on favorably. More than 500 sisters were in attendance. Rev. P. J. Mahan, Chicago, presided and gave the principal address.

Probe of Prescriptions.—According to Deputy Marshal J. J. Connors, Springfield, subpenas have been served on a dozen physicians of Peoria to appear before the federal grand jury for investigation into their prescription records, resulting, it is stated, from irregularities said to have been found in prescription records of a local physician.

New Bulletin on Milk.—The state department of public health announces that a new bulletin on safe milk supplies has just come from the press. Among other things is presented a suggested form for an effective milk ordinance suitable for cities throughout the state. There is also a list of milk pasteurization plants that operate in Illinois. Copies may be obtained on requests addressed to the director, State Department of Public Health, Springfield.

Health Promotion Week.—The governor has assigned May 7-13, as Health Promotion Week in the state to be conducted with a display of motion picture films, lantern slides, wall posters, the state department of public health's loan service of educational exhibit equipment, birth registration campaigns and better baby conferences. Ministers have been asked to choose, for the subject of a sermon on Sunday, May 7, a topic that will emphasize health promotion as a religious duty, and to announce Health Promotion Week to the congregations.

Sanitary Survey of Flooded Area.—The director of the state department of public health and other state officials made a survey of the flooded areas in the Illinois River valley, April 26, in order to consider the sanitary, relief and rehabilitation problems that have arisen at several points on account of the unusual inundation. As a result, several additional physicians attached to the state department of public health have been detailed for duty in the valley, with instructions to carry out the sanitary precautions that are indicated. Particular emphasis is laid on the protection of drinking water supplies and the safe disposal of wastes. Every possible means is being employed to encourage general vaccination against typhoid fever.

Fear Smallpox Epidemic in Illinois.—Smallpox incidence in Illinois has been relatively very light during the first four months of the year but two or three smoldering foci have threatened, and still do threaten constantly, to flare up into serious epidemics of widespread proportions. At the present time the outbreak is more acute at Pekin than it is elsewhere. The situation there is all the more serious since Pekin is located on the Chicago-St. Louis hard road, and the fact that there is increased motor traffic from distant points at this season lends support to the fear of spreading the disease broadcast.——The number of smallpox cases reported to the state department of public health from Pekin has gradually increased since January 1, with a total of twenty-nine for April. During the same period, an average of seventy-one cases per month has been reported from Peoria County, 75 per cent. of which occurred in the city of Peoria. Out of 1,053 cases reported from the entire state during the four months, Peoria County registered 284, or more than one fourth. State health officers are investigating the situation, with a view of instituting effective control measures.

Chicago

Prof. Walter S. Haines Completes Fifty Years of Teaching.—In June, Prof. Walter S. Haines of Rush Medical College will complete fifty years of teaching in the department of materia medica and therapeutics. A banquet of Rush alumni will be held at the Congress Hotel, May 17, during the session of the Illinois State Medical Association, at which it is planned to give recognition to this unusual record of service.

Alumni Reunions.—The annual meeting and banquet of the Alumni Association, University of Illinois College of Medicine, will be held at the Congress Hotel, May 17. Speeches will be omitted.——The Alumni of Loyola University School of Medicine, Chicago, will hold their annual reunion and banquet at the Congress Hotel, May 17. Those wishing to attend may notify Dr. Thomas F. P. Walsh, president, 736 East Sixty-Third Street.

Henry B. Favill Lectures.—The National Tuberculosis Association recently requested the Chicago Tuberculosis Institute to cooperate with the Henry B. Favill School of Vocational Training and give a course of lectures to the students for the purpose of training vocational teachers to go into tuberculosis sanatoriums to organize vocational training among the patients. This work was assigned to Dr. Ethan A. Gray, who gave two courses, of five lectures each, to the students of the Henry B. Favill School.

INDIANA

Personal.—Dr. Charles S. Woods, Indianapolis, superintendent of the Methodist Hospital, was recently elected president of the Indiana section of the American Hospital Association, to succeed Dr. George F. Keiper, Lafayette.——Dr. Earl Ray Royer, formerly of Indianapolis, has just returned from South America, where for two years he was head of the Curifamba Hospital, Portovelo, Ecuador, and chief surgeon for the Guayaquil and Quito Railroad.

Hospital News.—A new county hospital will be erected at Decatur, at a cost of $85,000.——A thirty-five bed addition will be built at the Goshen Hospital early in the summer.——Forty-five acres of land has been purchased for use of the Marion County Tuberculosis Hospital, Sunnyside. Appropriations of $118,731 have been made.——A new hospital will be erected at Oxford in the near future.——The St. Joseph's and Epworth hospitals at South Bend will be enlarged to double their capacity. The St. Joseph addition will be erected at a cost of $250,000 and the Epworth Hospital will expend $150,000.——Construction work has been started on a hospital at Elwood.

IOWA

Physician Honored.—The Jefferson County Medical Society gave a dinner, April 15, at Fairfield, in honor of the fiftieth anniversary of Dr. Winfield Fordyce's practice in the county, where he opened an office, April 15, 1872, at Glasgow. Dr. Fordyce spoke on "Reminiscences."

County Societies and County Physicians.—Following a precedent established by Blackhawk County, the duties of the Mahaska County physician are to be assumed by the entire membership of the Mahaska County Medical Association. For this service, the association will receive $1,200 a year.

Venereal Disease Hospital.—A temporary building has been constructed east of the State University of Iowa Hospital, Iowa City, to be used as a venereal disease hospital, with a forty-bed capacity. The purpose of this institution is to cooperate with the U. S. Public Health Service and the state board of health in their effort to suppress venereal disease and to increase the facilities available for that phase of the work. Dr. N. G. Alcock, professor of genito-urinary diseases, will be in charge.

Personal.—Dr. William Bruff, Atlantic, recently sailed for Seoul, Korea, where he will teach bacteriology in Serrerance.——Dr. W. H. Bell, Fontanelle, has returned from two and one-half years spent in Turkey with the American Red Cross for which he was decorated by the Turkish government.——Dr. Ralph W. Mendleson, formerly of Des Moines, has been given the order of the White Elephant by the government of Siam and the order of St. Sava, by the Serbian government, in recognition of his work in sanitation with those governments.——Dr. William A. Rohlf, Waverly, was reelected president of the Medical Life Insurance Company, recently.

LOUISIANA

New Laboratory Established.—The state board of health has established a branch laboratory in Monroe, to look after the work of northwestern Louisiana. The laboratory is a public health laboratory and will accept no fees.

Physician Honored.—The Orleans Parish Medical Society presented Dr. Ernest Sidney Lewis, New Orleans, with a loving cup, April 24, in commemoration of the completion of his sixtieth year in the active practice of medicine. Dr. Lewis is in his eighty-second year.

MARYLAND

De Lamar Lectures.—Dr. John P. Lotsy, research fellow of the Dutch Society of Sciences, Holland, gave a lecture on "The Species—Concept in Evolution and Hybridization" at Johns Hopkins University, Baltimore, May 1, under the De Lamar course of lectures in hygiene.

Plans for Opening a Negro Clinic.—Plans for the opening of a clinic for venereal diseases in the Provident Hospital for negroes have been completed. Two negro physicians and a negro social worker will have charge of the clinic, which is under the direction of the Baltimore City Health Department.

Physician Receives Appointment.—Dr. Harry Richmond Slack, Jr., associate professor of laryngology, Johns Hopkins University Medical Department, Baltimore, has been appointed exchange professor to the Union Medical College, Peking, China. Dr. Slack will be professor of otolaryngology and organize and preside over that department. He will sail in August and will be away one year.

Personal.—Dr. Joseph C. Bloodgood, Baltimore, is one of ten men selected from the 20,000 alumni of the University of Wisconsin in this country for a place in the Wisconsin Hall of Fame.——Dr. Joseph C. Swenarton has been appointed assistant director of the bureau of bacteriology of the Baltimore City Health Department. Dr. N. G. Mydrea gave a lecture recently before the members of the Contemporary Club, Baltimore, on English hospitals in Arabia.

Medical and Chirurgical Faculty of Maryland.—At the one hundred and twenty-fourth annual convention of the faculty, held in Baltimore, April 25-27, under the presidency of Dr. Arthur H. Hawkins, the following officers were elected for the ensuing year: president, Dr. Herbert Harlan, Baltimore; vice presidents, Drs. James M. H. Rowland, Harry Friedenwald and Peregrine Wroth, Jr.; secretary, Dr. Joseph Albert Chatard, and treasurer, Dr. Charles E. Brack.

MASSACHUSETTS

Meeting of Physicians.—The fifty-fourth meeting of the Massachusetts Association of Assistant Physicians of the department of mental diseases was held at the Waverly School for the Feebleminded, Waverly, April 26.

MICHIGAN

New Director of Child Hygiene.—Dr. Blanche M. Haines, Three Rivers, has been appointed director of child hygiene and public health nursing of the state department of health by the commissioner of health, to succeed Miss Harriet Peck, May 15. The appointment of Dr. Haines is in keeping with the federal policy of having a physician in charge of child hygiene work in each of the states administrating Sheppard-Towner Bill funds.

Banquet for Physicians.—The Wayne County Medical Society gave a banquet, April 28, in Detroit, as a token of appreciation of the record of twenty-eight physicians who have practiced for forty years in the same community. Dr. H. Wellington Yates was toastmaster. The honor guests at the banquet were: Drs. John E. Clark, C. Henri Leonard, Jay M. Burgess, Beverley D. Harrison, William C. Stevens, Oscar S. Armstrong, Daniel R. Donovan, Charles Douglas, W. P. Manton, Daniel LaFerté, Charles G. Jennings, Lewis E. Maire, Willard Chaney, William R. Chittick, John K. Gailey, John T. Hornbrook, Albert B. Lyons, Stanley G. Miner, Ernest Schorr, John R. Shaffer, Irwin S. Townsend, Daniel Geib, Eugene Smith, Sr., John R. Jones, Justin E. Emerson, Carl Bonning, Joseph Schulte and Oscar LeSeure.

MINNESOTA

New Surgical Society.—The Minneapolis Surgical Society has recently been organized in that city, with a charter membership of twenty-four. Dr. Roscoe C. Webb was elected president of the society, and Dr. Arthur A. Zierold, secretary-treasurer.

Annual Clinic Week.—The fifth annual Minneapolis Clinic Week was conducted, April 10-15, under the auspices of the Hennepin County Medical Society. The annual banquet of the society was held, April 11, at which Lieutenant-Governor Collins and Dr. Jabez N. Jackson, Kansas City, were the principal speakers.

MISSOURI

Honorary Degree for Physician.—At the eighth annual commencement of the University of Missouri at Columbia, Dr. Richard L. Sutton, Kansas City, was presented with the honorary degree of doctor of laws.

NEW YORK

Hospital News.—The new Soldiers' and Sailors' Memorial Hospital at the State Masonic Home, Utica, was formally dedicated by the Freemasons, April 22. The hospital was erected under the supervision of the war relief administrations of the fraternity and has a capacity of 232 beds.——A building fund has been collected for the erection of a $225,000 building for St. Mary's Hospital, Rochester.

New York City

Gift to Hospital.—A gift of $20,000 has been made by Edwin Gould to St. Mark's Hospital. The money will be used to help pay off the mortgages on the hospital buildings. Mr. Gould has offered an additional $10,000 if others will contribute the $47,000 needed to clear the indebtedness on the main building.

Funeral Services for Surgeon-General Sutton.—Military and Masonic funeral services were held in St. Agnes Chapel, April 30, for Dr. McWalter B. Sutton, surgeon-general of the United American War Veterans, who died, March 29, in Hamburg, Germany. Dr. Sutton served as an officer in the Spanish-American War, and in the World War was surgeon on several army transports. He accompanied the American Red Cross expedition to Russia in 1918.

Dinner to Dr. S. Josephine Baker.—About 300 men and women, including physicians, social workers and members of the nursing profession, attended the dinner, April 26, given to Dr. S. Josephine Baker, head of the bureau of child hygiene of the New York City Health Department, at the Hotel Commodore, who has been appointed by State Health Commissioner Herman M. Biggs as consultant in child hygiene in connection with the organization of a new division in the state department of health provided by the Davenport law.

NORTH CAROLINA

Tuberculosis School.—A tuberculosis school will be conducted by the U. S. Public Health Service, June 1-30, at the government tuberculosis sanatorium in Oteen, N. C. The class will consist of thirty medical officers and thirty nurses, who will be drawn for the most part from other public health service hospitals. A few others who are identified with tuberculosis work in different parts of the country, although not employed by the government, will be admitted. The first school, which graduated twenty-two physicians and nineteen nurses who had been selected from the fifty-six hospitals of the service, was patterned after the summer school at Saranac Lake, N. Y., with necessary adaptations to the special work required. This sanatorium was built during the war by the Army and was later turned over to the U. S. Public Health Service.

OREGON

Society Changes Name.—The name of the Portland Ophthalmological and Oto-Laryngological Society has been changed to the Oregon Academy of Ophthalmology and Oto-Laryngology. The officers for the ensuing year are: president, Dr. C. Gertrude French, The Dalles, and secretary-treasurer, Dr. Andrew J. Browning, Portland.

PENNSYLVANIA

Social Workers Meeting.—A district meeting of the American Association of Hospital Social Workers was held in Philadelphia, May 1. Dr. Daniel J. McCarthy, professor of medical jurisprudence, University of Pennsylvania, spoke on "Social Service and Efficiency."

Compensation for Children.—According to a decision handed down recently by the compensation referee at Philadelphia, child workers between the ages of 14 and 16 who are injured on their way to continuation school are entitled to the benefits of the workman's compensation act.

Personal.—Dr. James A. Irwin, Philadelphia, will sail in May for an extensive tour of Europe and the British Isles. ——Prof. D. Wright Wilson, Ph.D., professor of physiologic chemistry, Johns Hopkins Medical School, Baltimore, has been appointed to fill a similar position at the University of Pennsylvania, to succeed Dr. Alonzo E. Taylor.

Beds for Tuberculous Patients.—Less than 700 beds are provided for the use of patients suffering from advanced tuberculosis in Philadelphia, when the accepted standard calls for one available hospital bed in a community for each death from tuberculosis in the year. This would require the city of Philadelphia to maintain approximately 2,500 beds for this purpose.

Hospital News.—The site of a new tuberculosis hospital has been selected in Butler Township, comprising forty-five acres located near the Kis-Lyn school. The cost of the ground was $12,000. Plans for the building have already been made.——The Andrew Kaul Memorial Hospital, St. Mary's, will soon be ready for occupancy.——At a meeting of the Pennsylvania Mystic Shrine, at Harrisburg, Philadelphia was selected as the site for a $500,000 Shrine home for crippled children.——A recent survey of Philadelphia city hospitals revealed a dearth of accommodations for private patients. At the Jefferson Hospital, patients are forced to register weeks in advance. The situation has become so serious that the hospital will erect a new building. It will be fourteen stories high and will be constructed at a cost of $1,500,000. The institution will be opened to the public in one year.

SOUTH CAROLINA

Palmetto Medical Association.—The twenty-seventh annual meeting of the association was held at Aiken, April 25-28. Dr. William M. Thorne, Charleston, was elected president of the association and Dr. C. C. Johnson, Aiken, secretary. The next annual meeting will be held at Camden, in April, 1923.

Health Campaign.—Under the direction of the South Carolina Board of Health and the U. S. Public Health Service, a health campaign will be conducted for a period of one year in Greer. One half of the expense will be borne equally by the state and the International Health Board, the other half jointly by the town of Greer and the cotton mill interests of that place.

TENNESSEE

Offices of Journal Moved.—The offices of the *Journal of the Tennessee State Medical Association* have been removed to the office of Dr. Larkin Smith, Nashville, the new secretary of the association, who succeeded Dr. Olin West.

TEXAS

Personal.—Dr. William G. Howell, associate physician at Cragmor Sanatorium, Colorado Springs, Colo., has been appointed director of the new Baptist sanatorium at El Paso. ——Dr. Clarence W. Coutant, medical director of the Southern Baptist Sanatorium, El Paso, has resigned to become assistant to the medical officer, Fourteenth District, U. S. Veterans' Bureau, Dallas.——Dr. William S. Carter, head of the department of physiology, University of Texas Medical Department, Galveston, has left for the Philippine Islands to represent the Rockefeller Foundation in the University of the Philippines, College of Medicine and Surgery, Manila.

VIRGINIA

New Wing at Hospital.—Gifts of $60,000 have been made for the construction of an orthopedic wing to the University of Virginia Hospital, Charlottesville.

WASHINGTON

Medical Golf Day.—The Seattle Golf Club was the scene of Medical Golf Day, April 27. The entire day was given over to the game. Vancouver and Victoria, B. C., sent over a team of their best players, and in the evening the golfers' annual banquet was held.

WISCONSIN

County Clinic.—The first clinic in Waukesha County for crippled children was held in Waukesha, April 15. The Waukesha Red Cross engaged Dr. J. O. Deiterle, Milwaukee, to conduct the clinic.

Registration for Nurses.—The bureau of nursing education of the Wisconsin State Board of Health is endeavoring to spread knowledge of the necessity for all nurses practicing in that state as graduate nurses to possess a reregistration card issued by that office. The new law requires an annual reregistration by such nurses, to make their practice legal. It is specifically required that all who work as trained, graduate, certified or registered nurses shall hold a certificate from the state board of nurse examiners. The attention of nurses, especially the older graduates, is called to the fact that, if their certificates have never been recorded with the county clerk, they should record them at once, as the holders cannot be considered as registered until the law has been fully complied with. All registrations expire on December 31 of each year.

CANADA

Canadian Medical Association.—At a meeting of the association, held recently in Halifax, a resolution was adopted increasing the annual fee for members, including the *Journal*, to $10. It is believed that with the increased income greater service can be rendered its members and the *Journal* can be improved.

GENERAL

Indian Research Fund.—It is reported that the Rockefeller Foundation has offered to Indian medical graduates, selected by the scientific board of the Indian Research Fund, five scholarships of $1,000 each, for the purpose of graduate public health work in America.

Medical Women's National Association.—The annual meeting of the association will be held in St. Louis, May 22-23, under the presidency of Dr. Mary Elizabeth Bass, New Orleans. Dr. L. Rosa H. Gantt, Spartansburg, S. C., is secretary-treasurer of the association.

International Congress of Ophthalmology.—The International Congress of Ophthalmology met in Washington, April 25 and 26. The congress was greeted by Vice President Coolidge. During the first session, Dr. William H. Wilmer of Washington presided. Representatives of many foreign countries attended the meetings. The following officers were elected: president, George E. de Schweinitz, Philadelphia, and secretary, Luther C. Peter, Philadelphia.

Bureau of Indian Affairs.—The National Health Council has recently issued a report on the health section of the U. S. Bureau of Indian Affairs, which describes the government health work among the Indians. This is the sixth report issued by the council and a statement concerning the division of welfare of the Postoffice Department is now in preparation. The reports already published are: Division of Vital Statistics, Bureau of the Census, Children's Bureau, and Women's Bureau Department of Labor, Division of School Hygiene, Bureau of Education, and a general report of government health activities. Copies can be obtained gratis from the office of the council, 411 Eighteenth Street, N. W., Washington, D. C

Water Pollution.—It is stated by the U. S. Public Health Service that certified water of satisfactory quality and safety may be so handled in its delivery and storage aboard a vessel as to render it unfit and unsafe for consumption. The methods used by passenger vessels operating on the Ohio and Mississippi rivers have frequently resulted in contamination of the water. On the Great Lakes, on the other hand, the methods used are satisfactory and the results of the bacteriologic analyses show much lower bacteria content. By law, drinking water on vessels engaged in interstate traffic must be obtained from certified sources ashore or must be purified by treatment aboard "by approved method." The report recommends that hydrants of the public water supply be placed on the piers at places convenient for delivery through hose. The hose so used should be carefully protected from contamination from the river water and other sources and should be used for no other purpose. When the river level is subject to marked changes, a water pipe should be run down the incline of the landing; and city hydrants, properly protected, should be placed on it at about each 15 feet of vertical rise in the landing. Preliminary steps to do this are now being taken at Louisville, Cincinnati, Evansville, Huntington, Pittsburgh and other river ports.

Bequests and Donations.—The following bequests and donations have recently been announced:

The New York Association for Improving the Condition of the Poor, $300,000. to establish a country home for nurses; Yale University, New Haven, $10,000 for a scholarship; Massachusetts General Hospital, Boston, $10,000; Saint Mary's on the Mountain, Sewanee, Tenn., $5,000, by the will of Miss Emily Howland Bourne of New York City.

The City Hospital, Akron, Ohio, the estate, valued at $101,416, of a former resident of Akron.

A children's orthopedic and a children's general hospital will be endowed at a cost of $100,000 each by the executor of the estate of John Finch of Spokane.

The Knoxville (Tenn.) Health and Welfare Association, $8,457, by general donations.

Devitt's Camp for Tuberculosis at Allenwood, Pa., $5,000; Rush Hospital for Consumption and Allied Diseases, Philadelphia, $1,000, by the will of Harry E. Schnell of Philadelphia.

Camden Hospital, Camden, S. C., $4,723, by general donations.

King's Daughters' Hospital, Brookhaven. Miss., $1,000, to complete the nurses' home, by members of the Ku Klux Klan.

Parker Convalescent Home, New Orleans, $1,000, by the will of Dr. J. D. Hunter of New Orleans.

For a new hospital in Clear Lake, Iowa, Dr. J. A. Swallum has donated a site valued at approximately $4,000. Six other physicians will give $1,000 each for the cause.

Reading Sanatorium for Treatment of Tuberculosis, Reading, Pa., $500, by the will of Mrs. Amelia Bausman.

The fund for children suffering from tuberculosis, Tampa, Fla., $205, by general donations.

LATIN AMERICA

Medical Congress in Brazil.—The Society of Medicine and Surgery of Rio de Janeiro has taken the preliminary steps for the celebration of the first national medical congress, in September, 1922, when the first centenary of Brazilian independence will be celebrated. The honorary presidents of the congress will be the president of Brazil and Dr. Catta Preta, the dean of Brazilian physicians. The congress will include five sections: public assistance, presided over by Dr. Luiz Barbosa; public health, Dr. Carlos Chagas; social medicine, Dr. Cardoso Fonte; professional practice, Dr. Ernesto Nascimento Silva, and medical teaching, Dr. Miguel Couto.

New Cuban Journal.—The medical staff of the Municipal Hospital of Havana has begun the publication of a journal entitled *Archivos del Hospital Municipal de la Habana.* In the first number, there appeared original articles by Drs. B. Souza, Ernesto R. de Aragón, G. Pedroso, G. Lequerica, A. Inclán, V. Pardo Castelló and F. D. Naranjo. The subscription price is $6 (6 pesos) a year, single copies, 50 cents. The editors are Drs. B. Sousa, Bernardo Gómez Toro, Alberto Inclán and J. M. Ramírez-Olivella. The personnel of the hospital consists of a director and assistant director, including surgeons, otorhinolaryngologists, ophthalmologists, dermatologists, obstetricians, etc.

Hospitalization in Brazil.—By the terms of Legislative Decree No. 4,428, of Dec. 28, 1921, the Brazilian congress authorized the government to establish sanatoriums for the treatment of tuberculosis, near or within the federal district, and at other points within the country, preference being given to those states in which the epidemic coefficient of tuberculosis is highest. In the extension of these sanatoriums, arrangements will be made with the state government for a division of the expenses. Each sanatorium will be provided with at least 100 beds, and a section of these will be reserved for paying patients. The decree also authorizes the government to assist, by means of loans of from 600 to 800 contos (from about $75,000 to $100,000 at the present rate of exchange), the first three private institutions of the same type and capacity, whose construction shall have been started within one year after promulgation of this law and which are completed within two years, the maximum amount of each loan being left to the judgment of the government and determined by the number of beds in the sanatorium. To avail themselves of such aid, the institutions must be built especially for the treatment of tuberculosis, on plans conforming with the requirements of the National Department of Public Health. Guarantees must also be furnished for the repayment of the sum loaned, and an annex provided with beds, in the proportion of 10 per cent. to the total number in the sanatorium, for the treatment of government employees, who shall receive a reduction of 50 per cent. on the usual charges.

FOREIGN

Congress for Protection of Mothers.—The League to Combat Infant Mortality, an international congress for the protection of mothers and infants, will be held in Paris, July 6-8.

Diseases of the Gastro-Intestinal Tract.—The third congress on diseases of the alimentary canal was held in Homburg, April 28-29. Cholelithiasis and the relations between disturbances of the circulatory and digestive system were the principal subjects discussed.

Royal College of Physicians of London.—At a special meeting of the college, in London, April 10, Sir Norman Moore, president, resigned after four years of service. He was succeeded by Sir Humphrey Rolleston, who was also appointed representative of the college at the celebrations in honor of the founding of the University of Padua.

German Medical Fees.—April 1, new medical rates went into effect in Germany; in the case of foreigners, the physicians must be paid in dollars. Medical advice in the consulting room during office hours costs from 10 to 200 marks; for calls at the patient's house, the fees range from 20 to 400 marks, and for night visits, 40 to 600 marks must be paid.

Mosquito Research Work.—Investigation of the habits of *Anopheles plumbeus* will be resumed by the mosquito investigation committee of the South-Eastern Union of Scientific Societies, England, which was impossible in 1921, owing to the drought in that country. Particulars can be obtained from the Rev. Oswald Hicks, Lesware, Linden Road, S. E. 15, London.

Legislative News.—A bill has been presented in the French parliament providing for the extension of the health insurance operative in Alsace-Lorraine to the rest of the country. Health and old age insurance was compulsory in Alsace-Lorraine when the province was part of the German Empire, and though now again a part of France, it retains its former insurance laws.

Antituberculosis Act.—A new antituberculosis act which makes state support available to private organizations instead of increasing the number and scope of public institutions, has recently been passed in Belgium.——A new national association of private organizations to fight tuberculosis has recently been formed, and will receive a state grant of several million francs.

Rank of University Professors.—It was recently announced by the Polish Bureau of Information in New York that university professors in Poland have equal rank with major generals, and, being state officials, are accorded all the rights and privileges enjoyed by major generals. It was reported that there are at present 638 full professors in the universities of Poland and higher academic schools.

Alcoholism in Vienna.—The medical faculty of the University of Vienna has been asked by the Bundes-Präsident to appoint a committee to draw up an appeal to the government in regard to the serious injury that is being done to the present and coming generation by the increasing alcoholism, and presenting scientific bases for the necessity of a vigorous legislative campaign against the abuse of alcohol.

Entire City a Clinic.—Sir James MacKenzie is conducting a clinic in St. Andrews, Scotland, for the entire population of the town. Every resident is being kept under strict medical supervision, examined minutely, and all symptoms noted, after which they pay monthly visits. In the case of babies, a record will be kept from birth to death, in order that physicians may note the inception, as well as the progress and cure of diseases, which they may contract.

Cremation Society of England.—At the annual meeting of the society, March 29, in London, the report was read stating that, in 1921, 1,922 cremations took place in Great Britain. It was announced that since the opening of the first crematorium at Woking, in 1885, there have been 25,418 cremations. There are sixteen crematoriums in Great Britain, fifteen in England and one in Scotland. Another is to be erected in the near future at Pontypridd, Wales. It was estimated that 1,000 ordinary burials in single graves require 1 acre of ground.

Undernourishment and Tuberculosis in Adults.—The *Zeitschrift für Tuberkulose* publishes a communication from Lubarsky of Moscow telling of the change in the form of tuberculosis observed there now in adults, discussed at a recent meeting of a local medical society. The form seems to be more like that in children; miliary tuberculosis is growing more common, and galloping consumption or a combination of bilateral pleurisy and peritonitis, and often the pleuritis is hemorrhagic. Tuberculous meningitis is also common in adults. He ascribes the modification of the form of the disease to the loss of immunity from the undernourishment.

Medical Advertising in Germany.—The committee appointed by the German Aerztebund to supervise medical advertising has published an appeal to physicians to refrain from prescribing any medicinal article, the chemical nature and pharmacologic action of which is not known from publications in medical periodicals or textbooks. The *Medizinische Klinik* says: "The committee warns expressly against proprietary medicinal articles for which exaggerated claims are made, especially those in advertisements in the lay press. No advertisements of this kind should appear in medical journals. Any inquiry about a medicinal article should be sent, with return postage, to Dr. Holste at the office of the Arzneimittelkommission of the German Internal Medicine Society at Jena." The work of this commission is somewhat along the lines of the Council on Pharmacy and Chemistry of the American Medical Association.

Sanitary Conferences in Europe.—Among the resolutions adopted at the recent sanitary conference at Warsaw, under the auspices of the League of Nations, is one that emphasizes the necessity for fighting the epidemics that threaten western Europe from the East, not only at the boundaries, but carrying the fight into the centers of the epidemics, in Ukraine and White Russia. The conference further went on record as stating that without simultaneous action to relieve the starving people, purely sanitary measures will not be of much avail. The *Deutsche medizinische Wochenschrift* gives further particulars. Drs. Frey, Otto and Mühlens were the representatives from Germany.——A conference was held also at Riga, representing the border states, including Finland and Poland. The American Red Cross and the League of Nations also had delegates here. As no representative from the soviet government appeared, no official steps could be taken. The *Klinische Wochenschrift* remarks that the fertile land of Ukraine lacks grain for seed, and war, famine, epidemics and refugee misery have made it a hotbed for epidemics.

Deaths in Other Countries

Prof. **Francis D. Boyd,** Moncrieff-Arnott, professor of clinical medicine, University of Edinburgh, Scotland, April 4.——**Sir Alfred Pearce Gould,** author of "Elements of Surgical Diagnosis," former president of the Medical Society of London and the Roentgen Society, April 19.——Dr. **J. F. Fischer,** a pioneer roentgenologist of Denmark, chief of the roentgen service of the Kommunehospital and one of the editors of the *Acta Radiologica Scandinavica,* aged 54.——Dr. **J. Martín Carro Campos,** prominent in the medical service of the Argentine navy, died at Buenos Aires recently.——Dr. **H. P. Jaeger,** assistant at the Zurich University Surgical Clinic, committed suicide at Vienna where he was serving as interchange assistant, aged 31.——Dr. **J. T. Merz,** author of "History of European Thought in the Nineteenth Century," aged 82.——Dr. **L. Riess,** formerly director of the medical department of the Friedrichshain Hospital at Berlin, aged 82.——Dr. **Weber,** chief of the Red Cross Hospital at Kassel.——The *Dermatologische Wochenschrift* mentions the death of Dr. **Marie Kaufmann,** director of the Dermatologic Clinic at Berlin.——The *Scalpel* reports the death of Dr. **H. J. Dupont,** a prominent Belgian army surgeon.

CORRECTION

Rockefeller Foundation Not Providing Physicians for Rural Service.—Referring to an item published, February 25, relative to a plan for stimulating settlement in rural communities by physicians, the Rockefeller Foundation states that it has not agreed to subsidize medical practice in rural communities, and that while it is interested in the question of medical service for rural districts, it has not undertaken any direct cooperation in providing such service.

Government Services

Government Homes to Receive Disabled Rejected Draftees

National homes for disabled volunteer soldiers have been authorized to receive as patients of the U. S. Veterans' Bureau a certain class of ex-service men who, during the draft, were accepted by local boards and later rejected at the training camps for physical defects. These men are eligible to entrance into these homes only when they can prove that they are in needy circumstances.

Statistics on Disabled Veterans

According to the report of the director of the U. S. Veterans' Bureau, there are at present 30,879 disabled ex-service men and women receiving hospital care and treatment under the U. S. Veterans' Bureau in hospitals and institutions throughout the country. These men, the report says, are still suffering from wounds, injuries or shock of battle or illness while in the service, almost four years after the close of the war. There are at present 12,274 tuberculous ex-service men and women hospitalized in the various institutions under contract or directly operated by the U. S. Veterans' Bureau. There are also 9,069 neuropsychiatric cases, in many of which the patients are suffering from war neurosis, and 9,536 ex-service men who are hospitalized and whose cases are classified as general medical and surgical.

New Legislation for Care of Disabled

Disabled ex-service men, members of the Army and Navy nurses' corps and their dependents, are entitled to compensation and hospital treatment regardless of whether their disabilities were incurred while in actual service during the World War, provided they are suffering with certain diseases, according to an amendment to the War Risk Insurance Act, introduced in Congress by Senator Calder of New York. The diseases named in the measure include neurosis or psychoneurosis, active tuberculosis and chronic empyema. In all cases in which former service men and women develop any of these diseases within three years after their separation from the service, they will be entitled to compensation. The Calder bill also fixes the rate of total permanent disability at $100 per month and double total permanent disability at $200 per month. The measure was referred to the Senate Committee on Finance.

Campaign for Insurance

The U. S. Veterans' Bureau of the fifth district in South Carolina conducted an insurance campaign week, April 10-17, for the purpose of reinstating and converting the term insurance of ex-service men. The required examinations for reinstating the term insurance will be given by any authorized salaried physician of the U. S. Veterans' Bureau or the U. S. Public Health Service. Applicants for reinstatement of insurance will not be required to pass a physical examination if the date of lapsing is less than three months from the date of reinstatement. Disabled men will be required to pass physical examination and pay all back premiums with 5 per cent. interest compounded annually from date of lapsing. Men not disabled will be required to pass physical examination after three months' time from date of lapsing, but will only be required to pay two monthly premiums, one at the rate in force when the insurance lapsed and one at the rate of reinstatement.

U. S. Public Health Service to Hold Examinations

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held at Washington, D. C., May 15 and June 12, and in San Francisco, June 12. Candidates must not be less than 23 nor more than 32 years of age. They must pass oral, written and clinical tests before a board of medical officers.

Foreign Letters

PARIS

(From Our Regular Correspondent)

April 14, 1922.

The European Health Conference

The questions discussed at the European health conference held recently at Warsaw, at which France was represented by Dr. Cruveilhier, and Dr. Baron, army physician with the French military mission at Warsaw, did not attract as much attention as the Genoa conference. Nevertheless, they were of the highest importance, since they dealt with the means of warding off epidemics, now threatening the whole of Europe. The condition in which Russia found herself during and after the World War favored the development of deadly epidemics, especially of typhus, recurrent fever, cholera, typhoid and dysentery. Before the war, the morbidity in Russia from exanthematous typhus was about 90,000 yearly, and from recurrent fever, 30,000. In 1920, the official number of typhus cases reached 3,000,000 and the cases of recurrent fever, 1,000,000. There was a proportionate increase noted in Poland and in other eastern countries. Notwithstanding the economic and social difficulties, these countries organized and applied a system of control and prevention, which resulted in some improvement during the first nine months of 1921. In Russia, the number of typhus cases dropped from 3,000,000 to 600,000; in Poland, from 157,000 to 48,000, and in Roumania, from 45,855 to 4,834. But, unfortunately, toward the end of 1921, the period of famine, which caused a considerable migration, first from province to province and then from country to country, caused a sudden and violent recrudescence of typhus and recurrent fever accompanied by cholera. In the European migration of great masses of people westward from the contaminated regions of the Volga and Ukraine, and from the coast of the Black Sea, lies a serious menace to the rest of Europe. Unfavorable conditions prompting migration from regions attacked by famine, and by the epidemics which generally follow, are increasing daily and becoming more and more threatening.

Thus, the conference is convinced that it is necessary to increase our efforts without delay if we wish to prevent the present epidemic conditions from causing more suffering and deaths among the people of the affected regions, from hindering reconstruction and commerce, and from spreading to the whole continent of Europe. The conference emphasized the fact that the present difficulties are enhanced by the lack of physicians and of competent personnel, and that this is due partly to the havoc played by disease and death in the ranks of those who devoted their lives to this campaign against death. Thus, in the presence of the necessity of reenforcing the medical and health personnel in order to combat epidemics in eastern Europe, and in view of the fact that such a fight can be successful only with the assistance of the health services of the countries interested, the conference, on the suggestion of Dr. A. Castellani, professor of the school of tropical medicine of London and delegate from Italy, recommended that courses of instruction for all ranks of the medical and health personnel be organized in two or three centers, as for example, Warsaw, Kharkof and Moscow. Experts chosen from the public hygiene service of all nations should be invited to cooperate with the instructing personnel. Permanent expositions showing all the apparatus needed in the fight against infectious diseases, and the means employed to combat them, should be organized in these centers. The conference believes that the reconstruction of Russia will not only be hindered as long as epidemics continue to rage but that the threatening extension of the epidemics to neighboring countries is a formidable obstacle to their reconstruction. Besides typhus and recurrent fever an epidemic of cholera is developing rapidly in Ukraine and in Russia, and the economic reconstruction of these countries should not be undertaken until sanitary conditions have been restored to normal. The ever present danger of these diseases would undoubtedly hamper all commercial undertakings and would paralyze any economic activities.

While the conference appreciates to its full value the work accomplished by the soviet authorities, it was, however, deeply concerned over the extent of suffering and the mortality in Russia. These considerations induced the conference to devise a plan of campaign combining its defensive efforts against epidemics on the frontiers with a direct attack on the focus of diseases in the interior of Russia. On the suggestion of Professor Otto, German delegate, the conference adopted a resolution concerning the necessity for completing measures of hygiene to be taken in Russia and in Ukraine, and for fighting famine, one of the principal causes of epidemics. All nations are invited to participate in this campaign, without which an efficient fight against disease is impossible. The conference, in consideration of the fact that sanitary conditions in Europe are extremely grave, agreed that the fight against epidemics could not be successfully carried on by the interested countries only, and all European governments agreed to participate actively. Nations combating the epidemics in their own territory with their own means will deduct from their dues an amount equal to the sums spent for the purpose. Contributions can be made in money, material or personnel. The execution of resolutions adopted by the European Health Conference of Warsaw is entrusted to the hygiene department of the League of Nations. If one of the European countries should lend its assistance to any of the interested countries, either in money or in any other form, through the Epidemic Commission of the League of Nations, the use of such funds or of material given will be entrusted to the commission. Finally, the commission emphasized the necessity, for the countries that do not belong to the League of Nations, of being represented in this organization.

Appendicitis and Mumps

Mumps, as we know, have a predilection for lymphoid tissue. All lymphoid organs are susceptible to reaction during the infection, and the tonsils, the spleen, the various ganglion groups and the lymphatic formations of the intestine often manifest injury during the disease by symptoms which, when grouped, take on clinical importance. Tonsillitis, and splenic and typhoid forms of mumps have already been described. In the last number of the *Toulouse médical*, Prof. G. Serr studies the relations of appendicular manifestations and mumps. On account of its anatomic and histologic constitution, and because of the intestinal inflammatory symptoms which often accompany parotid congestion, the appendix should naturally show acute and frequent reaction in mumps. However, the majority of studies on mumps do not even mention this complication; several works on appendicitis and its manifestations in infectious diseases do not speak of it, and few consider it of sufficient importance to make mention of it in an enumeration of the usual complications. In fact, instances of appendicitis complicating mumps seem scarce and not well determined, which is surprising, considering the diffusion of mumps. But if a well marked appendicitis is a rare complication of mumps, appendicular reactions, slight or even latent, disclosed only after careful examination, are more frequently encountered. There exists an obscure appendicular reaction, discovered only after careful examination, as well as a mumps meningitis which more frequently than not is symptomless and which only lumbar puncture can reveal. Serr made a systematic research on appendicular manifestations in 177 patients with mumps whom he observed during the war. Only once did he encounter a case of unquestionable appendicitis with perforation, which necessitated immediate intervention, thus giving proof of the correctness of the diagnosis. Such grave cases are exceptional in mumps. More often appendicular crises presenting Talamon's appendicular colic are encountered; but slight appendicular manifestations are far more frequent. The clinical picture is constituted by the symptoms of both affections. This association does not give a special character to the symptomatology. It is more or less distinguished by the intensity of the appendicular manifestation and also by the period during which the complication appears. Slight appendicular manifestations which appear during mumps do not attract attention; they must be looked for. They are not accompanied by special disturbance of the general condition. Fever may not increase, and there are no chills nor peritoneal reaction. In certain cases, there is neither vomiting nor nausea. On deep palpation of the abdominal wall, no swelling nor puffiness is felt and only a localized sensitiveness is found at McBurney's point. The patient does not complain of spontaneous pains in the right iliac fossa. Sometimes a slight pressure on the abdomen is enough to cause pain. This pain persists for a few days with the same fixity and sharpness and then decreases and disappears. We must also take into account cases in which appendicitis manifests itself after the disappearance of the symptoms of mumps. In any case, it is important to watch carefully all patients who have presented signs of appendicitis during the course of mumps. They are predisposed later to attacks of appendicitis from ordinary causes.

Creation of a Central Medical Headquarters

Under the presidency of Professor Roger, dean of the school of medicine of the University of Paris, a conference, proposed by the Association générale des médecins de France, was held a few days ago at the school of medicine. Delegates from the various medical societies in and around Paris assisted at the session. Dr. Levassort, general secretary of the association, expressed the hope that medical headquarters would be established in Paris similar to those which are in existence in most of the capitals and large cities in foreign countries. This house would be a meeting place and an information center for the majority of learned societies, and would give all the assistance possible to physicians coming to Paris from the various parts of France and from foreign countries. These propositions were favorably received and the Association générale des médecins de France has already secured the help of the city of Paris for their realization.

LONDON

(From Our Regular Correspondent)

London, April 10, 1922.

Sir Patrick Manson

Sir Patrick Manson, G.C.M.G., M.D., LL.D., F.R.S., has died in London. Born in Aberdeenshire in 1844, he was educated at the University of Aberdeen, where he graduated in 1865. The following year, he began practice in the East, first in Formosa, and then in Amoy and Hong Kong. In the latter city, he was one of the founders of a college of medicine for the Chinese. When he began to practice, tropical medicine was so rudimentary that he found himself ignorant of many of the diseases with which he was confronted and books gave him little assistance. He immediately set to work to fill the gaps. His first great research was done on elephantiasis. During a visit to London in 1874, he heard of the discovery made by Lewis in 1872 that in the blood of the inhabitants of certain parts of India could be found a worm, which he called

Filaria sanguinis-hominis. In some cases, Lewis found the parasite associated with elephantiasis.

On investigation after his return to China, Manson found the filaria present, in certain districts, in 50 per cent. of the population while in others he was unable to find it at all. Using that "scientific imagination" which is necessary for great discoveries, he inferred that since the parasite showed no sign of growth in the blood or capacity for reproduction, it was in an immature form. After much work, he found that this was true; but the discovery had been anticipated by two great pioneers of medical helminthology, Bancroft and Lewis. The problem remaining was, How did the parasite gain access to the body? Manson argued that, as it was never found in any of the natural discharges, it could not escape spontaneously and so be carried from man to man, without the aid of a vector capable of penetrating the skin and imbibing the blood. The most likely one seemed to him to be the mosquito. To determine the frequency with which the filaria was present in the blood, he, with the aid of two Chinese medical students whom he trained for the purpose, examined the blood of 1,000 natives. One assistant worked by day, the other by night. The former seldom found a filaria; the latter, many. This led to the discovery that the parasites appeared in the blood about sunset and gradually decreased toward morning. The periodicity suggested adaptation to the nocturnal habits of the mosquito. Manson found that the filaria was imbibed with the blood and flourished in the digestive juices of the mosquito. He traced the parasite through the stomach wall into the abdominal cavity and thence into the thoracic muscles and the proboscis, where it was ready to infect man on biting. During this passage, it developed a mouth, alimentary canal and sexual organs, and grew enormously. He conjectured that when the mosquito died the filaria escaped into water and thus reached the human body. By systematic examination of the blood of the natives of many tropical countries, he discovered three other species of filariae.

His next stroke of genius was the extension of the knowledge so gained to malaria. The hypothesis of an insect-borne origin was not new, but it was only a surmise which was never accepted and had been forgotten when Laveran, in 1880, discovered the plasmodium of malaria. In 1894, Manson pointed out how closely parallel were the conditions of its evolution to those of the filaria. He reasoned that, as it also was incapable of leaving the body spontaneously, being enclosed in a red corpuscle, some blood-sucking animal must be the agent of transmission. He had not the opportunity of testing this hypothesis, but he inspired Ross to do so. He even suggested that, failing human subjects, Ross should work out the life history of the corresponding parasites in birds. This Ross did and from this basis established the mosquito-borne origin of malaria. This in turn led to discovery of the similar origin of other tropical diseases—yellow fever, tick fever, trypanosomiasis and to the development of almost the whole science of tropical hygiene.

Manson returned to England, and, in 1895, was appointed to the first lectureship on tropical medicine in London, which was established at St. George's Hospital. He became medical adviser to the Colonial Office and was thus enabled to impress on the government the importance of medicine in colonization. Mainly through his influence, the London School of Tropical Medicine was opened in 1899. This was a model for schools which were founded in other countries. Manson was not only a great discoverer but an inspiring teacher and a lucid writer and systematizer. He stated that 99 per cent. of tropical diseases are caused by germs which in their extracorporeal stage are very vulnerable. He conjectured that the mode of conveyance by insect vectors applied to many protozoal germs, the life history of which had not been worked out. Of his many and important publications, it is necessary to mention only his textbook "Tropical Diseases," which went through many editions and was translated into the French. It may be scarcely fair to the pioneers of tropical medicine, who mostly belonged to the Indian Medical Service, to call him, as has been done, "the father of tropical medicine," but he was certainly the father of tropical entomology and hygiene.

A Congress of Radiology and Physiotherapy

It was intended to hold a congress of radiology and physiotherapy in London in 1921, but, owing to the railway strike, the meeting was postponed. It will be held June 7-10. It has been arranged by the Section of Electro-Therapeutics of the Royal Society of Medicine and the British Association for the Advancement of Radiology and Physiotherapy. There will be three sections—radiology, physiotherapy and electrology. Dr. Thurstan Holland of Liverpool is president of the first section. The first day will be devoted to study of the stomach. The morning discussion will concern the normal stomach and will be opened by Dr. Barclay of Manchester, Dr. Peremans of Antwerp and Drs. Colombier and Tribout of Paris. The afternoon discussion, on the abnormal stomach, will be opened by Dr. Béclère of Paris, Dr. Murdoch of Brussels and Sir Archibald Reid. The other subject for this section is deep therapy by roentgen rays and radium. It will be opened by Dr. Ledoux-Lebard of Paris, and Madame Laborde, Dr. Casman of Antwerp, Mr. Hayward Pinch, director of the Radium Institute, and Dr. Robert Knox.

Demonstrations will be given in various hospitals, including one on intraperitoneal injection of oxygen, at St. Bartholomew's Hospital. The section on electrology will be under the presidency of Dr. E. P. Cumberbatch. The subject of the action of the direct (constant) current on the tissues beneath the skin and mucous membrane will be introduced by Dr. Turrell of Oxford. Discussion of electrical methods in the diagnosis and prognosis of paralysis will be opened by Dr. R. Woods of London and Dr. Bourguignon of Paris. Other subjects are: the action and uses of high frequency currents, the physiotherapy of cardiac disorders, and reeducation of muscles in scoliosis, backache and referred pain. Applications for membership in the congress should be addressed to Dr. James Metcalf, 123 Harley Street, London. The subscription is $10.

BUCHAREST

(From Our Regular Correspondent)

April 2, 1922.

Occurrence of Several Cases of Pseudorabies

Dr. Levesinsky, medical officer in Zagreb, Jugoslavia, reports a terrible outbreak of rabies recently, there being no less than twenty persons reported to be suffering from hydrophobia. Among the number is a man who was bitten by a child 8 years of age, who had himself contracted the disease from the bite of a schoolfellow. No mention is made of mad dogs, and, on investigation of the circumstances, it becomes evident that although the alleged outbreak owed its origin to one, or possibly, two genuine cases of hydrophobia, the other cases are, in all probability, of the nature of imitative hysteria or, as Dr. Levesinsky calls it, "hydrophobia by suggestion," this name having been given to a similar outbreak of rabies in Madrid in 1902. The cases were of benign character. It was once believed, and indeed the belief is still very generally entertained by the nonmedical, that fear may per se engender hydrophobia, and instances have been placed on record in which pseudohydrophobia actually proved fatal. It is obvious that the supervention of grave symptoms in such cases must be due to complications; as, for instance, to meningitis or other acute cerebral disease. Morbid scare is epidemic in its incidence; and, in the presence of a hydrophobic scare, many persons of unstable nervous equilibrium forthwith develop symptoms which pass for hydrophobia, just as every rise of temperature and every malaise is ascribed to influenza when the prevalence of that disease concerns the minds of men. Now hydrophobia is usually considered an inevitably fatal disease, so that the fact of recovery belies the diagnosis. The mental excitement, writes Levesinsky, as well as the physical depression, which in certain subjects follows the bite of a dog, are eminently calculated to fan into activity any latent meingeal or cerebral weakness. At the same time, an error of diagnosis ought not to be possible in regard to the merely hysterical phenomena.

A Rare Case of Hellebore Poisoning

A good deal of scientific interest is attached to the death of an old peasant named Ibrahim Jussuf of Sarajevo, capital of Bosnia. An inquest was held February 22 by the city coroner and resulted in a verdict of accidental death through poisoning by hellebore. The victim suffered from pains in the stomach and went to his room to take some liquorice powder. Half an hour later he returned, saying that he had taken hellebore by mistake, for liquorice powder. He was taken by his wife to a chemist, whose shop he reached within half an hour. He was advised to go to the ambulance, and walked away looking as if nothing were the matter with him. Shortly afterward he was found in a helpless condition in the road and was taken to the country hospital, where, after violent pain and convulsions he died, in a quarter of an hour, before the stomach tube could be employed. Last December, Jussuf bought the hellebore at a chemist's, for the purpose of making an ointment to allay an irritation of the skin, proved after death to be scabies. The hellebore, liquorice powder and Carlsbad salt were kept on the top of the wardrobe. The deceased man's wife said that they used hellebore in summer in the garden, and for vermifuge.

The Resistance of Bacteria Against Cold

In an address given before the medical society of Bucharest, Dr. D. Lascu, public health officer, said that it had long been held that exposure to prolonged cold is fatal to most pathogenic bacteria, and in particular to the typhoid bacillus. While it was known that short exposure even to intense cold, such as that of liquid air, was insufficient to do more than inhibit their growth, yet many observations had gone to show that when bacteria were exposed for days or weeks to a temperature below freezing point, they died. In an exhaustive examination of the ice supply of Bucharest, this view was borne out, and the investigators came to the conclusion that ice more than three weeks old was sanitarily as safe as well filtered water. Some recent epidemics have, however, shown facts startlingly at variance with the accepted views, and of great importance to public health, particularly in southern countries, where the consumption of ice is much greater than in northern countries. In an epidemic which occurred some years ago at Yessy, the outbreak started with the consumption of ice from an icehouse in which it had been stored for eight months. The water supply and food were above suspicion, and the ice was made the chief object of investigation. Simple culture experiments were sufficient to establish the presence of both typhoid and colon bacilli, showing unquestionably the presence of sewage contamination. Further inquiry elicited the fact that at the time the ice was forming the previous winter there had been a few cases of typhoid in the vicinity. These seems no reason to doubt, then, that typhoid bacillus has the power of resisting low temperature for many months.

Psychoses Associated with Migraine

Dr. Manoilescu, in a paper on psychoses associated with migraine, says that simple hemicrania sometimes develops mental irritation or depression, anger, or slight hallucinations, with migraine of an epileptic type, and muscular twitching; or, ocular manifestations, such as a visual aura, can precede an attack of migraine. The true epileptic nature of the migraine is noted when the visual aura becomes red. Abortive attacks may occur in both, or one is substituted for the other. Psychical symptoms or a psychical equivalent may occur in either. A transitory psychosis sometimes follows or accompanies migraine. This is important from a therapeutic standpoint, indicating the necessity of an anti-epileptic treatment for migraine. In the same way, the writer notes close clinical relation between attacks of migraine and hysteria major. Several types of cases are on record; (1) a combination of hallucinations of sight, confusion, amnesia or ataxia, and aphasia, with attacks of migraine lasting six hours; (2) confusion, with religious delirium; (3) hemicrania, with temporary blindness, paresthesia and a speech disturbance; (4) hemicrania after mental shock, with anxious delirium, and disturbance of consciousness for three days. The occurrence of these psychoses is, however, rare.

BUDAPEST

(From Our Regular Correspondent)

April 12, 1922.

The Housing of Working Men

The project of providing suitable and hygienic dwellings for agricultural laborers in Hungary has been realized during the last two years through government grants, a certain sum having been included for that purpose in each year's budget. The action was originally begun in 1901. The annual expenditure, from 1901 to 1905, amounted to $15,000; but the demand for cottages increased to such an extent that, in 1906, the annual grant was increased to $25,000. As this amount also proved inadequate, an act was passed in the following year which authorized the conversion of the $85,000 of capital into interest, thus making it possible to build about 1,500 cottages every year. Another clause of the same act provided that, in case land was sold to laborers for building purposes by the local authorities, all the necessary plans, surveys and contracts were to be made by the minister of agriculture at the expense of the state. The interests of the laboring classes are safeguarded by the act in a variety of other ways. For instance, the land selected for building purposes must be entirely suitable as regards soil, air and drinking water; any attempt at speculation on the part of the builder or contractor is strictly forbidden; while the conditions of the sale or loan, the terms of the loan, and the general plan must be acceptable to the laborer. During the period allowed for his repayment of the loan, the property can neither be seized for debt, nor divided, encumbered, or alienated in any way. A complete exemption from taxation is granted for twenty years. With regard to the selection of sites, preference is given to applications coming from such parishes and local authorities as make a free grant either of land on which to build the house or of ground suitable for gardens. The necessary materials are forwarded at cost price on all the railways owned or worked by the government, but state assistance is only granted for buildings designed to accommodate one family. Each cottage occupies a plot of ground covering from 1,000 to 1,200 square yards (836 to 1,003 square meters); and the cost of building varies from 80,000 to 100,000 crowns ($160 to $200). Loans made to laborers who wish to build a house may be repaid by annual instalments of sums ranging from 5 to 6,000 crowns, extending over a period of from twenty to thirty years. Under the provisions of the Act of 1907, 10,943 workmen's cottages were built, in 1913, in different parts of Hungary; whereas, in 1920, only 147 and, in 1921, only 281 cottages were built. An important result of this act has been the abolishment of land speculation, and the keeping down of prices of building sites, owing to the fact that most townships in Hungary own the adjacent country, which, formerly used as common land to supply fuel and pasturage to the townsfolk, now offers a convenient site for the erection of workmen's dwellings. But the care of the state is not confined to the housing of agricultural laborers alone. A law was passed, July 20, 1908, which authorized the construction of houses in Budapest for employees of both state and private enterprises, the government undertaking the building of the houses, and $25,000,000 having been set aside for that purpose.

The actual building was commenced in 1909; and by May 1, 1911, 270 houses, containing in all 970 flats, had been finished; and 722, containing in all 970 flats, were planned for erection in the course of 1914. However, the war, which broke out in July, prevented the carrying out of this plan. It should be added that the government continues its housing policy even now; however, in consideration of the exorbitant prices prevailing, the work is being continued only on a very much smaller scale, although the need for tenements was never so urgent as now.

Tuberculosis in the Tisza Regions

The high rate of mortality from tuberculosis in some regions near the Tisza River, and particularly on the so-called lowland, ascribed by some authorities to a peculiar susceptibility on the part of those of pure Hungarian blood, who usually inhabit the plains, has been made the subject of close study by Dr. Okolicsaniji. Kuthy Dezso, it is interesting to note, is convinced that the terrible prevalence of phthisis among Hungarians or ancient Magyars, as they are usually called, is due to climatic rather than to hereditary causes. He points out that the lowlands of Hungary have a climate that possesses every feature liable to foster the spread of the disease, including extremes of heat and cold, and very dry summers, when the vast quantities of dust cannot fail to work havoc with the lungs of the inhabitants. Such a state of affairs, according to Dr. Okolicsaniji can be remedied only by educating the people with regard to their houses and clothing and by planting trees, a measure which would serve a double purpose of improving the climate and lessening the amount of dust.

PRAGUE

(From Our Regular Correspondent)

April 4, 1922.

Book on Public Health Service

The chief health officer of the city of Prague, Dr. Ladislav Procházka, former minister of health of Czechoslovakia, has just issued a book, "The Public Health Service of Greater Prague," which summarizes his suggestions for the reorganization of the health service of Greater Prague, recently accomplished through the combination of a number of communities adjoining the old city. The law for the nationalization of all health services in the republic, prepared by Doctor Procházka during his service in the ministry of health, recently placed before the parliament, exempts the city of Prague. Doctor Procházka suggests that the health services of Greater Prague also be nationalized; he believes that if the health officers are not paid locally they will be able to develop much more initiative and that they will be much more independent than if they were dependent for their salaries on local authorities. He wishes to have the health services concentrated in a central office, which already exists. He desires to have the city divided into wards and the wards combined into districts. Each ward would have a part-time health officer, who would at the same time be in charge of a preventive health center, which should be erected in every ward. The districts would be in charge of full-time health officers. The cost of the service would be met by the state; whereas investments for buildings, etc., would be paid out of local funds. He would like to have the health officers vested with more executive power. Under the law in the old Austria the executive power rested with lawyers and the health officers served in a more or less advisory capacity. He proposes to make the health officer the executive officer of a regular board of health, in accordance with the custom in Anglo-Saxon countries.

The second part of the book is a descriptive public health survey of Greater Prague, including all communities which now have become a part of the Prague territory. On the whole, the public health situation does not seem very satisfactory. This is especially so in the new communities, where often truly rural conditions exist. The book is the second publication of this kind on the public health situation in Prague to appear since the end of the war. The first was published by Philip S. Platt of the American Red Cross, who has made a health survey as a part of a complete social survey of the city of Prague, which has been carried out by workers of the Y. M. C. A. It is interesting to observe, in a book on the same topic published two years later by a leader of the public health movement in Czechoslovakia, how far the ideas which have been brought here by foreign workers have implanted themselves in the local soil or have been adapted to the prevailing local conditions.

Child Welfare Clinics

Dr. H. O. Eversole, who is directing the child welfare program of the American Red Cross for Czechoslovakia, has published a chart summarizing the work of the twenty-one child welfare clinics which he has established all over the republic. Three of the centers are operating in Prague, twenty-two in the province of Bohemia, five in Moravia, two in Slovakia and two in Ruthenia. The first of the clinics was opened in June of last year. The centers have been established by the American Red Cross, in cooperation with the ministries of health and social welfare and with the voluntary child welfare organizations. A local physician is in charge of every clinic. The figures published in the chart visualized the enormous amount of good which the Czechoslovak children have derived from these centers, 58,810 children having been examined in the clinics in the course of the eight months ending February, 1922. One of the most important parts of the work, if indeed it is not the most important, is the public health education which is being carried out in the centers among the attending children as well as among their families. There is no doubt that this important contribution to the health work of the republic will be taken over by local authorities when the American Red Cross ceases to run it.

BERLIN

(From Our Regular Correspondent)

April 8, 1922.

Danger of an Invasion by Typhus Fever

In the *Deutsche medizinische Wochenschrift* **48:**428 (March 31) 1922, Dr. Omankowski, chief of the emigration camp in Danzig, calls attention to the danger that threatens from an invasion of western Europe and the countries beyond by the typhus fever that is now raging in Russia and Poland. As the question is of importance in connection with emigration to America, I will describe the conditions as they exist. Omankowski rightly emphasizes the fact that the sanitation centers that were established on the eastern border before the war, which made the invasion of Germany by infectious diseases almost impossible, have now been abandoned, and that the defective hygienic conditions that prevail in Poland re by no means adequate to meet the needs as regards the rompt disinfection of fugitives from Russia and the Balkan tates, who are so generally infested with lice and are the arriers of typhus fever. The Netherlands, France and Bel- ium have established sanitation centers at embarkation orts, but at present there are no such centers in operation long the border between Poland and Germany. In Danzig lone, which unfortunately is likewise separated from Ger- any, an emigration camp has been established; this sani- ation center will lessen the danger somewhat, provided the tream of emigration from the East passes through this camp. hat the danger for us in Germany is not merely a matter f future speculation is shown by the fact that in Frankfort- n-the-Oder, which is only a short distance from the gates f Berlin, almost 200 typhus fever cases were found among e fugitives who emigrated from the Volga region to Ger- any and lands beyond. Concerning the danger that threat- ns from eastern Europe by reason of the typhus fever and lso the cholera, an official report contains the following ems: In soviet Russia and in Ukraine, there were approx- nately twenty million typhus fever cases during 1919 and 920. In 1921, in soviet Russia alone, 1,290,000 cases of phus and recurrent fever were officially reported. The umber of actual cases is, however, estimated at from six seven millions. Last summer an abatement in these dis- ases was noted, but with the coming of September there as an increased incidence in all parts of Russia, brought bout by the movement of large bodies of the population in onsequence of the famine. Especially in Petrograd and oscow, an epidemic of typhus fever appeared. Also the rmy of the Reds suffered greatly from typhus and recurrent vers. Most of the fugitives, among them, many returning olish wanderers, were deflected toward the western gov- nments of Russia (Vitebsk, Pskof, Smolensk, Minsk and omel) and the eastern regions of Poland (Novogrudok, insk, Kowal and Grodno). In January, at least 120,000 gitives had gathered in the Russian border towns (Minsk, hitomir, Koretz and Zhepetovka), with the intention of ossing the frontier. Of this number, only a small portion ere disinfected. However, from March to December, 1921, 1,287 returning fugitives passed through quarantine at aranovichi. Their condition of health was extremely bad. f 50,981 fugitives that were quarantined at Baranovichi in ctober, 804 were in need of hospital treatment and 497 aths occurred. In November, of 59,843 newly arrived fugi- ves, 1,227 were hospitalized and 1,406 deaths are recorded. the quarantine camp, in spite of all precautions, typhus ver developed among the nursing personnel. Of 400 nurses d employees, 114 were ill with typhus at once. In numerous stances the returning fugitives broke through the cordon quarantine stations, crossed the so-called "green border," d carried typhus and recurrent fevers into Poland. The gions about Novogrudok, Vilna, Brest-Litovsk and Vol- nia were severely affected. In Warsaw there is at present epidemic of typhus fever, and even in Bromberg a focus typhus is reported. Serious as the condition of affairs s been of late, it is feared that the greatest difficulties will encountered when the famine has reached its climax. As r cholera, this disease was brought by fugitives from soviet ussia to Ukraine in the autumn of 1921. At present, the sease is found in numerous towns and villages throughout kraine. During the last three months of 1921, cholera cases ere reported every day in Kharkof, and in Kief, between e middle of December, 1921, and Jan. 11, 1922, 239 cases veloped. It is feared that large numbers of the population Ukraine, as a consequence of the famine which has begun affect this country as well, will before long move west- rd, and that the danger of cholera spreading throughout rope will be thereby enhanced.

Marriages

JOHN MERRIL MONTFORT, Atlanta, Ga., to Miss Virginia Neville Taylor of Tacoma, Wash., at Chevy Chase, Md., recently.

JOHN LINN GOOD, New Cumberland, Pa., to Miss Margaret Rogers Attick of Steelton, Pa., April 15.

DELANO RICHARD AVES, Hearne, Texas, to Miss Laura Marion Mason of Milwaukee, April 24.

JOHN F. SOUTHWELL to Miss Beulah A. Stafford, both of Albany, N. Y., recently.

Deaths

Charles Norton Barney, M. C., U. S. Navy, retired ⊕ Denver; Medical School of Harvard University, Boston, 1895; served as a first lieutenant and surgeon, Spanish-American War, and later as a surgeon in the Navy; commissioned to the regular army in 1901 as assistant surgeon with the rank of first lieutenant; retired, December, 1920; died suddenly, April 6, aged 49.

Willis Gaylord Tucker, Albany, N. Y.; Albany Medical College, Albany, 1870; member of the Medical Society of the State of New York; formerly professor of chemistry and toxicology, and dean of the Albany Medical College and the Albany College of Pharmacy; chief chemist of the state health department; died, April 22, aged 72, from pneumonia.

Gardner Hirons ⊕ New York City; Medical College of Ohio, Cincinnati, 1882; member of the New York Academy of Medicine and the New York Obstetrical Society; visiting physician to the Woman's Hospital in the State of New York, New York City; died, April 20, aged 61, from chronic nephritis.

Robert Eaton Weeks ⊕ Los Angeles; Detroit College of Medicine, Detroit, 1904; also a pharmacist; served in Germany and France as lieutenant, M. C., U. S. Army, during the World War; city physician of the Los Angeles Health Department; died, April 9, aged 41, from cerebral hemorrhage.

Harry Luther Smith ⊕ Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1906; lieutenant-commander, M. C., U. S. Navy; member of the Medical Society of Virginia; died, April 14, aged 38, at the U. S. Naval Hospital, Chelsea, Mass., from appendicitis.

George Elright Thompson, Dodge City, Kan.; St. Louis University School of Medicine, St. Louis, 1921; served in the M. C., U. S. Army, during the World War; died recently, aged 30, at the Thompson and Pine Hospital, following an operation for appendicitis.

Charles U. Gravatt ⊕ Port Royal, Va.; College of Physicians and Surgeons, Baltimore, 1870; medical director, captain, M. C., U. S. Navy; served as state senator for eight years; formerly a surgeon in the Navy; died, April 14, aged 72.

George B. Malone, Memphis, Tenn.; Washington University School of Medicine, Baltimore, 1872; formerly president of the board of education; Confederate veteran; died, April 13, at St. Joseph's Hospital, aged 77, from cerebral hemorrhage.

Harry Grimmett Hunter, Hendersonville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1921; was serving his internship at the Presbyterian Hospital, Philadelphia, when he died, April 8, aged 25, from influenza.

Walter Dwight Merritt, Enumclaw, Wash.; Rush Medical College, Chicago, 1902; member of the Washington State Medical Association; was killed, April 20, when the automobile in which he was riding overturned, aged 44.

Thomas Gilmore Robert, Davenport, Iowa; Homeopathic Medical College of Missouri, St. Louis, 1877; formerly professor of pediatrics and clinical diseases of children, Hering Medical College, Chicago, died recently, aged 71.

Dallas K. Jones, Wooster, Ohio; Medical Department of the University of Wooster, Cleveland, 1885; member of the

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⊕ Indicates "Fellow" of the American Medical Association.

Ohio State Medical Association; health commissioner of Wayne County; died, April 5, aged 61.

Monroe M. Robbins, Hickory, Wis.; Bellevue Hospital Medical College, New York City, 1865; surgeon in the Civil War; at one time health officer, U. S. Pension Examining Board; died, March 31, aged 80.

Agnes M. Sparks, Brooklyn; Medical Department, University of California, San Francisco, 1879; member of the Medical Society of the State of New York; died, April 16, aged 69, at the Norwegian Hospital.

Frank Newhall Patterson ⊕ New York City; Medical Department of the University of the City of New York, 1886; member of the New York Academy of Medicine; died, April 16, aged 61, from myocarditis.

Eugene Otto Christoph ⊕ Chicago; University of Freiburg, Germany, 1887; formerly gynecologist to the Provident Hospital and Training School Association; died, April 19, aged 60, from chronic nephritis.

James Paul, Jersey City, N. J.; University of Glasgow, Scotland, 1869; formerly surgeon on steamships plying between Scotland and United States; died, February 23, aged 78, from pneumonia.

Edward Monroe Fly ⊕ National City, Calif.; Jefferson Medical College, Philadelphia, 1894; formerly local surgeon for the Santa Fe Railroad; died, April 14, aged 55, at the Elwyn Sanitarium.

Henry M. Ochiltree, Haddam, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1872; also a pharmacist; member of the Kansas Medical Society; died, February 24, aged 73, from influenza.

Walter Graham Murphy ⊕ Hartford, Conn.; Albany Medical College, Albany, N. Y., 1890; served with the rank of captain, M. C., U. S. Army, during the World War; died, April 17, aged 53.

Robert G. Black, Vancouver, Wash.; College of Physicians and Surgeons, Baltimore, 1886; formerly county and city health officer; at one time coroner of Clarke County; died, April 16, aged 58.

Harold Albert Fiske ⊕ Pasadena, Calif.; University of Vermont College of Medicine, Burlington, Vt., 1895; served as major during the World War; died, April 18, aged 48, from pleuropneumonia.

Charles H. McLane, Morgantown, W. Va.; Starling Medical College, Columbus, Ohio, 1866; Civil War veteran; formerly health officer of Morgantown; died, April 18, aged 78, from pneumonia.

William E. Adams, Madison, Ga.; Atlanta Medical College, Atlanta, Ga., 1891; honorary member of the Medical Association of Georgia; died, April 11, aged 54, from chronic nephritis.

Edward John Brearton, Boston; Tufts Medical College, Boston, 1905; member of the Massachusetts Medical Society; died, April 15, presumably from an overdose of an opiate, aged 43.

Howard Pascal Brisbane, Clarks, La.; Georgetown University School of Medicine, Washington, D. C., 1882; member of the Louisiana State Medical Society; died, March 27, aged 62.

Thomas Leonard James, Colorado Springs, Colo.; Medical Department University of Tennessee, Nashville, 1907; member of the Colorado State Medical Society; died, April 15, aged 38.

Fred Sinclair Fay ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, Syracuse, 1893; died, April 9, at the Onondaga County Hospital, as a result of an attack of hiccups.

John Lourie S. Hall, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1878; Civil War veteran; member of the state legislature; died, April 26, aged 79.

Asa Watson Armington Traver, Providence, R. I.; Dartmouth Medical College, Hanover, N. H., 1894; Civil War veteran; died, April 22, aged 52, following a long illness.

Gordon M. Christine ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1880; cut his throat, April 17, while temporarily insane, aged 64.

Millard F. Brackney, Mooresville, Ind.; Medical College of Indiana, Indianapolis, 1890; served as captain, M. C., U. S. Army, in the World War; died, April 14, aged 55.

Needham Lawton Kirkland, Savannah, Ga.; Atlanta Medical College, Atlanta, 1914; died, April 14, aged 62, from septicemia, resulting from an abscess on his leg.

Thomas William Brewer, Oklahoma City; Barnes Medical College, St. Louis, 1901; member of the Oklahoma State Medical Association; died, April 11, aged 58.

Mark Trafton Newton, Webster, Me.; Medical School of Maine, Portland, 1884; died, April 10, aged 66, at the Central Maine General Hospital, Lewiston.

Mary B. Martin, Seattle; Barnes Medical College, St. Louis, 1903; died, April 14, from cerebral hemorrhage, following a motor accident, aged 66.

Elihu P. Washburn, Buffalo, Ind.; Medical Department, Butler University, Indianapolis, 1881; Civil War veteran; died, April 1, from pneumonia.

Oliver Davis Eastman ⊕ Woodsville, N. H.; Dartmouth Medical School, Hanover, N. H., 1883; died, March 27, aged 63, following a long illness.

Thomas Benton Ashby ⊕ Mount Airy, N. C.; College of Physicians and Surgeons, Baltimore, 1885; died, April 10, aged 50, from heart disease.

John W. McNabb, Fremont, Mich.; Kentucky School of Medicine of Louisville, 1894; member of the state legislature; died, April 14, aged 75.

Richard H. Alexander, Lansing, Mich.; Saginaw Valley Medical College, Saginaw, Mich., 1903; died, April 15, aged 54, from heart disease.

Henri Marchand, Champlain, Que.; Medical Department of Laval University, Quebec, 1887; died, February 4, aged 59, from heart disease.

Olivier Adolph Bruneau, Manchester, N. H.; Maryland Medical College, Baltimore, 1912; died, February 13, aged 34, from pneumonia.

Percy Harrison Garland, Glen Garden, N. J.; University of Vermont College of Medicine, Burlington, Vt., 1915; died recently; aged 32.

John B. Grant, Sparta, Ky.; Louisville Medical College, Louisville, 1878; died, April 12, aged 76, at Dayton, Ohio, from senility.

Jeptha W. Schureman ⊕ Detroit; Detroit College of Medicine, Detroit, 1907; died, April 7, aged 42, from pleuropneumonia.

James H. More, Polo, Ill.; University of Buffalo Department of Medicine, Buffalo, 1853; died, April 20, aged 92, from senility.

Silas Alfred Cavalier, Beverly, W. Va.; Baltimore University School of Medicine, Baltimore, 1894; died, April 10, aged 66.

Adolph Belmont Smith ⊕ Rockford, Ill.; Rush Medical College, Chicago, 1906; was accidentally drowned recently, aged 42.

Leonard Devore, South Sioux City, Neb.; Iowa Medical College, Des Moines, 1886; died, April 9, aged 77, from neuritis.

William H. Fitch, Rockford, Ill.; Chicago Medical College, Chicago, 1868; died recently, aged 78, from cerebral hemorrhage.

Herbert Reynolds, Philadelphia; Homeopathic Medical College of Pennsylvania, Philadelphia, 1865; died, April 18, aged 80.

William P. Gaffney, La Grange, Ga.; University of Georgia Medical Department, Augusta, Ga., 1881; died, April 9, aged 64.

William Getus Smith ⊕ Ravenna, Ohio; Miami Medical College, Cincinnati, 1877; died, April 7, aged 67, from diabetes.

Joseph B. Hawkins, Mexico, Mo. (licensed, Missouri, 1883); also a minister; died, April 1, at St. Louis, aged 83.

Marion Crane, Lake Odessa, Mich. (licensed, Michigan, 1900); died, April 16, aged 78, from cerebral hemorrhage.

Thomas A. Shane, Columbus, Ind.; Pulte Medical College, Cincinnati, 1881; died, April 15, aged 82, from influenza.

Amos Wesley Fisher, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1881; died recently, aged 84.

Walter S. Payne, Wayne, Neb.; John A. Creighton Medical College, Omaha, 1903; died, March 7, aged 43.

J. P. McCollum, Jackson, Tenn. (licensed, Tennessee, 1889); died suddenly, April 15, from heart disease.

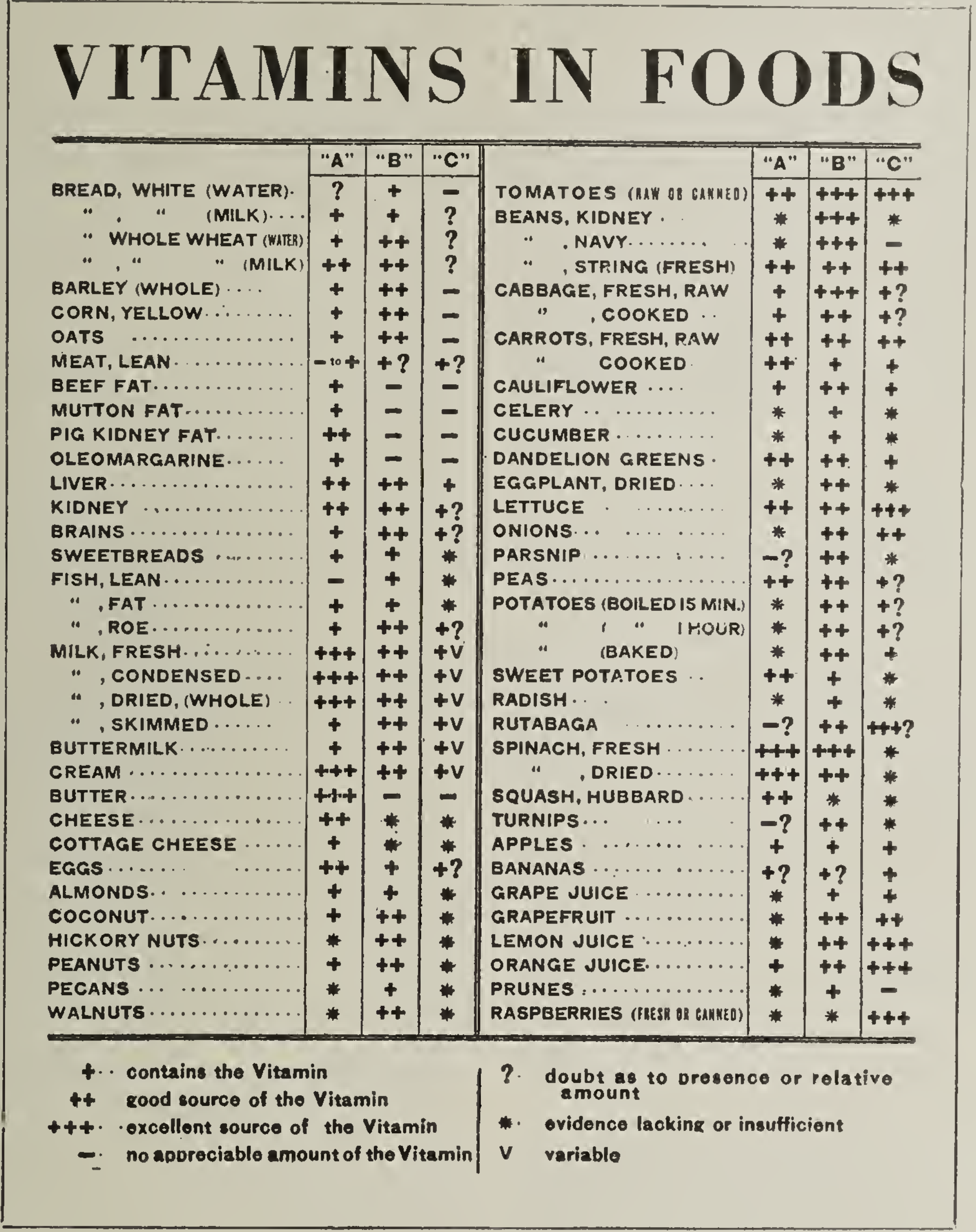
The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Vegetable Regulator and Iron Elixir.—Charles S. Miller, Vincennes, Ind., shipped in August, 1918, and January, 1919, quantities of "Iron Elixir" and "Improved Vegetable Regulator" which were misbranded. Analysis showed that "Iron Elixir" was a dilute, slightly acid, watery solution of sodium citrate and iron chlorid, with a slight trace of alcohol. It was falsely and fraudulently claimed that Iron Elixir was effective as a treatment, remedy and cure of pimples and boils, as a blood purifier and to remove from the blood "those humors and principles which disturb its purity." Vegetable Regulator was reported by the Bureau of Chemistry to be an alkaline watery solution containing aloes and baking soda, slightly flavored with oil of peppermint and with a small amount of alcohol present. It was falsely and misleadingly represented (1) as composed of vegetable substances and (2) to be guaranteed by the United States not to be adulterated or misbranded. As a matter of fact, it was not composed exclusively of vegetable substances nor guaranteed by the United States in any manner or for any purpose whatever. Furthermore, it was falsely and fraudulently claimed to be an effective treatment, remedy and cure for diseases of the liver, sick and nervous headache, sleeplessness, all diseases pertaining to the stomach and bowels, etc. In March, 1921, Charles S. Miller pleaded guilty and was fined $200 and costs.—[*Notice of Judgment No. 9764; issued Jan. 11, 1922.*]



VITAMINS IN FOODS

	"A"	"B"	"C"		"A"	"B"	"C"
BREAD, WHITE (WATER)	?	+	—	TOMATOES (RAW OR CANNED)	++	+++	+++
" , " (MILK)	+	+	?	BEANS, KIDNEY	*	+++	*
" WHOLE WHEAT (WATER)	+	++	?	" , NAVY	*	+++	—
" , " " (MILK)	++	++	?	" , STRING (FRESH)	++	++	++
BARLEY (WHOLE)	+	++	—	CABBAGE, FRESH, RAW	+	+++	+?
CORN, YELLOW	+	++	—	" , COOKED	+	++	+?
OATS	+	++	—	CARROTS, FRESH, RAW	++	++	++
MEAT, LEAN	— to +	+?	+?	" COOKED	++	+	+
BEEF FAT	+	—	—	CAULIFLOWER	+	++	+
MUTTON FAT	+	—	—	CELERY	*	+	*
PIG KIDNEY FAT	++	—	—	CUCUMBER	*	+	*
OLEOMARGARINE	+	—	—	DANDELION GREENS	++	++	+
LIVER	++	++	+	EGGPLANT, DRIED	*	++	*
KIDNEY	++	++	+?	LETTUCE	++	++	+++
BRAINS	+	++	+?	ONIONS	*	++	++
SWEETBREADS	+	+	*	PARSNIP	—?	++	*
FISH, LEAN	—	+	*	PEAS	++	++	+?
" , FAT	+	+	*	POTATOES (BOILED 15 MIN.)	*	++	+?
" , ROE	+	++	+?	" (" 1 HOUR)	*	++	+?
MILK, FRESH	+++	++	+V	" (BAKED)	*	++	+
" , CONDENSED	+++	++	+V	SWEET POTATOES	++	+	*
" , DRIED, (WHOLE)	+++	++	+V	RADISH	*	+	*
" , SKIMMED	+	++	+V	RUTABAGA	—?	++	+++?
BUTTERMILK	+	++	+V	SPINACH, FRESH	+++	+++	*
CREAM	+++	++	+V	" , DRIED	+++	++	*
BUTTER	+++	—	—	SQUASH, HUBBARD	++	*	*
CHEESE	++	*	*	TURNIPS	—?	++	*
COTTAGE CHEESE	+	*	*	APPLES	+	+	+
EGGS	++	+	+?	BANANAS	+?	+?	+
ALMONDS	+	+	*	GRAPE JUICE	*	+	+
COCONUT	+	++	*	GRAPEFRUIT	*	++	++
HICKORY NUTS	*	++	*	LEMON JUICE	*	++	+++
PEANUTS	+	++	*	ORANGE JUICE	+	++	+++
PECANS	*	+	*	PRUNES	*	+	—
WALNUTS	*	++	*	RASPBERRIES (FRESH OR CANNED)	*	*	+++

+	contains the Vitamin	?	doubt as to presence or relative amount
++	good source of the Vitamin	*	evidence lacking or insufficient
+++	excellent source of the Vitamin	V	variable
—	no appreciable amount of the Vitamin		

Because of the extent to which the present craze for vitamin concentrates is being exploited by shrewd "patent medicine" concerns, the Propaganda Department has added to the thirty-eight Educational Posters already issued two on vitamins. One of these (No. 39) is reproduced in miniature above; the other (No. 40) gives tersely a bare outline of our present knowledge of the accessory food factors. The original posters are 22 by 28 inches in size, and are printed on a good grade of nonglossy paper. They sell at 40 cents each, or $10 for the entire set of forty.

Diuretine and Bloodzone.—The East India Medicine Co., St. Louis, Mo., shipped in June and July, 1920, a quantity of "Diuretine" and "Bloodzone."

When analyzed by the federal chemists Diuretine was reported to consist of potassium acetate, buchu extract, a laxative plant drug, oil of juniper berries, sugar, alcohol and water. The preparation was falsely and fradulently represented as a cure for acute Bright's disease, uremia, uremic convulsions, renal colic, inflammation of the bladder, rheumatism, heart disease, etc.

"Bloodzone," according to the federal chemists, consisted of extractives of plant drugs, including a laxative drug, sugar, alcohol and water. Bloodzone was falsely and fraudulently represented as a cure for syphilis, cancer, rheumatism, catarrh, boils, psoriasis, pimples and many other conditions.

In March, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9699; issued Jan. 7, 1922.*]

Grantillas.—The Eneglotaria Medicine Co., New York City, shipped a quantity of "Grantillas" from New York to Porto Rico. The government declared the preparation misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed it to contain emodin-bearing (laxative) plant extractives and cramp bark. Among the claims made on the trade package were:

> "Grantillas contain precisely the elements required by the genital organs of women . . . the best existing uterine tonic."
>
> "Grantillas are a special medicine for diseases of ladies and young ladies . . . for peculiar diseases of the female sex . . . menstrual irregularities."
>
> "In anemia and chlorosis Grantillas act as a first class general tonic. . ."
>
> "Hysteria . . . is cured, no matter what its cause may be, with the use of Grantillas."

These and similar claims were declared false and fraudulent. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the "Dr. Richards Dyspepsia Tablet Association," New York City, claimant, on payment of the costs and the execution of a bond in the sum of $200.—[*Notice of Judgment No. 9758; issued Jan. 11, 1922.*]

Winslow's Sarsaparilla Compound. — The Howard Drug and Medicine Co., Baltimore, Md., shipped a quantity of this preparation from Maryland to South Carolina in the spring of 1920.

Analysis of a sample showed the stuff to consist essentially of extract of plant material, including sarsaparilla, potassium iodid, glycerin, alcohol and water. The trade package contained such claims as:

> "A Reliable Remedy For Scrofula, Chronic Ulcers, Cancerous Ulcers, Necrosis, Diseases of the Bones, Syphilitic Affection, Rheumatism, Female Weakness, Dyspepsia, Pimples and all Skin Diseases and the many Diseases arising from an Impure State of the Blood."

These and similar claims were declared false and fraudulent and, in November, 1920, the Howard Drug and Medicine Co., having admitted the allegations, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the claimant on payment of the costs of the proceedings and the execution of a good and sufficient bond.—[*Notice of Judgment No. 9774; issued Jan. 11, 1922.*]

Correspondence

DR. GEORGE B. LORING—PIONEER IN SCIENTIFIC AGRICULTURE

To the Editor:—The editorial on "Our New Postmaster-General" (THE JOURNAL, March 11) is a worthy tribute to Dr. Hubert Work. It is noted that he is the first physician to be honored with a seat in the cabinet since Dr. James McHenry served as Secretary of War in the cabinets of Washington and Adams. This is, no doubt, true, and the medical profession may well be proud of such an able and versatile member as Dr. Work. It may not be generally known, however, that Dr. Work carries off this honor by a very narrow margin. Dr. George B. Loring of Massachusetts was appointed Commissioner of Agriculture by President Garfield in 1881. It was not for him, however, to enjoy the distinction of a seat in the cabinet, as the Department of Agriculture did not become one of the executive departments of the government until Feb. 11, 1889, at which time Commissioner Norman J. Colman, Dr. Loring's successor, was appointed by the President the first Secretary of Agriculture.

Dr. Loring was educated as a physician, but was postmaster at Salem, Mass., for four years, ending in 1857, and from that time devoted his attention to scientific farming and politics. He was president of the New England Agricultural Society for twenty-seven years prior to his death in 1891. Under Dr. Loring's administration of the federal bureau of agriculture, many projects were begun. He gave especial attention to the diseases of domestic animals. The study of inoculation which resulted in the discovery and use of mallein and other forms of vaccine made and distributed by the department was suggested in his report for 1883, and it was during his administration that the control of quarantine against diseased animals from foreign countries was transferred to the commissioner from the Treasury Department. Dr. Loring occupied no unimportant part in the early history of the United States Department of Agriculture.

GEORGE W. POPE, Washington, D. C.

DEFINITION OF THE PHYSICIAN IN INDUSTRY

To the Editor: —At a recent meeting, the Conference Board of Physicians in Industry adopted the following definition of the physician in industry:

> "The physician in industry is one who applies the principles of modern medicine and surgery to the industrial worker, sick or well, supplementing the remedial agencies of medicine by the sound application of hygiene, sanitation and accident prevention; and who, in addition, has an adequate and cooperative appreciation of the social, economic and administrative problems and responsibilities of industry in its relation to society."

The discussion leading up to the formulation of this definition extended over several months. The question was viewed from all angles, and many suggestions were considered for including in the definition an outline of what his duties and functions were.

It was felt, however, that in order to avoid a complicated statement it would be better to include in a definition only the broad fundamental principles on which the work of the physician in industry is based, leaving to subsequent elaboration the finer details. It was pointed out that the definition adopted should emphasize both the medical attainments and the industrial requirements of the physician engaged in this work in order to make his duties clear both to the medical profession and to industrial management.

It is assumed that the physician engaged in industrial work is well grounded in the fundamentals of medicine and surgery. He is, first of all, a physician. It is obvious, however, that this alone, while equipping him for satisfactory service in private practice, does not meet fully the requirements of industrial work. In his industrial experience he has, of necessity, to deal with questions of sanitation, hygiene and accident prevention as applied to large numbers of people working in comparatively close association. Only by special knowledge of the work in hand will the physician be able satisfactorily to discharge his duties. His knowledge of plant processes, together with the physical examination of applicants for employment and of workers already engaged, will enable him by judicious placement to reduce materially the accident and morbidity hazard and rate.

It must be realized that many of the qualifications for successful medical work in industry are of a nonmedical nature, and call for a knowledge of the laws of social and industrial economics and of the administrative problems which arise in the conduct of an industrial medical department. The physician in industry must have a clear conception of the responsibilities of the industry to its workers and through them collectively to the community. On the other hand, he should recognize clearly the duties of workers to the industry in which they are engaged. It is an intelligent appreciation and consideration of these problems that make for the success of the work of the physician in industry.

It is hoped that this definition will tend to remove misconceptions as to the work of the physician in industry, and establish his position and his work on a basis satisfactory alike to the physician and to the industrial organization.

F. L. RECTOR, M.D., Secretary, New York.

"IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?"

To the Editor:—The recent article by Dr. Cumming (THE JOURNAL, March 4) raises the question whether diphtheria will be controlled and eradicated by the elimination of carriers, by active immunization with toxin-antitoxin, or by generalities similar to those given in the article. There are certainly no facts to suggest that immunization with toxin-antitoxin will result in a great increase in the number of carriers. On the contrary, the problem of the diphtheria carrier will be solved as soon as we have a diphtheria-immune population, in which no fresh cases can serve as foci for the spread of the bacteria and the development of large numbers of carriers. The only practical way to accomplish this will be by simplifying the process of immunization, omitting the Schick test for the determination of susceptibility in children from 6 months to 6 years of age, and injecting all young children wth toxin-antitoxin.

Dr. Cumming seems to think that successful active immunization with toxin-antitoxin would remove the danger signals of diphtheria in that the absence of clinical cases in such protected communities would give the health officer a false sense of security. He says that these communities would then become a source of danger to neighboring nonprotected communities. This statement is evidently erroneous. It is known from long experience that when the number of clinical cases of a certain disease is diminished by immunization or other sanitary measures, the number of carriers is also gradually lessened to a minimum, and the virulence of the infecting organism tends to become attenuated. Active immunization with toxin-antitoxin would thus not only accomplish a reduction in the morbidity and mortality from diphtheria, but also be of great value in the control of the distribution of the disease.

Dr. Cumming objects that each generation would have to be immunized against diphtheria; but this is also necessary in smallpox vaccination. It would be necessary in every form of effective immunization against diseases, which can be kept down and eliminated only by the protective vaccination of the susceptible individuals of each generation.

Teaching of this character is misleading in that it places in the minds of the noncritical erroneous ideas of the measures for the control and eradication of a disease which still claims its victims by the tens of thousands.

ABRAHAM ZINGHER, M.D., New York.
Bureau of Laboratories, Department of
Health, City of New York.

THE PROPHYLAXIS OF SYPHILIS

To the Editor:—The question sometimes arises as to the proper procedure in the case of exposure to known syphilis. Even when the evidence is presumptive, as in the handling of treated syphilitic patients, in rape, and when ordinary prophylaxis is neglected or delayed, the precaution of taking an intravenous injection of neo-arsphenamin, from 0.2 to 0.4 gm., should be encouraged. I have used this with success twice when the contaminated needle was accidentally jabbed into the operator's forearm, once with the injection intramuscularly of a small amount of syphilitic blood, once when an assistant's eye and cheek were splashed with blood, and several times when the hands were exposed in the collection of serum from a chancre and during operations on patients who had syphilis. The impossibility of sterilizing a puncture wound with mercurial ointment was recently demonstrated by a surgical friend. The routine use of strong mercuric chlorid solutions, so much in vogue in dental offices, dispensaries and operating rooms generally, should be condemned, as the resultant dermatitis allows, rather than prevents, syphilitic infection. Ordinarily, dependence can be placed on the use of green soap and an alcohol rinse.

IRWIN C. SUTTON, M.D., Los Angeles.

"TREATMENT OF PYLOROSPASM IN INFANTS"

To the Editor:—It is encouraging to hear that Dr. Grulee (THE JOURNAL, April 22, p. 1183) is obtaining such excellent results with atropin, which has become the general method of treatment of pylorospasm by the pediatricians of New York since first I called attention to its value in May, 1918, and in October, 1919. Lavage is not required in any of the cases if atropin is used in sufficient doses, and shortcomings in hygiene and diet are corrected. The atropin need be used hypodermically only in the severest cases; otherwise, the drug administered in the feeding is sufficient.

That pyloric stenosis is uncommon is beyond dispute; that it is a condition separate from pylorospasm is a debatable question; and, if one may predict on the basis of personal experience, the immediate future will show the error of this point of view. These cases also respond to atropin treatment, making it seem that they are merely a high degree of pylorospasm. The strictures placed upon thick gruel feeding, however well founded, can hardly nullify the satisfactory clinical experience with this method of treatment.

SIDNEY V. HAAS, M.D., New York.

Blindness in the United States.—It has been estimated by the Bureau of the Census that there were 52,617 blind persons in the United States in 1920, one to every 2,000 people. The New England States had the greatest number of blind persons, and the lowest amount of blindness was found in the Southwest Central States. It was further stated that 15,000 of the foregoing number are blind through industrial accident.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

WEIGHT OF NEW-BORN BABIES—EFFECT OF WATER AND OF SUGAR

To the Editor:—1. What percentage of babies born in institutions have their original birth weight at the end of one week? 2. Do babies in institutions gain as well as those in private homes? 3. Do authorities differ as to whether or not the amount of water given to babies during the first week has any effect as to weight, the increased water intake affecting the amount of nursing and thus causing a loss in weight? 4. Should dextrimaltose or any other sugar be given in water the first few days while awaiting the filling of the breasts? Please omit my name and address.

G. E., Wisconsin.

ANSWER.—1. Most babies born in institutions have regained their original birth weight by the tenth day.

2. If by institutions are meant hospitals where sick babies are cared for, they do not gain as well as infants in private homes. In well regulated orphan asylums, infants do almost as well as in private homes.

3. An infant should receive one tenth of its weight in total fluid intake after forty-eight hours. The necessary water should be given after or between nursings. By the tenth day they require one sixth of their body weight in fluids in twenty-four hours.

4. While awaiting the filling of the breasts, from 3 to 5 per cent. of sucrose or lactose may be added to the indicated amount of water.

PREVENTION OF DEAFNESS IN BOILER WORKERS

To the Editor:—Please give me, if possible, a list of articles and where they may be found, concerning "the methods of preventing deafness in men employed in boiler works or nail mills."

F. F. SLYFIELD, M.D., Duluth, Minn.

ANSWER.—

Kober and Hanson: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., 1916, pp. 339-350.
Harris, L. I.: Clinical Types of Occupational Diseases: Study of Methods for Their Prevention, THE JOURNAL, Sept. 20, 1919, p. 880.
Guild, S. R.: Prevention of War Deafness: Critical Review, *J. Lab. & Clin. Med.* **2**: 12 (Sept.) 1917; War Deafness and Its Prevention, ibid. **3**: 226 (Jan.) 1918; War Deafness and Its Prevention, ibid. **3**: 358 (March) 1918.
McBride and Turner: War Deafness and Vestibular Tracts, *Lancet* **2**: 73 (July) 1918.
Baratoux, J.: War Deafness, *Progrès méd.* **32**: 139 (April 28) 1917.
Hays, M. M.: Needed Measures for the Prevention of Deafness During Early Life, THE JOURNAL, July 23, 1921, p. 263.

MERCURIC IODID FOR INTRAMUSCULAR INJECTION

To the Editor:—I am anxious to have some mercuric iodid, dissolved in oil, prepared for intramuscular medication. Can you give me a formula whereby I can secure a clear, oily solution of the iodid, combined with a small amount of quinin and urea hydrochlorid, to relieve the irritation produced by the medicine? Any information you may give me will be very much appreciated. Omit my name, please.

D. C. B., Iowa.

ANSWER.—Quinin and urea hydrochlorid is insoluble in oils, so that it would be impracticable to prepare an anesthetic solution of the kind desired. New and Nonofficial Remedies describes an oily solution of mercuric iodid which has been made anesthetic by the addition of benzocain. A similar preparation could be put up by the pharmacist as given herewith:

	Gm. or C.c.	
Hydrargyri iodidi rubri....................	0|01	gr. 1/5
Benzocainae	0|01	gr. 1/5
Olei olivae, q. s.......................ad	1|0	♏ xv

PHENOL IN ANTITOXIN

To the Editor:—Please inform me how much phenol there is, by weight, in a 10,000 unit dose of diphtheria antitoxin.

S. S. WARREN, M.D., Mescalero, N. M.

ANSWER.—For some time the amount of phenol (carbolic acid) in biologic products was fixed by the regulations of the Treasury Department as not more than 0.2 per cent., but according to recent information, the amount now is 0.3 per cent.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Georgia: Augusta. May 31-June 2; Atlanta. June 7-9. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City. June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Kansas: Kansas City, June 20. Sec.. Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, May 22. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

Louisiana: New Orleans, June 8-10. Sec., Dr. Roy B. Harrison, Hibernia Bank Bldg., New Orleans.

Massachusetts: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 6-8. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in. respectively, by May 15 and June 1.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-19 Dallas County Bank Bldg., Dallas.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

REPORT OF THE TWELFTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The twelfth examination of the National Board of Medical Examiners was the beginning of examinations held under the new plan. Examinations were held in eighteen Class A medical schools, February 15, 16 and 17, in Part I, which comprises written examinations in each of the six fundamental medical sciences. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; materia medica and pharmacology, 75; pathology, 75; physiologic chemistry, 50, and bacteriology, 50, making a total of 425 counts for this part.

Part I

A candidate taking Part I must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the ratings of the answered papers. Falling below 65 per cent. in two subjects or below 50 in one subject constitutes a failure. Eighty-seven candidates appeared for examination in Part I; of these, eighty passed and seven failed.

PASSED, PART I

Names and College	Year of Graduation
Denver M. Vickers, Harvard Medical School	1921
Alfred Maurice Wakeman, Yale University Medical School	1922
Joseph M. Hayman, Jr., University of Pennsylvania	1921
Pierre Jaque Walker, Johns Hopkins Medical School	1923
Lewis M. Hurxthal, Harvard Medical School	1923
Curtis H. Lohr, Washington Univ. School of Medicine	1922
Norman Joseph Kilborne, Rush Medical School	1924
Alfred DeBard Biggs, Rush Medical School	1921
Leon L. Gardner, University of Pennsylvania	1920
Mary Bailey Sloan, Woman's Medical College	1922
Meredith Everet Waitman, Johns Hopkins Medical School	1923
Wayne J. Stater, Harvard Medical School	1921
Walter C. Earle, Rush Medical School	1920
Aloysius P. Rieman, New York Univ. & Bellevue Hosp. Coll	1922
Paul R. Rockwood, State Univ. of Iowa Med. College	1919
John L. Goforth, Johns Hopkins Medical College	1923
Tyree C. Wyatt, Syracuse Univ. School of Medicine	1922
William E. Sisson, Johns Hopkins Medical College	1922
Dorothy M. Moore, Johns Hopkins Medical College	1922
William E. Dodd, University of Pennsylvania	1920

AVERAGES OBTAINED IN PART I*

Candidate's Number	Anatomy, Value 100	Chemistry, Value 50	Materia Medica and Pharmacology, Value 75	Pathology, Value 75	Physiology, Value 75	Bacteriology, Value 50	Final Averages
4	82.3	92	82	86	90	80	361.8
6	79.5	95	87.5	80	89	88	363
8	72.4	90	77	90	91	84	352.9
13	76.3	85	82.5	76	84	76	338.7
14	85.9	90	79	82	83	76	352
15	73.5	90	77	82	91	82	347
16	87.5	90	80	84	93	84	367.3
17	78	90	75	76	84	82	340.3
20	71.5	95	86	92	84	86	358.5
22	70.4	90	75	64	84	76	320.7
25	91.2	92	78	88	89	82	369.5
27	75.6	85	73	60	91	78	325.2
28	87.4	96	83	90	85	78	368
34	73.4	92	78	78	80	80	336.4
35	69.6	80	82	80	85	76	332.9
37	81.5	90	57	84	83	84	336.6
38	91.9	96	82.5	92	96	76	380.8
42	54.4	78	72.5	84	90	76	316.3
43	80.5	90	77	92	88	76	356.2
44	68.2	90	80	78	93	70	336.5
45	77.2	80	78	78	91	70	337.5
46	73	88	81	80	88	76	341.8
50	68.2	90	82	60	80	80	319.7
51	61.4	90	76	80	88	70	324.4
52	81.8	95	84	84	86	70	352.3
54	77.7	84	75	60	84	72	320
56	80.5	80	70	70	85	76	327.3
57	57.8	90	73	88	90	88	335.1
61	80.1	90	80	68	83	76	336.4
62	66.5	90	76	80	84	76	329.5
66	83.5	92	81	80	89	88	361.1
70	86.7	80	77.5	76	91	88	374.2
71	81.4	90	86	88	88	82	363.9
73	81.2	87	..	84	86	80	256.6
74	74.1	95	82	78	92	76	348.6
77	76.4	92	84	88	86	76	353.9
79	74.8	84	75	78	84	70	329.6
80	83.1	92	79	90	85	76	357.7
82	79.6	88	74	76	86	72	336.6
83	82.8	84	77	92	94	82	365.3
84	69.6	80	76	60	85	76	317.4
85	81.3	92	76	92	89	82	361.1
86	87	88	74	80	93	70	351.3
87	80	90	80	88	92	82	361
88	70.7	88	67.5	72	91	72	324.7
92	67.7	85	79	60	80	72	310.5
96	83.9	95	81	76	90	76	354.7
97	67.5	88	77	72	90	70	325.8
98	82.5	92	82	84	91	82	362.3
99	87.9	95	85	86	95	84	379.5
100	67.8	78	83	74	86	70	321.1
101	61.8	80	76	68	78	72	304.3
102	85.2	90	82.5	92	94	76	369.6
104	77.6	90	82.5	72	90	76	344
105	85.6	90	85	96	98	84	381.8
108	80.5	92	74	84	82	78	345.5
109	72.6	85	73	60	75	60	301.2
110	83.7	90	79	68	81	76	337.8
111	75.8	82	58	56	93	76	310.0
113	90.2	86	80	80	92	86	365.2
114	81.9	85	80	76	79	74	342.7
118	71.5	88	75	80	81	78	353.6
120	75.1	95	75	84	87	80	347.2
121	71.4	90	79	72	76	70	321.7
123	75.9	82	80	88	83	92	351.2
125	89.8	84	83	80	88	86	363.1
130	63	85	77	68	80	70	308
131	82	90	..	76	92	84	295
132	78	80	82.5	76	88	72	358.9
134	82.1	90	79	88	87	88	361.7
135	71.5	90	79	92	82	78	344.8
136	76	90	76	80	80	70	333
138	76.3	80	75	84	86	82	345.1
140	75	90	80	86	92	88	357.5
141	80.8	90	82	68	90	78	344.8
142	87.3	84	76	68	94	86	350.8
143	59.3	95	..	80	90	78	273.3
145	68.1	88	72	76	91	78	330.4
146	87.4	92	78	88	88	92	369.9
149	81.3	90	82	76	88	84	352.8
150	74.4	88	81	86	90	76	369.2
152	87.5	92	82	80	90	92	368.5
154	66.7	88	72	84	90	76	333.2
155	78.6	82	78	60	87	76	326.4
159	81.5	80	75	84	91	88	353.1
160	70.3	82	77.5	76	80	78	325.4
162	85.4	80	80	88	90	76	356.9

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* The general average of the candidates is based on subject values as rated by the board. The averages in each subject are on a basis of 100; 1,000 is the total perfect mark as rated by the board for the entire examination; 425 is the maximum mark on this basis for Part I.

Matilde L. Maerz, Woman's Medical College	1922
Ruth P. Stone, Univ. of Michigan School of Med	1923
Lee Fosbay, University of Pennsylvania	1920
William J. Scott, Johns Hopkins Medical College	1923
James McG. Sullivan, St. Louis Univ. Medical School	1923
Sadie MacFarland, Woman's Medical College	1921
David T. Ford, Univ. of Nebraska College of Med	1921
Miriam Bell, Woman's Medical College	1922
Harbert P. Miller, State Univ. of Iowa School of Med	1921
Allen M. Kilgore, Rush Medical School	1918
Nelsen K. Forster, Univ. of Illinois College of Med	1919
Dan C. Darrow, Johns Hopkins Medical College	1920
Paul M. Hamilton, Johns Hopkins Medical College	1922
Howard W. Schaffer, University of Pennsylvania	1921
Robert G. Craig, Johns Hopkins Medical College	1922
Edward L. Bortz, Harvard Medical School	1923
Merlin T. R. Maynard, Washington Univ. School of Medicine	1922
Abram E. Bennett, Univ. of Nebraska School of Medicine	1921
Max S. Schaul, University of Pennsylvania	1920
Doris Orlenda Tuttle, Woman's Medical College	1922
Richard W. Pullen, Yale University School of Medicine	1921
Esther M. Greishcimer, Tufts Coll. Medical School	1922
Walter H. Spoenemann, Rush Medical School	1920
J. Herbert Tinsman, University of Pennsylvania	1921
Mary H. Jennings, Woman's Medical College	1921
Joseph T. Eagan, Yale Univ. School of Medicine	1921
Harry M. Hayter, Johns Hopkins Medical College	1923
Charles Szkilas, Harvard Medical School	1921
Joseph R. Blalock, Johns Hopkins Medical School	1922
Mildred Rogers, Woman's Medical College	1921
Walter H. Fink, Univ. of Minnesota School of Med	1921
Charles E. Buell, Jr., Johns Hopkins Medical College	1922
Merritt P. Starr, Rush Medical School	1921
James C. Potter, Johns Hopkins Medical School	1921
Ruth L. Carpenter, Woman's Medical College	1922
Francis E. Shields, Woman's Medical College	1922
Ruth N. Miller, Woman's Medical College	1922
Woodruff Smith, Johns Hopkins Medical College	1918
Myrta M. Wilson, Rush Medical School	1922
Vincent G. Hawkey, University of Pennsylvania	1921
Thomas C. Smith, Johns Hopkins Medical College	1922
Marian C. Putnam, Johns Hopkins Medical College	1921
Lee De Cady, Washington Univ. School of Medicine	1923
Zacharias Bercovitz, Rush Medical College	1922
Lillian E. Shaw, Woman's Medical College	1922
Oscar H. Stover, University of Buffalo Medical Dept	1922
Frank G. Moore, Johns Hopkins Medical College	1922
M. G. A. Neupauer, Jefferson Medical College	1921
Horace E. Campbell, Univ. of Nebraska School of Medicine	1922
William W. Haggart, Harvard Medical School	1922
Mary A. Hipple, Woman's Medical College	1922
Florence E. Ahlfeldt, Woman's Medical College	1920
Emily L. Van Loon, Woman's Medical College	1922
Emily Gardner, Woman's Medical College	1922
Elizabeth L. Ewing, Woman's Medical College	1922
Justus B. Rice, Washington Univ. School of Medicine	1922
Anna R. Winter, Woman's Medical College	1923
Sam A. Overstreet, Univ. of Louisville Medical Dept	1923
Clara R. King, Woman's Medical College	1923
Isla Gertrude DePree, Univ. of Michigan School of Medicine	1922

FAILED

Johns Hopkins Medical College	1922
Univ. and Bellevue Hospital Medical College	1923
Johns Hopkins Medical College	1922
Woman's Medical College	1922
Tufts College Medical School	1923
Rush Medical School	1920
Washington Univ. School of Medicine	1922

ANATOMY

Answer any ten of the following questions: 1. Give a brief description of the development of the brain. 2. Make a diagram of a cross-section of the spinal cord in the lower cervical region. Designate the tracts and name their functions. 3. Describe the oral cavity as it appears in the normal conditions. Illustrate and designate the histologic structures in: (*a*) the lip; (*b*) the pharynx; (*c*) the tonsil. 4. Describe the stomach, giving its position, form, size, attachments, blood and nerve supply. Illustrate and designate the histologic structures in sections of the fundus and pylorus. 5. Describe the kidney, giving its position, form, attachments, blood and nerve supply. Make a sketch of a uriniferous tubule showing the character of the epithelium in its various parts. 6. Name the bones of the lower extremity. 7. Name the principal muscles of the lower extremity and state their functions. 8. Indicate by diagram the topographic relations of: (*a*) the femoral artery at the apex of the femoral trigon; (*b*) the popliteal artery; (*c*) anterior tibial artery in lower third of leg. 9. Name the principal nerves of the lower extremity and indicate which structures or areas they innervate. 10. Describe the knee-joint.

As an alternative for questions 6, 7, 8, 9 and 10 the candidate may answer the following questions: 11. Name the bones of the upper extremity. 12. Name the principal muscles of the upper extremity and state their functions. 13. Indicate by diagram the topographic relations in cross-sections of the upper extremity: (*a*) midway between the shoulder and elbow; (*b*) midway between the elbow and wrist. 14. Name the principal nerves of the upper extremity and indicate which structures or areas they innervate. 15. Describe the elbow-joint.

PHYSIOLOGIC CHEMISTRY

Answer any five of the following questions: 1. What is meant by nitrogen equilibrium? Mention five common protein foods; describe the gastric digestion of the protein constituents of these foods; give in detail the results of normal pancreatic digestion of proteins. 2. What are the essential end products of the alimentary digestion of proteins; from what part of the alimentary tract are these absorbed; what changes do they undergo after absorption; what internal organs are chiefly concerned in the metabolism of the absorbed products of protein digestion; how are the final products of protein metabolism eliminated? 3. What is the chemistry of the nucleins? Mention some foods which are rich in nuclein; what are the effects of gastric and pancreatic digestion on the nucleins? 4. From what part of the alimentary canal are the products of the digestion of nuclein absorbed; what internal organs are concerned in their further metabolism? 5. What body tissues contain relatively large amounts of nuclein; how are the products of the metabolism of nucleins eliminated from the body? 6. Give the origin, composition, function and final disposition of the red blood corpuscles; in what form are their chief constituents eliminated from the body? 7. Give the chief chemical constituents of bacterial cell substance; what are the chemical reactions between the constituents of bacteria and those of the animal body? 8. Trace through the animal body a carbohydrate food, giving in detail its digestion, absorption, assimilation and elimination. 9. Give the origin, function and elimination of bile pigments; state where in the body they are formed, out of what they are formed, into what they are converted, and what, if any, function they perform in health. 10. Discuss the vitamins; give their classification and state in detail their relation to nutritional disorders.

MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS

Answer all questions: 1. (*a*) Discuss the action of hypnotic drugs. (*b*) Give three examples of drugs used as hypnotics. (*c*) Discuss the antispasmodic action of hydrated chloral and give two indications for its use with this purpose in view. 2. (*a*) Upon which pharmacologic actions of morphin does its therapeutic use mainly depend? (*b*) Explain the occasional occurrence of convulsions after the administration of morphin to children. (*c*) Is there any danger connected with the administration of morphin to a nursing mother? 3. (*a*) Define caffein and theobromin. (*b*) Discuss the pharmacologic action of caffein with reference to its use in heart disease. (*c*) Discuss the dangers incident to the intravenous injection of caffein. 4. (*a*) Discuss the pharmacologic actions of epinephrin, particularly with reference to the different methods of administration. (*b*) Give the therapeutic indications based on these actions. 5. (*a*) Discuss digitalis action as illustrated by animal demonstration. (*b*) In the administration of digitalis, which effects are to be specifically noted as indicative of digitalis action and as signs for diminishing the dose or discontinuing it altogether? 6. Write separate prescriptions for each of the three following drugs: caffein; iron; bismuth. In each instance express the ingredients in both metric and apothecary terms; add full direction to the patient; state the dose intended; give the disease conditions for which the drug is prescribed.

PATHOLOGY

Answer any six of the following questions: 1. Given an injection of virulent staphylococci into a thigh muscle of a guinea-pig: Describe in detail the course of events which may follow. 2. Discuss the various uses and meanings of the word "hyaline." 3. What extraneous pigments are found in the body? How may they be recognized? 4. Tabulate the occurrence of lipoids in the body under the following headings: (*a*) Neutral fats as adipose tissue. (1) Normal locations. (2) Pathologic deposits. (*b*) Neutral fats in cells. (1) Normal. (2) Pathologic. (*c*) Cholesterin. (1) Normal. (2) Pathologic. 5. Discuss the essential gross and microscopic differences seen in carcinoma of the stomach. 6. What diseases are supposed to be associated with disturbances of the pituitary? Describe one of these and the changes usually found in the pituitary. 7. Differentiate grossly and microscopically bacillary and amebic dysentery. 8. Detail the technic to be used and the points to be especially noted in a routine examination of the pericardial sac and the heart.

PHYSIOLOGY

Answer any five of the following questions: 1. Explain the cause of the closure and opening of the different sets of valves in the heart, and give the phases in the cardiac cycle during which each set of valves is closed. 2. State the average pressure and velocity of the blood in the arteries, capillaries and veins, respectively, and tell why the pressure and velocity change as the blood passes from the arteries to the capillaries and veins. 3. Explain the dangers of transfusing an incompatible blood, and tell how you would determine whether or not the blood of A is compatible with that of B, so that A's blood could safely be transfused into B. 4. Describe the normal movements of the stomach and the mechanism of the pyloric sphincter (*a*) after a mixed meal, and (*b*) when water is taken without solid food. 5. Explain the mechanism controlling the outpouring (*a*) of bile, and (*b*) of pancreatic juice into the intestine following a meal. 6. (*a*) Describe the structural and functional change which occurs in the peripheral end of a nerve that has been cut and sutured. (*b*) Compare the structural change produced by cutting a peripheral nerve with that which occurs in the tracts of the spinal cord after these have been severed.

BACTERIOLOGY

Answer any five of the following questions: 1. (*a*) Given a patient suspected of having diphtheria, what steps would you take to establish the diagnosis? Include description of culture mediums employed, technic for staining and morphology of organism. (*b*) When a positive diagnosis is established, what measures would you institute to safeguard immediate contacts against diphtheria? 2. (*a*) How would you determine bacteriologically whether a given organism from a patient is a *Streptococcus hemolyticus*, *Streptococcus viridans* or a pneumococcus? (*b*) Give details of bacteriologic procedures involved. 3. Given a case of typhoid fever: (*a*) From what sources or through what routes could the patient have acquired the infection? (*b*) In what portions of the body are the typhoid bacilli ordinarily found during the first ten days of illness; during the third and fourth weeks; and after convalescence? (*c*) When a typhoid patient becomes a "chronic carrier," in what parts of the body do the typhoid bacilli usually establish their foci and how are they excreted? 4. (*a*) What is the significance of *Bacillus coli* in water supplies? (*b*) What is meant by the presumptive test for *Bacillus coli* and how would you carry it out on a specimen of water? 5. What are the differences in immunologic principles underlying: (*a*) Pasteur's treatment of rabies? (*b*) Smallpox vaccinations? (*c*) Treatment with diphtheria antitoxin? (*d*) Antityphoid vaccination? 6. (*a*) To what diagnostic procedures has the technic of the complement-fixation reaction been successful applied in man and animals? (*b*) What are the principles on which this technic is based?

Part II

Part II of the examination was held in eight of the medical schools mentioned above, February 20 and 21. This was also a written examination in the following subjects and with the relative values assigned: medicine, 75; surgery, 75; obstetrics and gynecology, 50; public health, 25, making a total of 225 counts for this part. A candidate taking Part II must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the ratings of the answered papers. Falling below 65 per cent. in two subjects or below 50 in one subject constitutes a failure.

Twenty-one candidates appeared for examination in Part II. Of those, eighteen passed and three failed.

PASSED

Names and College	Year of Graduation
Walter C. Earle, Rush Medical School	1920
Denver M. Vickers, Harvard Medical School	1921
Sadie MacFarland, Woman's Medical College	1921
Joseph M. Hayman, Jr., University of Pennsylvania	1921
Herbert P. Miller, State University of Iowa School of Med	1921
Lee Fosbay, University of Pennsylvania	1920
Dan C. Darrow, Johns Hopkins Medical School	1920
Paul R. Rockwood, State University of Iowa School of Med	1919
Allen M. Kilgore, Rush Medical School	1918
Richard W. Pullen, Yale University School of Medicine	1921
Joseph T. Eagan, Yale University School of Medicine	1921
Alfred DeBard Biggs, Rush Medical School	1921
M. G. Adolph Neupauer, Jefferson Medical College	1921
Marian C. Putnam. Johns Hopkins Medical School	1921
William Earle Dodd, University of Pennsylvania	1920
Walter H. Spoenemann, Rush Medical School	1920
J. Herbert Tinsman, University of Pennsylvania	1921
Mary H. Jennings, Woman's Medical College	1921

FAILED

Harvard Medical School	1921
Woman's Medical College	1920
Johns Hopkins Medical School	1918

AVERAGES OBTAINED IN PART II *

Candidate's Number	Medicine, Value 75	Surgery, Value 75	Obstetrics and Gynecology, Value 50	Public Health, Value 25	Final Averages
57	51.5	77	80	75	119.4
77	79.5	92	85	67	187.9
83	57.5	90	80	67	167.4
85	76.5	82	75	77.5	175.6
96	86.5	80	95	76	191.4
99	90.5	87	85	75	196.9
104	76	85	90	75	184.4
105	92	91	90	89.5	204.7
108	73.5	85	75	76.5	175.5
113	96.5	95	85	90	208.7
120	80	84	90	78.5	187.6
121	74	75	70	70	164.3
125	84.5	89	80	81	190.4
132	85	85	90	74	191.1
135	55	82	95	79.5	170.2
140	89	88	95	69	197.5
141	77.5	78	75	82.5	174.7
145	76	83	85	60.5	176.9
150	87.5	80	75	81	183.3
159	90.5	89	75	74	190.7
160	74	83	85	69	177.5

* The general average of the candidates is based on subject values as rated by the board. The averages in each subject are on a basis of 100; 1.000 is the total perfect mark as rated by the board for the entire examination; 225 is the maximum mark on this basis for Part II.

MEDICINE

Answer all questions: 1. (*a*) What combination of physical signs would warrant a diagnosis of pleurisy with effusion? (*b*) What are the indications for aspiration in this condition? (*c*) Describe the technic of aspiration. 2. (*a*) Describe the conditions of the circulatory system which usually accompany chronic interstitial nephritis. (*b*) What evidence would lead you to conclude in such a case that cardiac insufficiency had set in? (*c*) How would you treat this cardiac insufficiency? 3. (*a*) Define acute miliary tuberculosis. (*b*) How may it originate? (*c*) Describe the type known as an acute general infection and tell how you would differentiate it from typhoid fever. 4. In a case of apoplexy with right motor hemiplegia occurring in a man 52 years of age, discuss the conditions which would determine your diagnosis as between thrombosis, embolism and hemorrhage. 5. Define and discuss hemophilia, and differentiate it from purpura hemorrhagica. 6. Contrast the spinal fluid obtained by lumbar puncture in acute poliomyelitis and in cerebrospinal fever. 7. (*a*) Define nephrolithiasis. (*b*) On what evidence would you base a diagnosis of renal colic? Time allowance, three hours. Allow thirty minutes each to Questions 1, 2 and 3; fifteen minutes each to questions 4, 5, 6 and 7, and thirty minutes for review. The object of this examination is to test your grasp of the problems in medicine presented by the diseases mentioned. Intelligent, *concise* discussion counts for much more than the mere recapitulation of facts. You may well utilize the full time allowance for each question, remembering that quality counts for more than quantity.

SURGERY

Answer any seven of the following questions: 1. Give the differential diagnosis of tuberculosis, stone and tumor of the kidney. Indicate treatment. 2. Discuss the differential diagnosis of surgical lesions causing blood in the stool. 3. Name and discuss the diagnosis of the local surgical complications and sequelae of acute and chronic gall tract infection. 4. Discuss the differential diagnosis of syphilis, tuberculosis and carcinoma of the tongue. Indicate treatment. 5. Discuss the treatment of simple uncomplicated fracture of the upper third of the femur. 6. Discuss causes, symptoms and treatment of strictures of the male urethra. 7. Discuss surgical conditions of the knee-joint, giving causes, diagnosis and treatment. 8. Gangrene of the foot. Discuss varieties, causation and treatment.

OBSTETRICS

Answer all questions: 1. (*a*) Give in detail the treatment of a postpartum hemorrhage, with the placenta retained. (*b*) What precautions should be taken during labor to prevent such an occurrence? 2. How would you manage a prolonged labor during the first stage due to: (*a*) Uterine inertia with "rigid cervix?" (*b*) Occiput posterior position? (*c*) Mention some other common causes of undue prolongation of the first stage of labor. 3. What is the treatment of obstinate vomiting in the early months of pregnancy? 4. What are the indications for the operation: (*a*) High forceps? (*b*) Version followed by breech extraction? 5. How would you make a diagnosis and outline the symptoms and treatment of a streptococcus infection of the uterus after delivery at full term?

GYNECOLOGY

Answer all questions: 1. Describe the management of a case of sterility, mentioning the common causes, with diagnosis and treatment. 2. Discuss the etiology, symptoms and treatment of tuberculosis of the female organs of generation. 3. Diagnosis, symptoms and treatment of acute gonorrhea in women. 4. Differential diagnosis of acute postoperative gastric dilatation and its treatment. 5. Clinical history, diagnosis and treatment of acute hydronephrosis.

Public Health

HYGIENE

Answer all questions: 1. Discuss management of a massive outbreak of typhoid fever in a city of 75,000. 2. Discuss sewage disposal for an inland city of 50,000. 3. Discuss measures for the prevention and control of malaria. 4. Discuss the factors in the problem of infant mortality. 5. Discuss the prevention of: (*a*) beriberi; (*b*) pellagra. 6. Discuss the eradication of diphtheria.

MEDICAL JURISPRUDENCE

Answer all questions: 1. Discuss the duties of a coroner. 2. How would you determine whether or not a dead infant had ever lived? 3. How would you differentiate between blood stains of human and animal origin? 4. Discuss the diagnosis of poisoning by strychnin.

Social Medicine

ANTIVIVISECTION CAMPAIGN IN ST. LOUIS

St. Louis saw the defeat, April 19, 1922, of an active antivivisection campaign which had seriously threatened the progress of medical teaching and research in that city since Jan. 27, 1921. For many years the medical schools of St. Louis had obtained dogs necessary for teaching and research from the pound simply by an agreement with certain city officials; but in January, 1921, the Humane Society secured control of the pound, and the supply of dogs to the medical schools immediately stopped. Through the courtesy of the mayor, a promise of sufficient dogs to finish out the school year was made by the Humane Society, but the promise was not fulfilled, and not a single dog was forthcoming. The real intention of the Humane Society was not disclosed, however, until later, when boys and men bringing dogs to the schools were threatened with arrest, and a reward was offered by the Humane Society for information leading to the arrest and conviction of parties taking up stray dogs and delivering them to the medical schools. These activities brought about a condition which necessitated discontinuing certain courses in the medical schools for a time, and entirely stopped research on dogs in many departments. To meet this emergency, the dean of Washington University School of Medicine started a counter campaign, and succeeded in having introduced into the chamber of aldermen an ordinance which provided that whenever a school of medicine that was recognized by the state board of health applied for impounded dogs for necessary teaching and study of medicine, the animals would be delivered for a fee of 75 cents to cover the expense of taking them up and caring for them. The fight in St. Louis thus assumed a different aspect than had been the custom in other cities. The medical profession now assumed the offensive, and put the antivivisectionists in such a position that it was necessary for them to prove the worthiness of their cause.

STEPS IN THE CAMPAIGN

A joint committee from the Washington University School of Medicine and the St. Louis University School of Medicine was organized. This committee later included the health commissioner of the city of St. Louis, who acted as chairman. Plans were outlined whereby the committee was to get in touch with the medical societies, hospitals, physicians, chamber of commerce, prominent business concerns, women's organizations, and prominent ministers and lawyers, and to ask their endorsement of the proposed ordinance. It was also planned to inform the mayor and aldermen of the necessity of such measures and to get in immediate touch with prominent politicians of the city. The Barnard Free Skin and Cancer Hospital immediately gave its support to the committee and promised to become active if necessary. Prominent ministers also pledged their support. Feb. 24, 1922, the St. Louis *Post Dispatch* announced that the board of directors of the Humane Society had met at the Planters Hotel and decided to appeal to the aldermanic committee to which the bill was assigned to kill the bill in the committee. The president stated that an intensive campaign would be planned if the committee reported the bill favorably to the board of aldermen. Shortly afterward, large quantities of antivivisection literature in the way of pictures of Pawlow dogs, a living dog in a crematory, numerous devices for holding dogs, and anatomic dissections were evident throughout the city, and large numbers of letters were sent to the committee and prominent politicians.

ORGANIZATION OF THE MEDICAL FORCES

It was time now to organize the medical forces. In conference the president of the Missouri State Medical Association, the president of the St. Louis Medical Society, the chairman of the committee on publicity of the St. Louis Medical Society, and the vice dean of St. Louis University drafted tentative resolutions which were brought before the St. Louis Medical Society, February 28. At this meeting short addresses were made, and copies were given to reporters of the four newspapers who were present. March 2, a copy of the resolutions, and a letter urging every physician to see his alderman and to bring the question before his patients were in the hands of every member of the St. Louis Medical Society. The resolutions were as follows:

> Whereas, The unrestricted use of animals is absolutely essential for the teaching of medicine and the conquest of disease not yet completely brought under control, and
>
> Whereas, It is only through the use of animals that medicine can be taught, that it is possible to make diagnosis and to prepare medication for a large number of diseases, such as diphtheria, lockjaw, hydrophobia, smallpox, tuberculosis, syphilis, and a host of others, and
>
> Whereas, It has only been through the use of animals that we have been able to free ourselves of the scourge of childbed fever, thus to give the baby in arms to its mother, to free ourselves from typhoid fever, yellow fever and plague, and to develop methods for the reclaiming of our injured and maimed soldiers and other mutilated individuals, and
>
> Whereas, Through the use of dogs especially, students can be adequately trained so that they do not meet their first patient without previous experience, and the skilled surgeon is enabled to devise immediately new methods of treating a rare kind of injury coming to his attention, and
>
> Whereas, This use of animals is solely to obtain knowledge for the alleviation of human suffering, which knowledge surgeons and medical investigators have frequently furnished at the expense of their own lives, and
>
> Whereas, it has come to our attention that for some time past the advancement of medical and scientific knowledge has been seriously hampered in St. Louis through the inability of our laboratories to obtain sufficient animal material, and
>
> Whereas, We know that the animals in our laboratories are well cared for and humanely treated, therefore, be it
>
> *Resolved*, By the St. Louis Medical Society that we do hereby endorse heartily the proposed ordinance now before the board of aldermen and respectfully urge its passage in the interests of humanity and of public health and safety in order that men can be properly trained for the practice of medicine; that we may advance our knowledge so as to bring under control diseases before which we are still practically helpless; and finally, in order to protect the fair name of our city, which is already regarded as one of the leading centers of medical learning in this country, a position it cannot hope to hold unless given unrestricted opportunity to advance.

Publicity on the part of the physicians was now under way. The campaign slogan, "Shall it be babies or dogs?" had been sounded a few days before in an address before the Women's Republican League of Missouri. The College Club, and the Civics Club passed resolutions favoring the bill, March 7. The St. Louis Surgeons Association, and the St. Louis Society of Internal Medicine each adopted resolutions favoring the bill. Copies of all these resolutions were sent to the mayor, members of the board of aldermen, and the newspapers during the week. The chamber of commerce, the Jewish Women's Council, the board of directors of the Negro Republican League, the St. Louis Association of Methodist Ministers, the president of the St. Louis Federation of Labor, and the president of the Catholic Women's League publicly favored the bill. The only society voting against it during this time was the St. Louis Branch of the American Medical Liberty League.

Committees called on prominent politicians, and the Public Welfare Committee of the board of aldermen visited Washington University to see the work at the school of medicine. They witnessed an operation on a dog, saw dogs that had been operated on, saw rats with cancers, and an operation on a boy in the general operating room, and were so interested that the chairman asked whether he might come again and bring other aldermen along. March 4, the St. Louis *Times* published a poll on the bill showing four aldermen in favor, five openly opposed, and eighteen waiting the public hearing before deciding. March 6, a prominent surgeon made a public address reviewing the history of surgery, and the relation of animal experimentation to its advance. The *Women's Home Companion* sent, on request, 1,000 copies of "The Truth About Vivisection"; the chairman of the committee for the protection of animal experimentation in Boston sent a large shipment of the third statement of that society. A small number of copies of the second article in the *Women's Home Companion* of November, 1921, was also obtained and distributed. At the public hearing, March 7, the aldermanic chamber of the city hall was packed an hour before the hearing began. About one fifth of those present were of the Humane Society. The cause of the medical schools was ably presented by the commissioner of health of St. Louis, the rabbi of the Temple Israel, a former solicitor-general of the United States, the acting president of St. Louis University, the pastor of the Second Presbyterian Church, the assistant secretary of the chamber of commerce, and the president of the Missouri State Medical Association; the other side was represented by the superintendent of the Humane Society, a director of the Humane Society, a statistician, a real estate operator, and the president of the Humane Society.

March 9, twenty aldermen again visited Washington University School of Medicine and not only saw animals which had been used for experimentation and operations in the hospital, but also visited a class in operative surgery. March 14, the Committee of Public Welfare voted unanimously in favor of the ordinance, which was then referred to the board of aldermen. Two newspapers published editorials favoring the bill. Opposing editorials did not appear in any paper, but a number of outspoken antivivisection letters appeared in the press during the period of publicity. March 31, a layman who had investigated the whole antivivisection society for a prominent journal spoke briefly to the aldermen at a recess which they granted. The president of the Missouri Humane Society replied to the speech before the aldermen. When the bill was brought up for vote just after these speeches, an alderman requested that it be postponed on the grounds that it dealt with matters that did not concern the aldermen, but the objection was defeated and a vote was called. The bill passed. Twenty-two aldermen voted yea and four nay. Two aldermen did not vote. The mayor signed the ordinance, April 19, and it will go in effect the latter part of May.

Miscellany

"THE SCIENTIFIC SIDE"*

"Nothing material is of value compared to philosophical knowledge of the next world and understanding of life in this which Spiritualism offers. My reputation, what title I have, what little money I possess, what slight literary prestige may be mine—all these are but as mud in the gutter in the illumination of the spiritual world, and I would gladly discard them all rather than lose the understanding my psychic researches have brought me."

AUDIENCE IS ELECTRIFIED

The speaker stood with upreared head as he shouted these words with all the fervor of an evangelist, and the tense audience, catching the fire of his glowing faith, seemed animated for an instant by an electric thrill. A thunder of applause broke out.

Time after time, as he cited circumstances of what he called indisputable cases of spiritual communication, he paused and cried in ringing voice: "If that is not a case of authentic contact with the next sphere, what is it? I have a right to ask that question." Each time a burst of applause signified the approval of his hearers.

. . . .

Sir Arthur's creed, stated simply, is this: Each human being possesses a spiritual body which is the exact counterpart of the physical body. Every feature, every lineament is the same. This spiritual body is a thing of substance, although beyond our comprehension as such. He characterized it as the "etheric body." This spiritual body inhabits its earthly home for its allotted time, which span is given us for development of the soul or spirit. In other words, terrestrial life is a space of time given us for "spiritualization," for fitting the spiritual body for its celestial life. When death overtakes the physical body, the etheric body escapes and rises to the next world, residing there in the plane to which it was developed while on earth, gradually ascending to higher and higher spheres.

"People who have clairvoyant powers are able to see the escape of the etheric body," he declared. "I have a record of one instance where there were eight daughters in one family who had clairvoyant vision. Their mother became ill and finally lay dying with her family around her. At the moment of death each daughter saw a burst of splendid lights, saw the figures of beckoning angels, and saw her mother's etheric body drift away in celestial company."

. . . .

Spiritual beings can communicate with terrestrials only through the aid of mediumistic powers, he said. The medium has the power to project from her body an aura or vapor in which the spiritual being can materalize. It is only when thus materialized that the spirit may converse with us, and during these periods there must be a compliance with the material laws of the earth.

"This projected vapor under favorable conditions can form itself into a solid substance," he went on, "a viscous putty-like substance that can pass through cloth without wetting it, and which immediately dissolves in light. The vapor is immediately dispersed in light, and the solid substance is only slightly less sensitive to this disturbance."

This solid substance is the ectoplasm, he said, and in its sensitiveness to light is much the same as the plate of a camera.

"One cannot develop a photographic plate in light, unless it is a dull red light, and the ectoplasm obeys this same law. It too can be seen only in red light or in the faintest of ordinary light."

With simple dramatic force Sir Arthur described his first experience in observing this ectoplasm with Mlle. Eva, a French woman, as the medium.

ENCIRCLED HER BODY

"Mme. Bisson assisted Mlle. Eva in a cabinet in which I was present with other observers," he said. "Mlle. Eva was wrapped in a heavy rubber coat in order to protect her body from the light as much as possible. She entered into a trance, and after a short time an aperture was opened in the front of the rubber coat so that I could look within. I saw the ectoplasm in a thick, slimy band encircling her body like some monstrous worm.

"'May I touch it?' I asked Mme. Bisson.

"She replied, 'Yes.'

"I reached within the aperture and firmly grasped between thumb and forefinger the belt-like mass, and as I held it I felt it writhe—a living, pulsing substance."

Sir Arthur stated his belief that the medium would have died from shock had any attempt been made to remove this reputed ectoplasm, but the observers finally managed to pinch off a small portion, and this was hurried into a laboratory where Professor Richet of the University of Paris made a microscopic and chemical examination.

"It was found to consist of mucoid cells, epithelial cells, a clear, slimy fluid, certain carbonates, and other compounds. It was a sort of etherealized matter, if such a term may be employed.

He cited the circumstances of a number of seances, and in one case read testimonies of other observers who were present.

"In one instance, Mrs. Wriedt of Detroit, an American medium of great power, came to my house and we held a séance in the nursery, a room certainly devoid of suspicious surroundings. My wife and I, Mrs. Wriedt, and my secretary, Major Wood, held hands as we sat around a table, and having learned the value of singing in such experiments, we all sang softly in chorus. We knew the words of the hymn 'Onward, Christian Soldiers,' and by common consent took up this air. Suddenly there burst out overhead a clear joyous baritone voice, singing with us word for word. I stopped and heard the voices of my wife, of Mrs. Wriedt, and of Major Wood. And above them all was this ringing baritone voice.

SPIRIT VOICE WAS SINGING

"If that isn't a spiritual phenomenon, what is it?" he cried. "I have a right to ask that question."

He narrated details of numerous other séances, of one in which he declared he saw the face of his dead mother, "as plain as a Rembrandt portrait emerging from the dark," every wrinkle and line as he had seen her last.

"Again," he said, "I went to Southsea, where a Welch miner was staying." This was the medium Evan Powell.

"In this séance there were four other observers besides myself. Powell sat in my room in a chair and asked me to tie him in place. So well did I tie him that we had to cut him out after. Then he fell into a trance, and suddenly I became aware of dazzling celestial lights over his head. Then my son's voice cried out: 'Father, father.' The voice was not a yard from my face.

"Yes, my boy," I answered. "Yes, what is it?"

"'Father! Pardon!' he said, and I felt his hand on the top of my head, bowing down my head, and then felt his lips touch my forehead.

"I knew what he meant immediately. Only I could have known. He had never subscribed to my belief while alive, and now he had come back to tell me that it had been as I said.

"'Yes, my son,' I called back to him, 'you had a right to your own belief while here with us.'"

Again the speaker, wrought up to a high pitch, cried:

"If that isn't spiritual communication, what is it?" And the audience, listening intently to every word, broke out in a clatter of applause.

INVESTIGATION OF MUNICIPAL HEALTH DEPARTMENTS

The committee appointed by the American Public Health Association to investigate the practice of municipal health departments has issued its report (*Am. J. Pub. Health* **12,** January and February, 1922). This committee, which included Prof. C. E. A. Winslow, chairman, New Haven, Conn.; Dr. Charles V. Chapin, Providence, R. I.; Dr. Wade H. Frost, Washington, D. C.; Dr. Donald B. Armstrong, Framingham, Mass.; Dr. Allen W. Freeman, Baltimore; Dr. Louis I. Dublin, New York, secretary, and Dr. Lewis H. Thompson, U. S. Public Health Service, obtained information in all cases by having a representative of the committee visit each city. Eighty-three cities of more than 100,000 population were covered by the study. It was found that chlorin is employed for purification of city water in fifty-one out of seventy-six cities reporting. The average daily consumption of water varies from 52 gallons per capita in Fall River, Mass., to 259 gallons per capita in Chicago. Bacteriologic examinations of water are made daily or oftener in fifty-two out of the sixty-eight cities reporting. Fifty cities discharge their sewage into rivers, eight into lakes, and twenty into the ocean, and in fifty-nine instances the sewage is discharged untreated.

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* From report of a lecture by Sir Arthur Conan Doyle, New York *Post*, April 13, 1922.

MILK SUPPLY

Forty-six cities have milk commissions, and in thirty-nine, tuberculin testing is required of all herds from which raw milk is sold. Pasteurization of milk, except that from tuberculin-tested herds, is required in thirty-eight cities, the holding system being required in all but twenty; a temperature of 145 F. for thirty minutes is most commonly used. The average daily consumption of milk in sixty-eight cities was 0.66 pint per capita. Cities of 500,000 people or more use milk on the average from 858 farms, making proper supervision at the source of supply a difficult matter; seventeen cities make physical examinations of milk handlers, and twenty-four have routine procedures for the detection of disease carriers; "the completeness with which these ends are attained is, however, dubious."

PUBLIC HEALTH LABORATORY

Every city investigated had some sort of public health laboratory examinations; five had no municipal laboratory, and had the work done by contract with private laboratories or hospitals. The average number of examinations made was 86 per thousand persons, with an average cost for each specimen of 43 cents. A full-time chief of the laboratory service in cities over 500,000 received an average of $4,016 a year, and in cities with less than 250,000 population, $2,496 a year. The average staff required for making 100,000 examinations was 8.3 bacteriologists, 2.3 chemists, and 16.1 other persons (technicians, clerks, and the like).

PUBLIC HEALTH NURSING

Pubic health nursing service of some sort is available in all the cities studied. There was an average of 16.5 public health nurses per hundred thousand population; one supervisor was provided for about every 12.5 nurses. Medical inspection of children in public schools is done in all of the eighty-three cities except Dallas, Texas. Medical inspection of children in parochial schools is done in thirty-nine cities; in thirty-four by the health department, and in five by the board of education. Venereal diseases are reportable in all cities studied except Washington, in every case under state law, sometimes supplemented by local ordinance. A total of 61,758 cases of syphilis and 58,074 cases of gonorrhea was reported in sixty-two cities in 1920, an incidence of 270 and 253 cases per hundred thousand persons, respectively.

VENEREAL AND CONTAGIOUS DISEASES

Venereal clinics are in operation in eighty-two cities; Somerville, Mass., alone reported no clinic. Treatment is generally free, but in eighteen instances a nominal charge where possible was made. Seventy-six cities have tuberculosis clinics, but the reporting of cases of tuberculosis is still exceedingly lax. Seventy-nine cities have antispitting ordinances, but only twelve reported arrests. Smallpox and chickenpox are the only two diseases the diagnosis of which are commonly verified by the health department; seventy-three cities, it is surprising to say, still practice terminal fumigation, but many cities fail to use available cultural methods for the control of contacts.

EXPENDITURES

The gross expenditure of municipal health departments ranged from 21.6 cents to $3.18 per capita, 82 per cent. of which was expended in salaries. The health officer is appointed by the mayor in twenty-eight of the seventy-two cities reporting, directly by the council in seven, and by civil service in one. Forty-eight of the cities studied require the health officer to be a physician. Sixty-four health officers were doctors of medicine; four had the degree of Doctor of Public Health, three had law degrees, and two had engineering degrees.

Book Notices

The Intestinal Protozoa of Man. By Clifford Dobell, M.A., F.R.S., Protistologist to the Medical Research Council, National Institute for Medical Research, London, and F. W. O'Connor, M.R.C.S., L.R.C.P., D.T.M. & H., Wandsworth Scholar, London School of Tropical Medicine. Cloth. Price, 15 shillings. Pp. 211, with 8 illustrations. London: John Bale, Sons & Danielsson, Ltd., 1921.

Readers conversant with the work on the protozoa parasitic in the human intestine accomplished by these authors during the World War will open this book with anticipation, and they will not be disappointed. The combination of these two men, masters, respectively, of the fields of zoology and of medicine, has worked out admirably; whether or not one agrees with all the details of the work, one cannot overlook the effectiveness and thoroughness of the treatment accorded the various topics. After a general opening chapter, each of the different groups of intestinal protozoa is considered separately, and then the diagnosis and treatment of intestinal protozoal infections, each in its own chapter, while finally the coprozoic protozoa of human feces are given detailed consideration. This chapter is as valuable as it is new, for many protozoa which are coprozoic come in one way or another to be interpreted as entozoic, and much confusion has been incorporated into various works by reason of the failure to differentiate sharply between these two groups of radically different habit. An extensive and carefully prepared list of original references is included, and the illustrations, several of which are colored, display fine workmanship in delineation and good results in reproduction. In the discussion of the different species, each form is taken up historically, with a list of synonyms and a correlated discussion of the earlier writings. It is then described with great care, both in the living condition and after preservation and staining. The important cystic condition receives special attention, and all other information available concerning methods of reproduction and of artificial cultivation of the species are included. The treatment accorded the work of other observers, though generally judicious, is occasionally marred by incautious criticism, such as that bestowed on Kofoid because he describes certain structures which these authors think are too minute to be probable, and on Boyd, whose description of cysts in *Chilomastix mesnili* certainly deserves credence. A careful perusal of the work will prove of value to investigators in this field, and a thorough study of its contents will form an admirable foundation for those who desire to inform themselves either theoretically or practically concerning the intestinal protozoa of man.

The Flutter of the Goldleaf, and Other Plays. By Olive Tilford Dargan, and Frederick Peterson. Cloth. Price, $1.50. Pp. 114. New York: Charles Scribner's Sons, 1922.

Dr. Peterson, well known as a psychiatrist, contributes a play to this book and collaborates in two others. The remaining play is by Mrs. Dargan. "The Flutter of the Gold Leaf," the first play, is a plea for more sympathetic understanding of the incipient mental defective. The concluding sketch by Dr. Peterson deals with psychotherapy. The title play would appear to be favorable for production by some of the numerous organizations now presenting one-act plays throughout the country. The others seem to lend themselves more suitably to reading than to presentation. It is stimulating to find a physician with the literary accomplishment displayed by Dr. Peterson.

Die Diathermie. Von Dr. Josef Kowarschik, Primararzt und Vorstand des Institutes für Physikalische Therapie im Kaiser-Jubiläums-Spital der Stadt Wien. Third edition. Paper. Price, 228 marks. Pp. 166, 89 illustrations. Berlin: Julius Springer, 1921.

This is an improvement over the second edition. In the theoretical part, all the discussions of high frequency currents that were too technical to be of interest to the medical man have been omitted. A concise and popular explanation of the electron theory, as far as it applies to high frequency currents, has been added. The description of the apparatus for medical diathermy is brought up to the modern development of these appliances. A welcome addition is also a detailed discussion of the technic of administering the high frequency currents to the various parts of the human body. Particularly welcome to the tyro in this therapy will be an explanation of disturbances in the electric apparatus and how to avoid them, and, if occurring, how to remedy them. All the experiences of recent years were employed in fixing the indications for medical diathermy. The book as a whole lays stress primarily on medical diathermy, while the chapters on electrocoagulation, or surgical diathermy, are presented more in the form of an abstract.

Medicolegal

Physician's Report Not Enough to Sustain an Award

(Stimal v. Jewett & Co. et al. (N. Y.), 190 N. Y. Supp. 889)

The Supreme Court of New York, Appellate Division, Third Department, in reversing an award of the state industrial commission in these proceedings under the workmen's compensation law, says that, when the last hearing was had before the commission, it announced that it would ask the claimant to appear before a certain physician for examination; and the case was continued. About a month thereafter, the physician made a report to the commission, and it was evident that his report formed the basis of the determination that there was a loss of the use of one-third of the hand. Apparently the report was not submitted at any hearing of which the employer and the insurance company or carrier were notified. The physician did not appear for examination, and there was no opportunity to cross-examine him. The award, therefore, stood on the physician's unsworn statement, which was received outside of any regular hearing. The law contemplates that the employer and the insurance carrier shall be notified of the hearing and participate therein, and the receipt of this report, under the circumstances, was prejudicial to the employer and the insurance carrier, and called for a reversal of the award.

Sheriff Too Zealous in Enforcing a Quarantine

(Archbold et al. v. Huntington, Sheriff (Idaho), 201 Pac. R. 1041)

The Supreme Court of Idaho affirms a judgment against the defendant, to the effect that he should be deprived of his office as sheriff, and in favor of the informants for $500 and costs, because after he had arrested the complainants on a warrant, in November, 1918, he wrongfully kept them in jail, as a matter of quarantine. The court says it appeared that two of the county commissioners, one being a physician, and he, with the other members, having at some former time designated himself as county health officer, made some effort or took some steps toward establishing a quarantine district, to prevent the introduction of the Spanish influenza, and thereby attempted to prohibit all persons from entering the quarantine district, unless first detained in quarantine for such time as the health officer should determine was necessary. But it was clear from the record that a quarantine district was not established. The complaint on which the warrant of arrest was issued charged the complainants in this case with the crime of having wilfully violated quarantine regulations, and the warrant issued thereon commanded the defendant sheriff forthwith to arrest them and bring them before the probate court that issued the warrant, or before some other magistrate. This warrant of arrest was regular in form, and issued by a court of competent jurisdiction, and was sufficient to protect the sheriff in its due execution, if he had complied with its requirements. But he failed to take the complainants before the probate court or any magistrate, as the writ commanded and they requested him to do. Instead, he put them in the county jail, to hold them, as he testified, until their quarantine period was up; and he was ever willing, he averred, to take them before the probate court and to permit them to go where they pleased, after being detained and quarantined the length of time required by the rules and regulations established in that county.

It might be, the court goes on to say, that the defendant and the physician, the county health board officer, acted under a mistaken notion that it was within their authority to arrest and place in jail all persons who entered this pretended quarantine district, but, however that might be, it could not be urged even as an extenuating circumstance, much less as a defense, on behalf of the defendant. He contumaceously refused to obey the order of the court, and, acting either on his own volition or on the direction of the health officer, placed the complainants in jail for what he or the health officer determined was the proper quarantine period for which they should be held. Manifestly, ministerial officers cannot usurp the functions of courts in this manner, and escape the consequences of their wrongful acts.

In a dissenting opinion it is stated that from the record it clearly appeared that the people, particularly in and about Challis, were panic-stricken, even to the extent that they barricaded themselves against officers of the federal and state government entering the town. Their wire entanglements quite equaled, if they did not surpass, those constructed by the powers opposed to the allies during the great war. While this condition was at its height, the complainants entered the restricted district, and a warrant was placed in the hands of the defendant, as sheriff, to apprehend them. His conduct was not such as should receive commendation at the hands of this or any other court, yet it is not thought that the judgment should be sustained.

Injury and Preexisting Disease Under Workmen's Compensation Act

(Springfield District Coal Mining Co. v. Industrial Commission et al. (Ill.), 132 N. E. R. 752. Rockford Hotel Co. v. Industrial Commission et al. (Ill.), 132 N. E. R. 759

The Supreme Court of Illinois says, in the first case, that an employee is entitled by the Illinois statute to be compensated for every accidental injury suffered in the course of his employment and arising out of the employment. If an injury sustained is the proximate cause of the incapacity for which compensation is sought, the previous physical condition of the employee is unimportant, and he may recover for permanent incapacity which results from an accident independent of preexisiting disease. He is not entitled to compensation for a condition resulting from a preexisting disease and not from an injury suffered in the course of employment and arising out of it. If there is a preexisting disease, the employee is entitled to recover for all the consequences attributable to the injury in the acceleration or aggravation of such disease. Such aggravation or acceleration, permanent and progressive in its nature, will entitle the employee to compensation to the extent and in the proportion in which the preexisting disease is increased or aggravated. Mere predisposing physical condition does not affect the right to compensation. If an accident results in a lesion or a new condition of which it is the proximate cause, there may be a recovery of compensation for the same, regardless of predisposing conditions making the employee more susceptible to the injury. Under these rules, the previous condition of the employee in this instance, who had myocarditis before he was injured, was a material circumstance to be considered in ascertaining whether his condition of total and permanent disability resulted from the accident suffered in the course of his employment and arising out of it, or from the disease, and, if from both, the proportion in which the accident contributed; for the proper ascertainment of which, the case is remanded.

In the second case, an employee who had some disease, mild in form, that caused spasms or fits of not very frequent occurrence, fell into an ash pit, was badly burned, and died about three months later. The industrial commission made an award to his widow, but a court set it aside. In reversing the judgment of the court, and directing that it confirm the award, the Supreme Court of Illinois says that some courts hold that, when an employee is seized with a fit and falls to his death, the employer is not liable, because the injury did not arise out of the employment; but a majority of the courts, American and English, hold that, if the injury was due to the fall, the employer is liable, even though the fall was caused by a preexisting idiopathic condition. This employee did not die from epilepsy or a preexisting disease, but from the burns he received from falling into the pit.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

American Association for the Study of the Feebleminded, St. Louis, May 18-20. Dr. R. W. Baker, Laconia, N. H., Secretary.
American Association of Anesthetists, St. Louis, May 22-24. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Association of Industrial Physicians and Surgeons, St. Louis, May 22-23. Dr. W. A. Sawyer, 343 State St., Rochester, N. Y., Sec'y.
American Proctologic Society, St. Louis, May 22. Dr. Ralph W. Jackson, 245 Cherry St., Fall River, Mass., Secretary.
American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Middletown, Conn., Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Association for the Study of Internal Secretions, St. Louis, May 22. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, Yosemite, May 15-18. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Florida Medical Association, Havana, Cuba. June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
Iowa State Medical Society, Des Moines. May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Medical Library Association, St. Louis, May 22-23. Dr. John Ruhräh, 1211 Cathedral St., Baltimore, Secretary.
Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
North Dakota State Medical Association, Jamestown, June 1-2. Dr. H. J. Rowe, Lisbon, Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 1. Dr. I. W. Leech, 111 Broad St., Providence, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. R. D. Alway, 423 S. Lincoln St., Aberdeen, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Sixteenth Annual Meeting, held in Albany, April 18-20, 1922

The President, DR. JAMES F. ROONEY, Albany, in the Chair

Address on Surgery

DR. JOHN B. DEAVER, Philadelphia: In the development of surgery, animal experimentation has done more than anything else to widen the boundaries of our knowledge by substituting for vague theories more exact knowledge and refined methods of procedure. This spirit of investigation should be encouraged. Equally essential for surgical diagnosis and treatment are the researches in the field of bacteriology, chemistry, physics and biochemistry. However, we are in danger of losing the advantage of the highly trained senses which our ancestors developed and which enabled them to detect obscure signs. There is too great a tendency on the part of the youthful diagnostician to neglect the development of the five senses and to rely too exclusively on more or less mechanical methods of diagnosis. Closer contact with the anatomist, the physiologist, the pathologist, the pharmacologist and the biochemist is essential. Operative mortality has been reduced to a minimum in a large class of cases. Not a little of the reduction is due to improvement in methods of administering general anesthetics and the institution of local anesthesia. Another factor in the improvement of operative mortality is rapidity of operation, the quickest maneuvers and minimum of manipulation consistent with exact and careful work. The personal equation of the operator is a vital factor in successful surgery today. Postoperative methods have undergone a change. An erroneous impression that is being rapidly corrected is that functional rest is an essential factor in postoperative treatment. Today the wound is allowed to heal with the minimum interference and the maximum of rest. But with regard to function, our efforts take the opposite course. Observation seems to show that wounds of those parts of the body subject to the most constant and unavoidable activity heal more smoothly and rapidly than elsewhere. In the treatment of sprains, dislocations and fractures, instead of prolonged bandaging and rest, we encourage wherever possible early activity of the muscles, and passive and active movement of operated joints, so that by the time the union of bone has taken place the muscles and joints are in a more or less normal condition. To avoid postoperative adhesions and to obtain the necessary freedom of respiration we make our patients assume a semisitting position as early as the second day after operation.

Treatment of Anthrax by the Local and General Administration of Anthrax Serum

DR. JOSEPH C. REEGAN, Brooklyn: The measures of local therapy of anthrax in common use should be abandoned. As cutaneous anthrax in man is primarily a local infection, with a characteristic tendency to remain as such in a high proportion of cases, no method of treatment is warranted which breaks down the barrier zone to the inflammatory process which nature has so carefully and characteristically constructed. The mortality from malignant pustule can no doubt be reduced to a minimum by early recognition and prompt serum treatment. The serum should be administered both by local injection around the lesion, and, generally, into the circulation by the subcutaneous, intramuscular and intravenous routes. The dosage, freqency of injection, and route used necessarily depend on the location and severity of the lesion, the presence or absence of an anthrax septicemia, and, to a lesser extent, on the degree of the constitutional symptoms. The method that seems most successful is that of administering 10 c.c. by local infiltration, every eight hours, and 40 c.c. intravenously every four hours. The local injection of serum around the lesion is a most desirable method to replace the local measures previously utilized.

Sequels of Epidemic (Lethargic) Encephalitis and Their Treatment

DR. LEWELLYS F. BARKER, Baltimore: In epidemic encephalitis, complete recovery is the exception rather than the rule. Perhaps 75 per cent. of the cases exhibit residual phenomena that are more or less serious; hence a guarded prognosis should always be given. A great variety of postencephalitis syndromes have come to observation and description. In motor domains they include hyperkinetic phenomena (myoclonic, choreatic, atheototic, convulsive). Extrapyramidal motor disturbances also have been especially prevalent. In the sensory domain, anesthetic, hyperesthetic and paresthetic syndromes are described. Disturbances of coordination have not been uncommon. Furthermore, many autonomic disturbances have been noted. Perhaps, most common of all sequels have been certain postencephalitic disturbances of the psyche in the form of character, cognitive, affective or conative disorders. A parkinsonian syndrome is a frequent postencephalitic sequel, doubtless because of the predilection of the virus for the corpus striatum, especially the globus pallidus. Particularly common are certain pupillary and ciliary disturbances. Sialorrhea with constant spitting is frequently encountered; xorostomia is less common. Among the nutritional disturbances reported, rapidly developing obesity seems to be the most common. The mental disturbances are "toxic infectious psychoses." A considerable number of children are rendered permanently deficient mentally; even in adults there may be loss of memory and judgment. The psychotic and psychoneurotic manifestations following epidemic encephalitis are various minor and major psychoses.

Use of the Schick Test and Diphtheria Toxin-Antitoxin Mixture in New York City Schools

DR. WILLIAM H. PARK, New York: From 85 to 100 per cent. of nonimmune children became immune to diphtheria after the first series of toxin-antitoxin injections. There are great variations in the results of immunizing injections with the same strength and preparation of toxin-antitoxin. In retesting children who have had one series of injections, the discrepancies varied all the way from 75 to 80 per cent. of successful immunizations in some schools to from 25 to 30 per cent. in other schools. It was found that the percentage of those becoming immune after receiving one series of injections of toxin-antitoxin was in inverse proportion to the percentage of positive reactions following the original Schick test. When the number of positive Schick tests was high, the number of children becoming immune after one series of injections was low. The reverse is likewise true. It was found that the children in the schools in the poorer sections of the city gave fewer positive reactions to the Schick test and responded to the toxin-antitoxin injections with a higher percentage of immunes than the children in the better sections of the city among the well-to-do. We have obtained as high as from 60 to 70 per cent. of positive Schick reactions with the original test in schools located in certain sections among the better classes, while in schools in crowded sections of the city, only from 15 to 20 per cent. gave positive Schick tests. The explanation is that the children in the poorer sections are often exposed to mild doses of diphtheria organisms which bring about a certain degree of natural immunity. Among the children of the better classes this exposure is not present, and they therefore remain susceptible. We have seen no harmful effects from the application of the Schick test and toxin-antitoxin injections in more than 100,000 schoolchildren. In order to bring about an immune child population it is necessary to begin early and to immunize all children from 1 to 5 years of age, as 85 per cent. of the cases of diphtheria occur among this group. The injection of toxin-antitoxin in the new-born brings about very little immunity; the injections are effective, however, after the child reaches the age of 6 months.

Circulatory Functional Tests and Their Significance

Dr. William W. Herrick, New York: In applying the exercise test, the work performed should make a genuine demand on the subject's capability. The pulse rate is counted after the subject has been quietly seated for a few minutes, immediately after exercise, and again after two minutes' rest. In the absence of disease of the lungs or gross disease elsewhere or of fatigue, the pulse rate in the young individual in good physical trim after 100 hops should not be accelerated more than twenty beats a minute; two minutes after stopping exercise it should be within from five to ten beats of the previous resting rate. Dyspnea should not be marked. Modified to meet the individual needs of the patient or physician, this test is the most practical of all for the practitioner. The ideal test of circulatory function should take account of all possible factors. It should include the resting pulse rate, the standing pulse rate, and the rate after exercise and after a change in posture, and such respiratory factors as the vital capacity, the minute volume of pulmonary ventilation, the pressure gradient of carbon dioxid in the blood entering and leaving the lungs, the basal metabolism rate and the electrocardiogram. Such elusive factors as neuromuscular fatigue, psychic states and endocrine balance are to most of us imponderables of weight, but not weighable. Should a higher degree of precision be desired, Schneider's system of rating is to be recommended. The special student may go further and may adopt any or all of the more elaborate methods.

Renal Tests

Dr. John R. Williams, Rochester: The most valuable renal tests are, first, those developed by Mosenthal, the specific gravity and fixation tests. The tests of Myer, Fine and Chace are also of great value. The phenolsulphonephthalein method has a limited degree of usefulness, but none of these tests in themselves are sufficient. The clinical judgment as to the patency of the kidneys must rest on a study of the patient himself modified by renal findings. A single renal functional test is of very little value. Single tests done once or a number of times are not nearly as valuable as combinations of tests. In making functional renal tests it is advisable to use all the common tests and to follow those which give the most significant leads. If a subject develops kidney disease in such a manner that destruction or degeneration takes place slowly so that unaffected cells may compensate, he may go along comfortably for years; if the process comes on rapidly and the opportunity to compensate is not very good, serious phenomena are precipitated. In making functional tests, the best way to test the patient is under the conditions in which he lives at home, as suggested by Mosenthal.

Gastro-Intestinal Tests

Dr. Abraham H. Aaron, Buffalo: Gastric subacidity is characterized by a low total and a free acid, rapidly emptying stomach, rapid disappearance of starch from the contents, and the small amount of contents secured by aspiration. Achylia gastrica is characterized by a total acidity rarely over 10, absence of free hydrochloric acid, absence of pepsin, rapid disappearance of starch, and a small amount of contents secured by aspiration. Hyperacidity is characterized by a high acid value, large amounts of stomach contents, and food retention, due to associated pylorospasm and separation of the contents into three layers. Pyloric obstruction due to ulcer, cicatricial tissue or extragastric pressure is characterized by high acid values, large amounts of contents, food retention and the three layer phenomenon. Carcinoma, nonobstructive, is usually characterized by subacidity, small amount of stomach contents, rapid starch disappearance and rapidly emptying stomach. Carcinoma, obstructive, is characterized usually by a subacidity or achlorhydria, large amounts of stomach contents, food retention and the three layer phenomenon. Fractional analysis has considerable distinctive value, but the single test meal method is more easily and rapidly performed, rendering valuable diagnostic facts, for which reason it must not be too hastily set aside or belittled. The fractional test is of outstanding value in determining a true achylia or subacid condition, and the actual emptying time of the viscus.

Transfusion of Blood of Immunized Donors in Bacteremia

Dr. Lester J. Unger, New York: Biologic tests have demonstrated that the transfusion of unmodified blood is of far greater value than blood modified by the addition of sodium citrate. Since the complement and the phagocytic power of the blood are of great importance in the protective action against pathogenic organisms, unmodified blood from a donor with high phagocytic index should be employed when attempting to combat local or general infections by means of transfusion. We have endeavored to enhance the value of the donor's blood employed in cases of bacteremia by attempting to produce immunity in the donor. We start by giving the donor 100 million killed bacteria from the patient and increasing the dose up to 100 or 150 billion, giving daily injections. In this way we have demonstrated that the donors develop immune bodies. Since time is often an essential factor in cases of bacteremia, the patient is given a first transfusion from an appropriate nonimmunized donor, one whose phagocytic index is high. After the donor has received the vaccines for from seven to nine days, agglutination tests should be carried out before transfusion is performed to establish the fact that he has developed immune bodies.

Common Forms of Nervous Diseases

Dr. Edward Livingston Hunt, New York: Epidemic encephalitis, together with multiple sclerosis and syphilis of the central nervous system, should be considered the three principal nervous diseases. Among the after-effects of epidemic encephalitis one may find the parkinsonian syndrome like that seen in paralysis agitans. I am of the opinion that this syndrome as seen in paralysis agitans and following epidemic encephalitis is identical. In epidemic encephalitis it may be interpreted by assuming that the infection enters certain parts of the brain, causing inflammation and later necrosis. From this it seems fair to assume that the parkinsonian syndrome should be regarded not as an entity but merely as a symptom resulting from a toxic cause or from bacterial invasion. In making a diagnosis of a neurologic condition syphilis should be placed at the head, and one should never reach a definite conclusion until syphilis has been excluded. Certain strains of spirochetes exercise elective action, and certain strains have an affinity for the central nervous system. Syphilis is a constitutional disease, and the nervous system is affected very early. Treatment of neurosyphilis should be intravenous or intraspinal. When the intraspinal treatment can be avoided, it is best to do so. One should adminsister arsphenamin intravenously one day in the week, and on another day give mercury. In most cases in which arsphenamin is not tolerated, this is due to the fact that the dose is too large or that there has been a mistake in the technic. As tabetic patients advance in life, nature seems to set up an immunity against the syphilitic virus, so that they sometimes react negatively to the Wassermann test.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1922, **163**, No. 3

*Relation of Aleukemic Leukemia, So-Called Pseudoleukemia and Malignant Granuloma. H. Fox and D. L. Farley, Philadelphia.—p. 313.
Heart in Infectious Disease. P. D. White, Boston.—p. 335.
*Diagnosis of Tumors of Cauda Equina, Conus and Epiconus Medullaris. H. L. Parker, Rochester, Minn.—p. 342.
*Erythropoietic Action, Cumulative Effect and Elimination of Germanium Dioxid. J. H. Müller and M. S. Iszard, Philadelphia.—p. 364.
*Latent Neurosyphilis in Eight Per Cent. of Medical Patients Ignored Owing to Neglect of Lumbar Puncture. H. Gray, Boston.—p. 384.
*Roentgen-Ray Stimulation of Pancreas in Experimental Pancreatic Deficiency. W. F. Petersen and C. C. Saelhof, Chicago.—p. 391.
Infectious Arthritis of Spine. S. Epstein, New York.—p. 401.
Obstruction of Superior Vena Cava by Primary Carcinoma of Lung. H. W. Dana, Boston and R. McIntosh, New York.—p. 411.
Endocrinal Factor in General Paresis. T. K. Davis, New York.—p. 425.
Chronic Lymphatic Leukemia Associated with Extensive Amyloiditis, Advanced Nephritis and Oral Sepsis. E. S. Du Bray, San Francisco.—p. 430.

Pseudoleukemia: Malignant Granuloma.—Fox and Farley record three cases, grouped by age, clinical course, physical appearance of patient and somewhat by the pathology, which were diagnosed as Hodgkin's disease at first, but by close clinical analysis and examination of excised glands were placed among the tumors and leukemias, or so-called pseudoleukemia. They illustrate how for many months they may not seriously disturb the patient's general health, leading to incorrect diagnosis, or temporization is practised until the entire lymphatic system is involved beyond reasonable expectation of good result. All three patients died from intercurrent acute infection after a short and rather stormy illness. Attention is called to the need for classification of the enlargement of lymphatic bodies and the hyperplasias of these and allied tissues in the absence of a definite increase in the circulating leukocytes. The two cases of aleukemic leukemia reported, while showing very extensive involvement of the lymphatic apparatus, had no reduction of circulating mononuclears. An excision of a lymph node for microscopic study is the only reliable method of making a decision as to diagnosis in lymphatic enlargements. It is valuable also from the standpoint of prognosis and treatment.

Diagnosis of Cauda Equina Tumors.—The combination of sphincter disturbance, atrophic paresis of the lower limbs and perianal anesthesia is characteristic of cauda equina tumors, but the determination of the position and extent of the tumor mass is in some cases an impossibility. Of the eight tumors reported on by Parker only two were encapsulated, and one was diagnosed by the pathologist as an endothelioma and the other a glioma. Five were tumors which showed a tendency to erode the dura, bone and muscle, approaching even to one inch of the skin. One was obviously a relatively benign tumor, but no pathologic diagnosis was made. The earliest, most constant and most distressing symptom in this disease is pain. Tenderness of the back was present in three cases. Rigidity of the lumbar spine was associated with marked tenderness in two cases. Seven patients were weak in their lower extremities. Five patients had difficulty in controlling the bladder. All the patients had some degree of sensory loss, but the degree varied from a slight loss of sensation, of which the patient was ignorant, to complete anesthesia of the lower extremities. The tendo Achillis reflex was absent or diminished in all the cases and the patellar reflexes were intact in only one case. The cutaneous reflexes were interfered with in a few cases and helped greatly to estimate the highest level in the cord or the greatest number of roots involved by the tumor. In two cases there was evidence of edema of the lower limbs.

Effect of Germanium Dioxid on Red Blood Cells.—Müller and Iszard germanium dioxid tested on the guinea-pig, rabbit, dog and man and found that it has a decided erythropoietic action. This erythropoietic action exerts a certain periodicity as shown in all of the erythrocyte curves obtained. Relatively large doses of germanium dioxid are distinctly toxic, and from the results obtained it can be estimated that the lethal dose is about 586 mg. per kilo of body weight. This toxic action is not explainable on the basis of the accumulation of the compound in the system but is possibly due to an overstimulation of the blood forming organs. A quantitative method was devised by the authors for the determination of germanium dioxid in animal tissues and excreta, both in the presence and absence of arsenic. Germanium dioxid does not accumulate but is eliminated through the kidneys and alimentary tract. The overdose being rapidly eliminated and occurring chiefly through the agency of the kidneys, elimination by way of the alimentary tract is small.

Lumbar Puncture Discloses Latent Neurosyphilis.—Among sixty-two patients with medical complaints not pointing to syphilis were eight cases in which the disease was unrecognized, in five among these eight the central nervous system was most gravely affected. Gray urges that lumbar puncture should be done (preferably after preliminary fundus examination) on every syphilitic. If postive, it should be repeated rather frequently, at least annually, until it has been negative for one year; and thereaffter every two years to exclude recurrence.

Effect of Roentgen Ray on Pancreas Deficiency.—Petersen and Saelhof investigated the possible effect which roentgen-ray stimulation of the pancreas might have on the carbohydrate tolerance of partially depancreatized dogs. They noted a transient increase in sugar output, then an increase in carbohydrate tolerance. This latter may occur without the preliminary increase in sugar excretion. The increased tolerance may be transient or may extend over a period of several weeks after irradiation. The increased tolerance is not due to the preliminary increase in sugar elimination. When increased sugar elimination is brought about by some other irritant (turpentine abscesses) no increase in carbohydrate tolerance is later observed. The effect on the blood sugar varies. Usually a temporary increase in the blood sugar can be determined, followed by a lowering of the level that takes place in from five hours to several days after the irradiation. When evidences of acidosis exist at the time of irradiation they may diminish or disappear with the improvement in the sugar tolerance. The effect of irradiation on the pancreas is due to direct stimulation of cellular metabolic processes and not due solely to alterations primarily vascular. This stimulation is merely an example of the Arndt-Schulz observation that cell irritants in small doses stimulate metabolic processes. When the irradiation is used in too large a dose, injury to the pancreatic function is apparent in a diminution in carbohydrate tolerance. When tissues other than those containing the pancreatic rest are irradiated no effect is observed on the carbohydrate tolerance other than the primary augmentation of sugar excretion. The titer of the serum diastases, which may be altered by irradiation of the liver, seems to be without influence on the tolerance.

Archives of Dermatology and Syphilology, Chicago

April, 1922, **5**, No. 4

*Vernes Reaction: Technic and Preliminary Experiences. L. H. Cornwall, New York.—p. 434.
Therapeutic Suggestions Regarding Treatment of Affections of Hands and Feet. E. W. Ruggles, Rochester, N. Y.—p. 462.
*Comparison of Formaldehyd-Gel Reaction of Gate and Papacostas with Wassermann Reaction. V. Burke, San Francisco.—p. 469.
*Rhinoscleroma. V. Pardo-Castello and M. M. Dominguez. Havana, Cuba.—p. 480.

*Hypersensitiveness to Local Contact with Arsphenamin Producing Chronic Eczematoid Dermatitis and Asthmatic Symptoms. J. V. Klauder, Philadelphia.—p. 487.

Vernes Reaction.—The Vernes reaction is discussed in detail by Cornwall and it is compared with the Wassermann test. It would appear that, in cases of syphilis under treatment, the spinal fluid gives positive reactions with the Vernes test in about 12 per cent. more cases than with the Wassermann test. On the other hand, the series studied by Cornwall would indicate that, on a single examination of the blood of persons suffering from syphilis and under treatment, the Wassermann reaction is positive in about 19 per cent. more cases than the Vernes reaction. This brings up the point as to the relative value of the two tests and suggests the question as to whether a negative Wassermann reaction in the blood must necessarily accompany the clinical cure of syphilis. The chief value of the Vernes test lies, not in a single application to a given case, but in the graphic record secured from periodic examinations. The value of this procedure cannot be gaged by its comparison with Wassermann results, but by its application to clinical and pathologic observations.

Value of Formaldehyd-Gel Test for Syphilis.—The formaldehyd-gel test, Burke claims, is not so reliable a test for syphilis as the Wassermann test made with a cholesterinized antigen and water bath incubation, nor is it quite so reliable as the Wassermann test with an alcoholic extract antigen. The formaldehyd-gel test gives results in closer agreement with the negative than with the positive Wassermann tests. When the two tests disagree, a positive formaldehyd-gel diagnosis will be found to be correct in an undetermined percentage of cases; a negative formaldehyd-gel diagnosis will rarely be correct. The substance on which the formaldehyd-gel reaction depends is not present in the spinal fluid of syphilitic patients, or at least not in sufficient amounts to cause coagulation on the addition of formaldehyd. Suggestions are given for the interpretation of results obtained with the formaldehyd-gel test and for future research.

Rhinoscleroma in Cuba.—Pardo-Castello and Dominguez report the first case of rhinoscleroma that has occurred, so far as they know, in Cuba, in a person who had never been abroad. The microscopic examination of the tissue proved it to be a typical granuloma, with the occurrence of vacuolated cells of Mikulicz and plasma cells in hyaline degeneration, characteristic of rhinoscleroma. The bacteriologic study demonstrated the presence, in the cells, of a germ, which was recovered from the cells in pure cultures, and which, from its biologic characteristics, belonged to the group of *B. lactis-aerogenes*. Cultures of this germ produced an intense febrile reaction and inflammation when injected into guinea-pigs, but failed to reproduce rhinoscleroma. The germ did not resemble at all the bacillus described by Frisch as the etiologic agent of this disease.

Dermatitis and Asthmatic Symptoms Caused by Local Contact with Arsphenamin.—A case of chronic dermatitis and respiratory symptoms due to external contact with the arsphenamins is reported by Klauder. The patient was a physician. An erythematous scaly eruption was present with fissuring involving the index and second fingers of the right hand and index and second and third fingers of the left hand. The involved areas itched, as did also the hands and fingers on which there was no cutaneous manifestation. At times an eczematoid eruption appeared on the face. The patient said that the dermatitis might possibly be due to contact with neo-arsphenamin since he noticed the eruption was aggravated after administering this drug. His suspicions were substantiated by the observation that when opening an ampule of neo-arsphenamin and dissolving it, he frequently sneezed and coughed and was conscious of a sense of pressure and constriction in his chest. At other times a definite attack of asthma was experienced. The patient was advised not to prepare the arsphenamin for administration, to wear rubber gloves when injecting it and to exercise great care that none of the solution came in contact with his hands. He has been free of all symptoms for more than a year, since this advice was carried out, although he is administering these drugs almost daily.

Archives of Internal Medicine, Chicago

April, 1922, **29**, No. 4

*Paroxysms of Tachycardia. H. M. Marvin and P. D. White. Boston.—p. 403.

*Renal Glycosuria. D. S. Lewis, Montreal, Can.—p. 418.

*Chemical Studies of Blood and Urine of Syphilitic Patients Under Arsphenamin Treatment. C. Weiss and A. Corson, Philadelphia.—p. 428.

*Studies in Variation of Lenth of Q-R-S-T Interval. G. K. Fenn, Chicago Heights, Ill.—p. 441.

*Postoperative Pulmonary Complications. E. C. Cutler and A. M. Hunt, Boston.—p. 449.

Pathology of Cirrhosis of Liver. F. Epplen, Spokane.—p. 482.

*Antidiuretic Effect of Pituitary Extract Applied Intranasally in Case of Diabetes Insipidus. H. L. Blumgart, Boston.—p. 508.

Vital Capacity in Group of College Students. A. W. Hewlett and N. R. Jackson, San Francisco.—p. 515.

*Length of Life of Transfused Erythrocytes in Patients with Primary and Secondary Anemia. J. T. Wearn, S. Warren and O. Ames, Boston.—p. 527.

Blood Pressure and Pulse Rate Levels. T. Addis, San Francisco.—p. 539.

Paroxysms of Tachycardia.—In a series of 250 cases with cardiac symptoms or with signs of heart disease discussed by Marvin and White, there were fifteen cases of paroxysmal auricular tachycardia, seventeen cases of paroxysmal auricular fibrillation, eighteen cases of permanent auricular fibrillation, and four cases of paroxysmal flutter. One of the cases of paroxysmal flutter showed also on occasion the coarse type of paroxysmal fibrillation, and is included in both groups. The total number of patients with auricular fibrillation in this group is thirty-five, and seventeen of these showed the transient form. Eleven of the seventeen patients with paroxysmal auricular fibrillation were more than 50 years of age (eight were past 60 years). It is evident from this study that paroxysmal auricular fibrillation is a common type of paroxysms of tachycardia, and is seen in practice as frequently as paroxysmal auricular tachycardia, and is seen in practice as frequently as paroxysmal auricular tachycardia and permanent auricular fibrillation. It is found most frequently in old age, the result of cardiosclerosis; also in rheumatic and thyroid hearts, in acute pericarditis, severe acute infections, and following the use of digitalis. Paroxysms of tachycardia may occur at frequent intervals for years without incapacitating the subject and without increasing the degree of cardiac damage appreciably. Paroxysmal tachycardia of ventricular origin is very rare. Another case is added to the ten undoubted cases already reported. Electrocardiographic study is essential in the accurate diagnosis of ventricular paroxysmal tachycardia, and even with electrocardiograms the condition must be differentiated from auricular paroxysmal tachycardia with bundle branch block. Ventricular ectopic beats may occur in auricular paroxysmal tachycardia without disturbing the dominant rhythm. Rarely, alternation of the Q R S complexes of the electrocardiogram may be found in paroxysmal tachycardia. (Alternation of the radial pulse in this condition is common.)

Renal Glycosuria.—A further note is recorded by Lewis on a case reported in 1915 and studies of two other instances are presented in some detail. The first patient, after six years of observation, still presents a marked glycosuria without symptoms and with a normal amount of sugar in the blood. He is apparently in excellent health. The second is a severe case of chronic diffuse nephritis, in which a glycosuria has been practically continuous since its onset twelve months ago. It is small in amount, the largest quantity being 16 gm.; it is largely independent of the carbohydrate intake, it required three days' starvation before its disappearance, and reappeared on an intake of 30 gm. carbohydrate as green vegetables. The amount of glucose does not show any constant relation to the urinary volume. Synchronous sugar determination on blood and urine show the presence of a glycosuria with 0.068 per cent. sugar in the blood. The response to 100 gm. glucose falls within the limits of a nondiabetic case of nephritis. There are no other signs of a diabetes mellitus. The third patient, aged 74, has a marked arteriosclerosis (arteriosclerotic kidney), and was first seen on account of scurvy. The duration of the glycosuria is unknown. The glycosuria has been continuous for the past fifteen months, the usual output varying from 30 to 50 gm., and the ordinary changes in the diet had very little effect on the amount of sugar excreted. The sugar output was found to be independent of the urine volume. Synchronous studies of the blood and urine showed 2.7 per cent. sugar in the urine, with only 0.064 per cent. in the blood. The blood sugar curve following ingestion of 100 gm. glucose is somewhat atypical, but can be explained by the presence of arteriosclerosis and nephritis. There are no signs of diabetes mellitus.

Effect of Arsphenamin on Blood and Urine.—Five cases of tertiary syphilis with varying degrees of optic atrophy were studied by Weiss and Corson. The details of the chemical analyses of the blood and urine and the history of the cases are given in full.

Duration of Systole in Normal Persons.—Fenn asserts that it is possible to predict with a reasonable degree of accuracy the duration of systole in normal individuals. Clinical conditions accompanied by high blood pressure are often associated with prolongation of the Q-R-S-T interval. It is probable that this prolongation is of prognostic value, but from the data at hand at present a definite statement may not be made.

Postoperative Pulmonary Complications. — Among 1,604 cases submitted to some form of operative procedure under anesthesia, sixty-three patients developed a pulmonary complication that might be attributable to the operative intervention or to the anesthetic. There were five deaths among these sixty-three cases. Cutler and Hunt maintain that postoperative pulmonary complications in the majority of cases are due to embolism from the operative field. The result is pulmonary infarction or fatal pulmonary embolism. Anesthetists and anesthesia should not bear the blame for these complications. There is as yet no proof or evidence that chilling or acidosis plays any appreciable rôle in this field. A reduction in the number of cases that result in these complications can be had by (1) a reduction in trauma at operation; (2) accurate hemostasis; (3) the careful control of sepsis, and (4) the use of great caution in operating on patients who have demonstrable pulmonary disease. A high fluid intake and all general precautions giving assistance to the circulatory apparatus will be of definite value once such complications are established.

Antidiuretic Effect of Pituitary Extract.—Extract of the posterior lobe of the pituitary sprayed intranasally checked both the polyuria and polydipsia in Blumgart's case as effectively as hypodermic injections. All administrations of dried or aqueous extracts by mouth or rectum proved ineffectual. Histamin, whether sprayed, swallowed or injected subcutaneously, failed to modify the thirst of polyuria. Lumbar puncture, performed on two different occasions, did not lower the water or urinary output. The evidence indicates that the nasopharynx constitutes an important factor in certain diseased states, but whether absorption is accomplished by the blood stream, by the lymphatics, or by both channels, it is impossible to state.

Length of Life of Transfused Erythrocytes.—Red blood corpuscles from donors in Group IV transfused into patients in Group II with pernicious anemia and anemia secondary to nephritis, Wearn et al. found remained in the circulation longer than has been generally believed to be the case. The last of the transfused red blood cells disappeared from the circulation in from fifty-nine to 113 days, with an average of eighty-three days. No difference was noted in a series of observations in the duration of the stay of the transfused red blood corpuscles in the circulation between patients with primary anemia and secondary anemia (due to nephritis). In a single observation red blood corpuscles from a patient with pernicious anemia transfused into another patient with pernicious anemia, behaved as did the corpuscles from normal donors.

Boston Medical and Surgical Journal

April 13, 1922, **186**, No. 15

Modifications of Apparatus and Improved Technic Adaptable to Benedict Type of Respiration Apparatus. P. Roth, Battle Creek, Mich. —p. 491.

Vaginal Cesarean Section; Twelve Cases. L. E. Phaneuf, Boston.—p. 501.

Progress in Pediatrics. J. L. Morse, Boston.—p. 507.

Johns Hopkins Hospital Bulletin, Baltimore

March, 1922, **33**, No. 3731

*Relation of Suprarenal Gland to Experimentally Produced Hypotension (Shock); Protective Effect of Preliminary Anesthesia. A. R. Rich, Baltimore.—p. 79.

*Clinical and Anatomic Study of Fifty-One Cases of Repeated Cesarean Section; Healing of Cicatrix: Occurrence of Rupture Through It. T. O. Gamble, Baltimore.—p. 95.

*Acute Lobar Pneumonia and Hematogenous Puerperal Infection. R. A. Johnston and H. J. Morgan, Baltimore.—p. 106.

*Diphtheria Bacillus Carriers: Results of Reexamination of Apparently Negative Cultures. B. C. Marshall and C. G. Guthrie, Baltimore.—p. 110.

Hydrogen-Ion Concentration of Tissue Growth in Vitro. M. R. Lewis and L. D. Felton, Baltimore.—p. 112.

Relation of H-Ion Concentration to Specific Precipitation. V. R. Mason, Baltimore.—p. 116.

Relation of Suprarenal to Experimental Shock. — The experimental work reported on by Rich shows that suprarenalectomized animals, subjected to uniform intestinal manipulation before the blood pressure has begun to decline as a result of suprarenalectomy, fall into shock exactly as do normal controls—the time required for the production of shock and the character of the blood pressure curves being the same in both series. It is, therefore, concluded that disordered suprarenal function is not a factor in the production of shock. The blood pressure begins to fall several hours after suprarenalectomy and becomes progressively lower until death. The fall in blood pressure is shown to be independent of the operative trauma and begins before asthenia has appeared. This is offered in support of the idea that the suprarenals are concerned in the maintenance of the blood pressure at the normal level, and certain objections to this belief are discussed. Animals that are kept lightly anesthetized with ether, for an hour immediately before the abdomen is opened, become very resistant to the shock producing effect of intestinal manipulation. Even when subjected to severe peritoneal trauma for a period of three hours, the blood pressure shows practically no tendency to fall and sensibility is retained. In contrast, if identical intestinal manipulation is begun more promptly after anesthetization, the blood pressure invariably begins to decline progressively within an hour, and the animal soon is in complete shock. An hour's ether anesthesia preliminary to opening the abdomen has proved to be a striking protective against shock under the conditions of these experiments. Ether has a distinct tendency to hasten the onset of shock once the blood pressure has begun to decline after the abdomen is opened. Cardiac failure is not a factor in the production of shock. Failure of the vasomotor center is not a primary factor in shock. The cardio-inhibitory center is shown not only to respond to stimuli, but also to function independently during deep shock. Its failure cannot be regarded as a cause of the condition.

Repeated Cesarean Section.—The study is too detailed to be reviewed in an abstract, but some of the points on which Gamble lays emphasis are: The weak cesarean scar may be due to a single factor or to a combination of factors, the most important of which is infection. The perfection of technic in suturing the uterine incision will undoubtedly lessen the incidence of weak scars. The uterine wound should not be closed, if possible, until firm contraction of the musculature has occurred. The dictum, "once a cesarean, always a cesarean," cannot be accepted without considerable reservation. A patient who has once been subjected to a cesarean section should enter the hospital several weeks prior to the expected date of confinement, so that she may have the benefit of immediate operation should rupture occur.

Pneumococcus Causes Puerperal Infection.—The demonstration of a fixed type pneumococcus as the causative agent of a puerperal infection developing during the course of acute lobar pneumonia is unusual, and makes the case reported by Johnston and Morgan one of considerable interest to the obstetrician as well as to the internist. A primipara, aged 35, gave a history of numerous infections, and, on the whole, of rather poor health. At the onset of labor she was exposed for a short time to inclement weather. Labor was completed by forceps delivery under chloroform anesthesia. Immediately following the birth of the child an acute lobar pneumonia developed. Evidence of the lowered resistance of the patient to infection at this time was the absence of chill and leukocytosis at its onset, and particularly the existence of the septicemia with large numbers of bacteria in the blood stream (173 colonies per c.c.). Intra-uterine culture demonstrated the presence of the same organisms in the postpartum uterus. That this finding was not accidental, or due entirely to the normal oozing of blood infected with pneumococci, is clear, for a greenish mucopurulent uterine discharge developed, which contained numerous white blood cells and organisms. Furthermore, this condition persisted for several days after the disappearance of the bacteremia, and was accompanied by clinical evidence of uterine infection. Accordingly, it seems clear that this was a case of metastatic pneumococcus (Type 1) puerperal endometritis, which developed in a woman suffering from acute lobar pneumonia.

Diphtheria Bacillus Carriers.—From the results obtained by Marshall and Guthrie, it seems evident that when dealing with throat cultures from diphtheria carriers the customary laboratory practice of making single or repeated examinations within the first twenty-four hours may not yield all of the information available and may lead to erroneous conclusions. The error from this source alone, as judged from the results in 1,125 cases in which a second examination was made after forty-eight hours is about 9.5 per cent. It is recommended, therefore, that in the study of diphtheria bacillus carriers, either healthy or convalescent, all cultures which are negative up to twenty-four hours be reexamined after another day in the incubator.

Nebraska State Medical Journal, Norfolk

April, 1922, **7**, No. 4

Modern Medical Treatment of Gastric Ulcer. F. Conlin, Omaha.—p. 113.
Conservation of Hearing. C. G. Baird, Beatrice.—p. 117.
Principles of Dream Analysis. M. J. Breuer, Lincoln.—p. 121.
Urology in Relation to Surgical Diagnosis. J. S. Welch, Lincoln.—p. 126.
Anal Fissure and Its Treatment. L. E. Moon, Omaha.—p. 131.
Conservative Ovarian Surgery. C. H. Breuer, Lincoln.—p. 133.
Is Country Doctor Passing? G. O. Remy, Ainsworth.—p. 137.
Angina Abdominalis: Case Report. J. E. Meyer, Columbus.—p. 140.

Porto Rico Medical Association Bulletin, San Juan

Feb. 28, 1922, **16**, No. 135

*Renal Tuberculosis: Value of Nephrectomy. P. Perea Fajardo.—p. 1.
Case of Epidemic Cerebral Meningitis. R. C. R. Nazario.—p. 11.
*Antimony Treatment of Schistosomiasis. H. F. Carasquillo.—p. 15.
*Differential Diagnosis of Pyrexias Common in Porto Rico. A. Torregrosa.—p. 17. Conc'n.

Renal Tuberculosis.—Perea Fajardo reports recovery in five of six cases after removal of the tuberculous kidney. In one patient the cystitis still persists a year later, but much attenuated. In the six cases cited, slight occasional hematuria was the first symptom in one case. In other cases, pain in the left costal arch region for six months or pain in the right iliolumbar region for nearly two years, or pain in the left lumbar region for four years were initial symptoms. One patient had colic pains in the left side for a few months, with occasional anuria, terminating with expulsion of large quantities of purulent urine. All the patients had frequent and irresistible desire to urinate.

Schistosomiasis.—Carrasquillo has had twelve cases of Manson schistosomiasis in Porto Rico. Six patients were given systematic treatment with antimony and potassium tartrate with complete success in five. No traces of the parasite could be found in the stools up to eighteen months after the treatment, even though one woman had been infested for several years. He regards this drug as a specific for this schistosoma.

Tropical Pyrexias Common in Porto Rico.—Torregrosa brings to a conclusion his study of this subject. The various instalments have been summarized in these columns as they appeared. He has classified the cyclic intermittent, the continuous remittent and the irregular fevers, describing the modification of the clinical picture when any one of these tropical fevers is associated with syphilis, typhoid, leukemia, helminthiasis, etc. He reiterates, "No branch of tropical medicine is so important as pyretology, and nothing is so confusing as the differential diagnosis. The entire array of regional and cosmopolitan diseases liable to induce fever have to be kept in mind, and even the laboratory may explain only part of the clinical picture. . . . The physician in the tropics has to proceed by systematic exclusion and by intuition and tentative treatment."

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 1, 1922, **1**, No. 3196

*Nature and Significance of Heart Symptoms. J. Mackenzie.—p. 505.
*Value of Complement Fixation Test in Exclusion of Active Pulmonary Tuberculosis. A. L. Punch and A. H. Gosse.—p. 509.
Evidence of Pancreatic Disorder in Rickets. E. C. Dodds.—p. 511.
Postanesthetic Complications. G. F. R. Smith.—p. 513.
Diagnostic Value of Plantar Extensor Response. E. L. Fox.—p. 513.
Lethargic Encephalitis Affecting Nuclei of Midbrain in an Unusual Manner. W. Calwell.—p. 514.
Antiseptic Properties of Cyanine Dyes. C. H. Browning, J. B. Cohen and R. Gulbransen.—p. 514.
Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 515.
Slipping Rib. C. J. Marshall —p. 516.
Slipping Rib. H. K. V. Soltau.—p. 516.
Primary Colectomy for Acute Intestinal Obstruction in Patient Aged 70.—p. 516.

Nature of Heart Symptoms.—A summary of the difference in the heart's contraction arising in the conducting and contracting systems is given by Mackenzie. (1) The stimulus for the normal rhythm of the heart arises in tissues specially evolved for the purpose. The stimulus in auricular fibrillation arises in tissue specially evolved for contraction, the stimulus production being merely an incident in the contraction. (2) There is remarkable difference between the rhythms which arise in the conducting and contracting systems of the heart, due to the difference in the stimuli. These differences are shown especially in the response of the ventricle. The ventricular systole in the normal rhythm, as well as in those rhythms arising in any part of the conducting system, is complete and effective. The ventricular systole, when the stimulus arises in the muscle cells of the auricle, is often partial and ineffective, and when it arises in the muscle cells of the ventricle it is always ineffective. When the contraction starts in the muscle cells of the auricle, as in auricular fibrillation, the stimulus which arises is much more sensitive to agents which favor or retard its passage to the ventricle. The effect of digitalis is strikingly different, it having a far greater effect of digitalis is strikingly different, it having a far greater effect on auricular fibrillation and flutter and on the idio-ventricular rhythm than on any rhythm arising in the conducting system.

Value of Complement Fixation in Tuberculosis.—In approximately 1,100 pulmonary cases or controls Punch and Gosse have tried out their complement fixation test for pulmonary tuberculosis. Of these about 260 were definite cases of pulmonary tuberculosis, the criterion of a definite case being the undoubted presence of tubercle bacilli in the sputum. All save five of these gave a positive result. Of the five three subsequently gave a positive result. The authors believe that a negative result may occasionally be obtained in very acute cases of pulmonary tuberculosis due to the shortness of the interval between the invasion of the body by the tubercle bacillus and the onset of symptoms. Except in these rare cases the results of the test would suggest that a positive reaction is obtained by the time the infection gives rise to symptoms. One hundred and forty presumably healthy people or persons suffering from nontuberculous diseases were taken as negative controls. Three gave a positive result. In one case definite evidence of enlarged, presumably tuberculous, glands in the neck was subsequently discovered; in another, on more careful examination, it was impossible definitely to exclude a tuberculous lesion in the lungs; while in the third no evidence of tuberculosis could be discovered. Of the remaining 700 cases about 220 gave a positive result. These were doubtful cases clinically, so that no definite conclusion could be drawn from them. All that could be said at the time without later investigation was that there seemed to be a reasonable correspondence between the clinical condition on the one hand and the negative or positive result on the other. In many of the cases which gave a positive result the accuracy of the test has been proved by the finding at a later date of tubercle bacilli for the first time in the sputum.

Indian Journal of Medical Research, Calcutta

July, 1921, **9**, No. 1

Cercaria of Schistosomum Spindalis (Montgomery). M. B. Soparkar. —p. 1.
Some Furcocercous Cercariae from Bombay. M. B. Soparkar.—p. 23.
*Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. X. Betanaphthol. J. F. Caius and K. S. Mhaskar.—p. 33.
Production of Bacillus Influenzae Vaccine on Large Scale. R. H. Malone.—p. 56.
Large Scale Production of Pneumococcus Vaccine. R. H. Malone.—p. 63.
Bacteriologic and Laboratory Technic. Section II. W. F. Harvey.—p. 66.
Some Cases of Myiasis in India and Persia, with Description of Larvae Causing Lesions. J. A. Sinton.—p. 132.
Some Bursate Nematodes from Indian and African Elephants. C. Lane.—p. 163.
*Physiologic Changes at High Altitudes and Their Relation to Mountain Sickness. R. W. G. Hingston.—p. 173.

Betanaphthol a Powerful Vermicide.—Caius and Mhaskar found betanaphthol to be a powerful vermicide acting both on ankylostomes and necators. Up to a dose of 40 grains, the advantage lies with a single portion treatment; beyond 40 grains the drug may indifferently be given in one, two or three portions. In sufficiently large doses betanaphthol is an effective ascaricide. Up to 60 grains dosage betanaphthol is a very safe drug. Betanaphthol has marked vermifugal properties and no after-purge is required in the treatment.

High Altitudes Cause Formation of More Erythrocytes.—A person who ascends from a low altitude to a high altitude is able gradually to acclimatize himself to the requirements of the greater height. His method of acclimatization is by the development of an increased number of red blood corpuscles in order to provide the body with additional oxygen carriers to deal with the rarefied air. The number of corpuscles increases in proportion to the altitude, and when a sufficient number has been developed in accordance with the altitude then acclimatization is complete. If the ascent is gradual the manufacture of corpuscles keeps pace with the requirements of the altitude and no inconvenience is felt. If, on the other hand, the ascent is rapid, then a sufficient number of corpuscles has not time to develop; the blood is relatively deficient and the person suffers from mountain sickness. If he remains for an adequate time at the altitude he has reached, he will gradually become acclimatized and his distress will disappear. In certain persons the development of corpuscles is delayed and their sufferings as a consequence are acute and prolonged. People who live permanently at a high altitude have a richer blood supply than those who inhabit low altitudes but differ in no other respect. The number of corpuscles in the blood of a dweller at low altitudes can increase until it reaches ultimately the number normal to the dwellers at high altitudes. Returning to sea level, the number of corpuscles will diminish until the normal for the altitude is restored.

Medical Journal of South Africa, Johannesburg

February, 1922, **17**, No. 7

Trophic Changes in Syringomyelia. F. H. Kooy.—p. 133.
*Respiratory Acceleration Phenomenon. T. Wassenaar.—p. 138.
Estimation of Sugar in Blood. A. D. Stammers.—p. 139.
Case of Acromegaly with Ocular Symptoms and Roentgen-Ray Findings. —p. 141.
Origin and Development of Johannesburg Hospital and Its Branches. R. Daly.—p. 142.

Respiratory Acceleration Phenomenon.—During the course of some experiments, in which use was being made of decerebrate preparations Wassenaar noticed that compression of the thorax more or less in the heart region caused an acceleration of the respiration. The compression was performed either by gripping the thorax from the ventral side between the thumb and the other fingers and then squeezing softly, or by pressing with the flat hand on the upper side of the chest. The reflex nature of the acceleration phenomenon was proved in various ways.

Archives Franco-Belges de Chirurgie, Brussels

January, 1922, **25**, No. 4

*Cancer of the Rectum. Desmarest.—p. 293.
*Lymph Currents in the Abdomen. P. Descomps and Turnesco.—p. 298.
Occlusion of Intestine by Meckel's Diverticulum. E. Delannoy.—p. 320.
*Gastrostomy in Otorhinolaryngology. Berard and Sargnon.—p. 329.
*Cysts in the Bones. A. Mouchet and P. Le Gac.—p. 337.
Operative Indications in Acute Appendicitis. G. Leclerc.—p. 344.
*Opening of Parotid Abscess into Ear. M. Ferron.—p. 352.
*Metal Bands for Fractured Bone. A. Lambotte.—p. 363.
*Reconstruction of the Astragalus. A. Lambotte.—p. 369.
Technic After Astragalectomy. J. Moreau.—p. 371.
Fractures of the Astragalus. Van der Elst.—p. 383.

Cancer of Rectum.—Desmarest reports 43.4 per cent. of satisfactory results in 23 cases of cancer of the rectum removed after amputation of the coccyx. The interval since has been from five to six and a half years in 4 cases, and over four in 3 others, and from three to four years in 3 others, without signs of recurrence. If the cancer is adherent, it is already too late to ward off recurrence unless the adhesions are merely of inflammatory origin. In such cases his experience has demonstrated the advantages of first making an iliac anus and disinfecting the rectum; then, from ten to fifteen days later, applying radium, and, three weeks later, removing the site of the cancer by a combined abdominal-perineal technic. If the cancer is still movable, he makes first a temporary fistula into the upper portion of the iliopelvic colon; then applies radium as above, and three weeks later amputates by the coccyx-perineum route, saving the sphincter and drawing the colon down to it, concluding, later, by closing the temporary artificial anus. In men, the abdominal-perineal operation is the only feasible one, and no attempt should be made to save the sphincter. In any event, unless the raw surface of the colon bleeds when it is cut, it is doomed to speedy gangrene when drawn down.

The Abdominal Lymph Currents. — Eight illustrations accompany this study of the main lymphatic currents, their convergence and their satellite ganglia.

Gastrostomy in Otorhinolaryngology.—Berard and Sargnon refer to emergency cases of stenosis of the esophagus or lower pharynx in which a fistula into the stomach may be necessary to feed the patient, either to ward off starvation or to ward off danger of aspiration of food into the air passages. It may be indispensable as a preliminary to operations on the esophagus, throat or mouth. Their experience includes fifty cases, published in 1914. There has only been one death in their series since. With the Fontan technic and local anesthesia, the prognosis of the gastrostomy is benign and the results satisfactory.

Cysts in Bones.—Mouchet and Le Gac protest against the traumatic origin which nearly all the patients claim. In their cases, radiography, even two days after the trauma, showed the fully developed cyst; the trauma merely called attention to it. Under roentgenoscopy it may be seen that the trauma has a direct curative action: The cracking of the wall of the cyst allows the fluid to escape, and the periosteum starts the repair of the bone. Hence immobilization is all that is necessary when the cyst has been cracked. On the other hand, if the cyst wall is intact, and the bone is one of minor importance, such as the fibula, then immobilization alone may be all that is needed. But with the femur or the tibia, the cyst should be trephined and scraped out, but without attempting to fill up the cavity or drain it. Resection should never be done without histologic examination; the cyst once recognized, conservative treatment must be the rule for these benign cysts which are probably merely of dystrophic origin. They are usually near the knee or remote from the elbow, and the humerus is the favorite site.

Abscess in Parotid Region Opening Into the Ear.—Ferron reports four cases, all encountered within a few months. Cope has commented on the fatal termination of three in seven cases of acute parotitis with necrosis, saying that the inadequacy of the incision was evidently a factor in the fatal outcome. Ferron operated through an incision parallel to the anterior margin of the sternocleidomastoid, from the ear or retro-auricular groove to below the angle of the jaw. The vast wound thus opened up healed smoothly after curetting, with a comparatively small scar.

Metal Bands for Fractured Bones.—Lambotte comments that the Parham metal bands are not solid enough to stand much strain, while the instruments used are heavy and awkward. He thinks he has overcome these drawbacks by the use of a little U buckle with two slits through which the end of the metal band is slipped. The ends of the U are then folded down over the end of the band as it is turned back when the *cerclage* is complete. The end of the band is thus held firm with this supplementary buckle, and it can stand a much heavier strain. He prefers screws for fastening a metal plate to the bone unless the bone is abnormally porous. In this latter case, the metal bands are indispensable. In the discussion that followed, several surgeons reported the loosening of the Parham bands, or rupture of a band at the point where it was bent. They said that this probably could not have occurred with Lambotte's supplementary sliding buckle. Fourteen illustrations accompanying the article.

The Ankle After Astragalectomy.—Moreau gives minute directions for reconstructing the ankle after astragalectomy, warning of several points to be avoided.

Archives des Maladies du Cœur, etc., Paris

February, 1922, **15**, No. 2

Palography: Photographic Record of the Pulse. Gil-Casares (Santiago).—p. 49.

Physostigmin in Cardiac Therapy. J. Minet, R. Legrand and Prelot.—p. 60.

Bulletin de l'Académie de Médecine, Paris

March 14, 1922. **87**, No. 11

Senescence and Endocrinology. E. Gley.—p. 285.
Home for Nursing Mothers. Committee Report.—p. 303.
*Meningitis from Helminthiasis. G. Guillain and C. Gardin.—p. 308.
Blood Pressure and Tension of the Arteries. E. Doumer.—p. 316.
*Milk of Tuberculous Women. J. Chambrelent and H. Vallée.—p. 319.
*Acetonemia, Pancreatitis and Syphilis. A. Remond.—p. 321.

Helminth Meningitis.—Guillain and Gardin report the case of a young woman with headache and vomiting for five days. She ascribed these symptoms to a tapeworm discovered six months before. As she was pregnant at the time, its expulsion had been postponed and she had been delivered of a viable child at term. The symptoms continued to progress until the clinical picture of tuberculous meningitis was complete by the sixteenth day. Then under male fern, plus calomel, the tenia solium was expelled, and recovery was rapid and complete. The reactions in the spinal fluid were all of the type characteristic of tuberculous meningitis except for the absence of tubercle bacilli. They compare with this case a number of other cases of irritation of the meninges from helminth toxins, and suggest that this may be the explanation of certain meningeal conditions of hitherto obscure origin.

Milk of Tuberculous Women.—Tubercle bacilli were found in the milk of 13 per cent. of fifteen lactating tuberculous women. In four others, with sputum swarming with tubercle bacilli, none could be found in the milk, even on inoculation of guinea-pigs. None of the women had any lesions in the breasts.

Acetonemia in Children.—Remond reports a further series of 5 cases of acetonemia in children, with headache, intolerance of the stomach, chilliness and syncopal condition, and pure mucus passed by the anus. The head of the pancreas was tender in all, and the acetone surpassed 1.5 gm. per liter of urine. The latter contained notable proportions of diacetic acid. In a sixth case the child died in one of the attacks. He gave alkaline treatment to all, but in 2 cases the phenomena promptly subsided under injection of pancreas extract. These 2 children (7 and 9) complained that the injection hurt; but that this was far preferable to the severe headache they had been having. The pain subsided in half an hour after the injection. These experiences have convinced him that acetonemia is the result of acute insufficiency of the pancreas. He calls attention in conclusion to the significant fact that inherited syphilis was present in every case, direct in 3 cases, and from a preceding generation in the others. There were no manifestations of the syphilis apparent, but the history was beyond question. There is thus reason to assume, he says, that acetonemia and acidosis in children are the result of insufficiency of the pancreas, and that this is a manifestation of inherited syphilis.

Bulletin Médical, Paris

March 18, 1922, **36**, No. 12

*Lead Poisoning. F. Heim, E. Agasse-Lafont and A. Feil.—p. 223.
*Diagnostic Intratracheal Injections. Ichok.—p. 226.

Lead Poisoning.—Heim and his co-workers describe the two findings which warn of injury from lead even before the plumbism is well established. The number of leukocytes is usually normal, but about 40 per cent. may be mononuclears. The erythrocyte figure is also normal in the presaturnism phase. When the workmen are once saturated with lead, there is pronounced anemia, which is very slow in receding, even when there is no further contact with lead. The erythrocytes may show a basophil plasma or basophilic granules, and the latter is the earliest and most constant sign of injury from lead. They have found it in 50 per cent. of all persons exposed to lead poisoning, regardless of whether they showed any signs of plumbism or not. This basophilic granulation is not found outside of lead poisoning except, inconstantly, in very severe anemia or certain grave intoxications. The granules show as fine black spots, some as fine as dust, others a little larger, scattered irregularly through the protoplasm. The other pathognomonic finding is the presence of lead in the urine, but the technic required to detect it is tedious, even with electrolysis and the colorimeter. They never found any lead in 100 normal urines tested, while it is constantly present in lead poisoning, as a large proportion of the lead is eliminated through the kidneys. The spinal puncture fluid may also show the presence of lead; in one of their cases this first explained a puzzling brain affection.

Diagnostic Intratracheal Injections.—Ichok injected 5 c.c. of a 1 per thousand solution of methylene blue into the trachea of rabbits, through the skin. Then the urine dripping from a retention catheter in the bladder showed the stain in from fifteen to twenty-five minutes in normal animals, but the interval was much longer when the lungs or pleura were diseased. He thinks this method might have diagnostic value in man to trace the course upward or downward of disease of the respiratory apparatus. Recent literature on intratracheal medication and vaccination is compared with this research. It was done in Besredka's laboratory.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 3, 1922, **46**, No. 8

*Transmission of Sounds in Lung. J. Génévrier and A. Robin.—p. 383.
*Radiotherapy in Syringomyelia. A. Coyon, J. Lhermitte and J. Beaujard.—p. 387.
Diabetes with Abolished Reflexes. Pinard and Mendelsohn.—p. 397.
*Treatment of Vascular Spasm. R. Morichau-Beauchant.—p. 404.
Parkinsonian Symptoms in Retrospective Diagnosis. Roger.—p. 409.
*Massive Coagulation of Spinal Fluid. E. de Massary and J. Girard.—p. 413. Idem. L. Boidin and J. de Massary.—p. 418.

Transmission of Sounds in Lung.—Génévrier analyzes the mechanism of the vertical and horizontal transmission of sound in pathologic lungs, and interpretation of the findings.

Radiotherapy of Syringomyelia.—The case described here brings the histologic confirmation of the retrogression of the gliomatous form of syringomyelia under systematic roentgen exposures of the upper spine, a series of twenty-six exposures and a second series of four, the dose about 3 H units; distance 15 cm. The young man's earning capacity was restored when he was on the point of becoming helpless. Thirteen years later he developed pulmonary tuberculosis, and necropsy revealed the retrogression of the gliomas, and obliteration of the cavities in the exposed portion of the spinal cord, while the gliomatous tendency in the nonexposed portions had continued a slowly progressive course. Nothing could be discovered to indicate injury of meninges or nervous elements from the roentgen rays. Guinea-pig spinal cords can bear up to 10 or 12 H without harm, and the therapeutic doses never surpassed 4 H. In conclusion a second case of syringomyelia is described in which the disease has been completely arrested in the fifteen months since treatment was begun. Once every eight days the cervicodorsal region is given two cross-fire exposures of 2.5 H units each. The patient is now at the twelfth sitting of a second series of eighteen.

Sodium Citrate Treatment of Arteritis and Vascular Spasm.—Three cases are described in which the ischemia from obliterating arteritis or vascular spasm, or both, was relieved and a dangerous condition remedied by 3 or 4 gm. of sodium citrate taken by the mouth over long periods, and resumed from time to time. Beauchant theorizes to explain the mechanism of the prompt and durable benefit, and suggests that by thus relieving the vascular spasm, improvement might be realized in many conditions in which this is more or less of a factor, such as angina pectoris, Raynaud's disease, and permanent high blood pressure and the brain disturbances resulting therefrom.

Meningitis with Coagulation of Spinal Fluid.—The spinal meningitis in the two cases described was accompanied by spontaneous and massive coagulation of the spinal fluid. The receptacle could be turned upside down for ten minutes without a drop escaping. The communication between the spinal and the cerebral fluid was unhampered in one of the cases, and obstructed in the other.

Coagulation of Spinal Fluid.—In Boidin's case the acute meningomyelitis had developed consecutive to erysipelas, and the spinal fluid coagulated solid when drawn. Streptococci, staphylococci and the pyocyaneus were cultivated from the pus and spinal fluid.

Encéphale, Paris

February, 1922, **17**, No. 2

*Anatomic Conditions for Binocular Vision. M. Minkowski.—p. 65.
Mental Prophylaxis in the Army. Chavigny.—p. 97.
*Pathogenesis of Epileptic Seizure. A. Antheaume and L. Trepsat.—p. 103.
Mental Confusion of Malarial Origin. C. Papastratigakis.—p. 105.
*Pathogenesis of Certain Psychoses. E. Dupré and C. L. Trepsat.—p. 109. Conc'n.

Anatomic Conditions for Binocular Vision.—Minkowski gives nine plates of photomicrograms of the central optic tract in man and animals, and seeks to interpret the findings.

Pathogenesis of Epileptic Seizures.—Antheaume and Trepsat injected rabbits with urine and spinal fluid from an epileptic but no effect was apparent. Injection of blood serum, however, induced violent convulsions, soon followed by death, in five or six rabbits. The amount of the epileptic's serum injected was 0.5 c.c. This amount of normal serum induced only a mild reaction for a few seconds.

Psychanalysis of Certain Psychoses.—This long article presents arguments to confirm that suppressed ideas and emotions play a large part in the development of certain grave psychoses. The sequence of events is shown clearly in some typical cases reported.

Paris Médical

March 18, 1922, **12**, No. 11

Dermatology in 1922. Milian and Brodier.—p. 221.
Superficial Cerebriform Hyperplasia of Tongue. L. Brocq.—p. 224.
Transmission to Man of Cat Sarcoptes Scabies. G. Thibierge.—p. 229.
*Precancer Skin Affections. Gougerot and Rupp.—p. 234.
Carbon Dioxid Snow in Dermatology. L. Lortat-Jacob.—p. 237.

Precursor of Cancer.—Gougerot describes a case of an erythematosquamous dermatosis with hyperkeratosis of the palms and soles and latent cancer of the tongue.

Presse Médicale, Paris

March 15, 1922, **30**, No. 21

*Calcium Chlorid in Treatment of Serositis. L. Blum.—p. 221.
Azotemia and Acidosis in Mental Confusion. R. Targowla.—p. 225.

Calcium Chlorid in Treatment of Serositis.—Blum has found restriction of salt plus administration of calcium chlorid an effectual means of influencing inflammatory affections of serous membranes. He describes several cases of pleurisy with effusion, and peritonitis, the charts showing how dropping salt from the diet reduced the fever and sometimes the effusion, while this effect was magnified by the calcium chlorid. The sodium is the noxious element. The calcium crowds out the sodium, and the latter is eliminated, and with it the fluid pathologically collected, wherever it may be. The sodium maintains the inflammatory lesion, he explains, and the calcium crowds it out here, and the inflammation is checked. This occurred so regularly in his tuberculous cases that, when benefit was not soon apparent, he sought for impeding complications or other reason. There do not seem to be any untoward effects from this treatment; the longest interval since has been four months. The rapid absorption of the effusion warded off adhesions. "By thus utilizing the action of ions on biologic phenomena we can modify the soil at will, and obtain salutary reactions." He gives large doses of the calcium chlorid in acute cases, up to 15 gm. of the powder in twenty-four hours, repeating the next day, or only half this dose if the fever drops, and then suspending entirely. If the fever keeps up, he increases to 22 gm. for two or three days. In subacute and chronic cases he begins with two days of abstention from salt. It was never necessary to restrict intake of fluid. As the powder is so hygroscopic, he prefers to give the calcium chlorid in fluid form: 30 gm. each of dry calcium chlorid and soluble starch; 20 gm. of water, and lemon syrup Q. S. to 100 gm. Ten teaspoonfuls of this are equivalent to 15 gm. of the dry calcium chlorid.

March 22, 1922, **30**, No. 23

*First Clinical Signs of Syphilitic Chancre. J. Lacassagne.—p. 245.
*Treatment of Paraplegia from Pott's Disease. J. Calvé.—p. 246.

First Signs of Syphilitic Chancre.—In six cases in which the first appearance of a chancre on the genital mucosa was detected, there was no papule, no vesicle nor hard nodule. All that was evident was a round or oval erosion, without definite edges, not sensitive even to the touch of an instrument, but oozing a serous dew in which spirochetes were found. The erosion in the five men was in the retroglandular sulcus. Three were medical men, and contagion dated from twenty-three, twenty-five and thirty days.

Treatment of Paraplegia from Pott's Disease.—Calvé works a curved trocar sound through the conjugate foramen into the abscess in front of the spinal cord, and then aspirates. He has applied this method ten times on 6 patients, and the results have been very encouraging, as he describes in detail, with illustrations of the technic. Catheterization through the conjugate foramen in this way gave 2 cures and 1 considerable improvement in 3 progressive paraplegia cases. In the 3 others the paraplegia was of such long standing that there was no hope of improvement.

March 25, 1922, **30**, No. 24

*Anaphylactic Phenomena in Gout. A. Chauffard.—p. 253.
Variety of Imponderables in Infant Feeding. H. Godlewski.—p. 256.
Present Status of Sodium Citrate in Treatment of Vascular Disease. L. Cheinisse.—p. 258.

Gout as a Local Anaphylactic Process.—Chauffard says that Grigaut's modification of the Folin-Denis method has shown that in normal conditions the blood never contains over 4 or 5 cg. of uric acid per liter. In his 27 cases of acute or chronic gout the average was 9.4 cg. of uric acid and 2.25 cg. of cholesterin in the blood serum, while the Ambard ureosecretory index was always high. In 8 of 9 dogs tested on various diets, the uric acid content of the blood in the hepatic vein was less than in blood from the portal vein. The difference ranged from 20 to 53 per cent., with an average of 33. The highest figures were obtained in the dogs fed on liver and spleen, both rich in uric acid. In a group of 3 dogs, given no food, or only milk, the uric acid content was the same in both veins. When the liver becomes unable to sort out and retain the uric acid in this way, the exogenous uric acid, accumulating in the blood, explains the hereditary tendency and the early development of gout when nothing in the individual's mode of life seems to invite it. The uric acid thus accumulating in the system impregnates the tissues besides being cast off in the urine and, as by a vicarious mode of elimination, settling in the joints. A course of thermal mineral waters mobilizes the uric acid impregnating the tissues. It passes into the blood and is then cast off in the urine. A month or two after the course, the hyperuricacidemia was always found much reduced. The erythrocytes in 5 gouty subjects tested contained nearly twice as much uric acid as in the normal—a manifestation of the general impregnation of the tissues with uric acid. The uric acid content of ascitic and pleural effusions parallels that of the blood, but the cerebrospinal fluid contains only minute quantities. Uric acid thus behaves differently from urea: it is less diffusible than the latter.

The liver seems to be responsible likewise for the high cholesterin content of the blood serum in gout. The local deposits of cholesterin, when it is in excess in the blood, are responsible not only for xanthelasma and white patches on the retina but are also a factor in production of gallstones. He has found cholesterin in tophi; in one case it formed 8.3 per thousand and uric acid 2.9 per thousand of the tophi in the fingers. No cholesterin was found in the joint urate deposits in this case. In another case the tophus in the heel yielded 21.3 per thousand cholesterin and 85.8 per thousand uric acid. The gouty incrustation in a joint is pure white, while the yellowish tint of the tophus is sometimes perceptible through the skin.

The excessive uric acid content renders precarious the colloidal balance of the blood serum. Any slight cause then is liable to upset this unstable balance, chilling from dampness, errors in diet, trauma of a joint, especially of the big toe from fatigue or a tight shoe. Any of these causes is liable to sensitize the gouty subject so that a glass of heavy wine or other disturbing cause will upset the colloidal balance, and then the acute attack follows. The latent sensitization, the provocative cause and the sudden shock at the point where the uric acid has crystallized—these are the three phases of gout.

Schweizerische medizinische Wochenschrift, Basel

March 9, 1922, **52**, No. 10

*Nervous Disturbances with Heart Disease. A. Jaquet.—p. 245.
Hemorrhagic Purpura in Chicken-Pox. W. Hoffmann.—p. 250.
Duplication of Common Iliac Artery. H. Kobelt.—p. 252.
Efficacy of Ammonium Carbonate in Erythema Nodosum. R. Ammann.—p. 254.

Nervous and Mental Disturbances in Heart Disease.—Jaquet mentions, among others, headache, inability to sleep; the patient cannot find any comfortable place in bed or his cold feet keep him awake even with a hot water bottle. A brief tendency to dizziness and syncope is common, even in the young. A sudden transient inability to move hands or feet has also been observed, but it lasts only a few minutes. Lack of attention, a change in character, and actual psychoses are not rare. He warns that the physician may be responsible for them, by his heedless use of the terms "heart failure" "calcification of the arteries," etc., thus frightening the patient. Pleuropericarditis in one woman had left cicatricial adhesions which were mistaken for grave organic disease, and the patient was warned to beware of all efforts or heart failure might result. She stayed in bed for nine months, not lifting a finger, before she could be convinced that she was not in grave danger. Then she got up and resumed an active life. Nervous dread and depression interfere with the action of heart tonics. Often, in heart disease, psychotherapy is the main thing. It frequently happens that a stay in a sanatorium is of great benefit. The patient loses his dread and restlessness when he knows that a physician is at hand day and night. This frequently tranquillizes permanently. In conclusion Jaquet warns against medicinal intoxication; he witnessed in two cases the development of a psychosis after the therapeutic administration of caffein.

Annali d'Igiene, Rome

January, 1922, **32**, No. 1

*Bacteriologic Research on Influenza. B. Gosio et al.—p. 1.
*Serotherapy for Influenza. B. Gosio.—p. 58. Idem. M. Ghiron.—p. 65.
*Bacterial Symbiosis in Influenza. P. Caldarola.—p. 74.
*Pathogenesis and Treatment of Influenza. B. Gosio.—p. 82.

Serotherapy of Influenza.—Gosio is chief of the bacteriologic laboratory of the public health service of Italy, and for three years he has been studying Pfeiffer's bacillus in relation to influenza, and has become convinced that other micro-organisms have been mistaken for it. This and its rapid disappearance from the invaded region explain the way in which it has been discredited in the etiology of influenza. He and his co-workers describe an improved culture medium for it, and emphasize the peculiar toxigenic power of the true Pfeiffer bacillus. It is extremely toxic in itself, and it has an intense affinity for the leukocytes. He has been successful with an antiserum made with it, and Caldarola has succeeded in reproducing in animals a typical pneumonia by the symbiosis of the Pfeiffer bacillus and the hemolytic streptococcus, when neither alone induces appreciable symptoms. The presence of the true Pfeiffer bacillus in symbiosis with other micro-organisms is liable to confer an unprecedented malignant character on them. The Pfeiffer bacillus, Gosio states, is never found in the blood stream, adding, "Its curious, aristocratic sensitivity in respect to certain kinds of blood and certain species of micro-organisms suggests the possibility of prophylaxis by utilizing antagonistic bacteria."

Pediatria, Naples

March 1, 1922, **30**, No. 5

*Tuberculous Antigens in Cerebrospinal Fluid. I. Nasso.—p. 193.
*Atypical Meningitis in Young Children. G. Squarti.—p. 198.
Present Status of Puncture of the Brain. R. Vaglio.—p. 217.

Tuberculous Antigens in Spinal Fluid.—Nasso relates that of the 26 publications on the own urine reaction, according to Wildbolz, 17 ascribe differential value to it, while in 9 the verdict is unfavorable. Nasso's own experience with it in 53 children confirmed its importance as a test for active tuberculosis in children. He has been applying a similar intradermal test with cerebrospinal fluid, condensed to one tenth, in tuberculous meningitis. There was an intense reaction in all of the 6 children with tuberculous meningitis, and in one with miliary tuberculosis. The own urine reaction was positive likewise, while the tuberculin skin test was positive in only 2 in the 5 in this group that were tested. The intradermal test with 1:1,000 tuberculin was positive in 5. The age ranged from 10 months to 14 years. The reaction to the cerebrospinal fluid injection thus seems to be pathognomonic for tuberculous meningitis or miliary tuberculosis. The response was negative in the one case of tuberculous glands tested.

Atypical Epidemic Meningitis.—In twelve cases reported by Squarti in children at the Rome clinic, the mortality was over 58 per cent., and in four cases the course of the disease was atypical. All of the children were under 3. The disease may occur in fulminating form, and the sudden death may have medicolegal importance. Or the onset may be hyperacute, with a prolonged milder course. There is also a pseudotyphoid form, a chronic form with cachexia, and a walled-off form, an intermittent, an abortive, and a purpuric-septicemic form, and a walking form which may disappear without leaving a trace, or it may prove fatal after a series of exacerbations. In infants the disease may be accompanied by tetany, by convulsions, or generalized hyperesthesia. Or there may be paresis instead of rigidity of the muscles of the neck. There is also an ephemeral, masked form, the symptoms variable and fleeting. In one of the four atypical cases described in detail, a child of 2½ was convalescing from typhoid when the meningitis developed, and both the typhoid bacillus and the meningococcus were found in the spinal fluid.

March 15, 1922, **30**, No. 6

*Neo-Arsphenamin in Ulcerative Stomatitis. R. Spanò.—p. **241.**
*Thymic Deaths in Inherited Syphilis. G. Battino.—p. 248.
Tryptophan in Milk in Relation to Age of Milk. C. Boccadoro.—p. 257.

Arsphenamin Treatment of Vincent's Angina. — Spanò reports all cured of fourteen children given neo-arsphenamin in treatment of ulcerative stomatitis of the Vincent type. Three or four intravenous injections were made, at two or three day intervals, the doses ranging from 5 to 10 cg. according to the age of the child. The cure was complete in from six to ten days except in one girl of 7 who had been given four injections on alternate days, and the cure required twelve days.

Thymus Death.—Battino reports the death of two children in one family for which nothing but the extra large thymus could be incriminated. The parents were asthenic and closely related, and there had been several abortions. The boy of 4 died suddenly during the night. The girl of 6 had eaten heartily at noon and again an hour or two later. Walking home, she fell suddenly lifeless, without laryngospasm or cyanosis of the face. Comparison with similar cases on record suggests that exaggerated gastro-intestinal pressure on the diaphragm may entail congestion in the thymus, and the nerves in the thymus may by reflex action arrest the heart. Mouriquand has reported a case in which treatment as for syphilis was followed by return of the thymus to normal size.

Policlinico, Rome

Feb. 27, 1922, **29**, No. 9

The Basal Metabolism. A. Filippini.—p. 281.
*Complications of Inguinal Herniotomy. F. Napoletano.—p. 289.
*Nervous Manifestations of Helminthiasis. V. Grifi.—p. 292.
Local Prophylaxis of Acute Rhinopharyngitis. Gioseffi.—p. 293.

Preoperative and Postoperative Complications of Inguinal Hernia.—In one of the three cases reported by Napoletano, the testicle had been drawn up out of its proper place by the cicatricial shriveling after herniotomy. In another case an abscess had developed in the hernial sac.

Nervous Manifestations of Helminthiasis.—Grifi reports a case in which a boy of 11 developed spastic phenomena and other symptoms suggesting an organic lesion of the pyramidal tracts, but the whole clinical picture melted away after treatment for ascaridiasis.

March 6, 1922, **29**, No. 10

Bismuth in Treatment of Syphilis. C. Ducrey.—p. 313.
Hernia as Cause of Varices. S. Bile.—p. 316.
Anatomic Basis for Anaphylaxis. T. Silvestri.—p. 319.
*Sterilization of Milk for Protein Therapy. A. Rivara.—p. 322.
*Surgery of the Bladder. G. B. Sigurtà.—p. 324.
Present Status of Glycorachia in Disease. Trenti.—p. 327.

Improved Technic for Protein Therapy.—Rivara's experiments on four dogs have apparently demonstrated the complete tolerance and harmlessness of milk sterilized with ether, even for intravenous injection. He adds 100 c.c. of ether to the whole milk in a vial holding 500 c.c. The vial is then sealed and agitated well. It is agitated anew several times a day, at a temperature of 37 C. for ten days. Then with a long pipet, reaching to the bottom of the vial, the milk is drawn and warmed slightly over a flame to evaporate the ether. Samples of milk thus treated never developed microorganisms, and the dogs bore intravenous injection up to 10 c.c. without harm. The usual amount was 3 c.c., and this was continued for thirty days without any local or general by-effects except occasional slight acceleration of pulse and respiration, especially when the ether had not been entirely evaporated.

Instruments for Surgery of the Bladder.—Sigurtà gives illustrations of instruments in current use and of some of his own devising, pointing out the advantages of the latter, especially his hypogastric cystotome, his catheter with spreading tip blades, and his two-way siphon tubes.

Riforma Medica, Naples

Jan. 30, 1922, **38**, No. 5

*Osteomalacia. G. Gentili.—p. 97.
Calcium Metabolism in Normal Man. G. E. Puxeddu.—p. 98.
Curvature of Spine Modifies Percussion. L. Siciliano.—p. 101.
Ascarids in Strangulated Femoral Hernia. F. de Gironcoli.—p. 102.
Heliotherapy in Seashore Sanatorium. M. Quattrini.—p. 112.

Osteomalacia.—Gentili remarks that although experimental production of insufficiency of any of the endocrine glands has never yet induced the production of osteomalacia, yet there is abundant testimony on hand as to the share of certain endocrine glands in the production of the clinical picture in man. In two cases he describes in detail, in women of 30 and 42, the first symptoms were noted at about the fourth month of a pregnancy. Delivery was normal, but the pains and other symptoms of the osteomalacia continued a progressive course during lactation. Treatment then with ovarian extract and calcium phosphate was soon followed by improvement, and complete cure in three months in one case. In the other case, the osteomalacia had crippled the woman for six years, but it then subsided under ovarian treatment, arsenic and calcium phosphate, and the health has been persistently good since. This patient repeats the course of ovarian treatment occasionally as a prophylactic measure.

Brazil-Medico, Rio de Janeiro

Feb. 25, 1922, **1**, No. 8

Ruptures of Gravid Uterus. F. Magalhães.—p. 93.
Tracheotomy for Foreign Body in Larynx. F. Castilho Marcondes.—p. 95.
The Bacteriophagum: Transmissible Microbian Lysis. Costa Cruz.—p. 96.

Revista Española de Medicina y Cirugía, Barcelona

November, 1921, **4**, No. 41

Tumors of the Pharynx. H. Coenen.—p. 627.
*Reconstruction of the Urethra. M. Serés.—p. 634.
Vitamins and Gastric Ulcer, etc. J. Luis-Yague Espinosa.—p. 639.
Diathermy in Gynecology. G. Ribas.—p. 642.
Anaphylaxis and Pregnancy. P. Gonzáles et al.—p. 644.

Reconstruction of the Urethra.—Serés has applied in a case of extensive laceration of the male urethra and a case of epispadias, a flap of mucous membrane taken from the vagina of an operative cystocele case. His illustrations show the technic. The prompt and perfect healing of the flap and the facility with which the lumen can be dilated to the proper size are the main advantages of the method. To be perfectly successful, it requires complete diversion of the urine until the flap has healed.

December, 1921, **4**, No. 42

*When Does Parenchymatous Syphilis Develop? J. Calicó.—p. 683.
Formaldehyd Test of Syphilitic Serum. M. Armangué and P. González.—p. 685.
Rejuvenation. Serrallach.—p. 686.
Calculus in Tonsil. L. Suñé y Medán.—p. 691.

When Does Parenchymatous Syphilis Develop?—Calicó uses the term parenchymatous syphilis as the common denominator for tabes, general paresis, and neurosyphilis of different kinds. He analyzes five cases to show that this parenchymatous involvement occurs much earlier than hitherto supposed. In these cases the interval between the contracting of the disease and the first manifestations of the neurosyphilis was three years in the untreated cases; three years in one case treated vigorously and systematically, and thirty-two years in another case treated periodically quite vigorously. He remarks that this diversity of development with and without treatment, all in robust men with a sound constitution otherwise, shows that there is some unknown factor that still eludes us.

Semana Médica, Buenos Aires

Feb. 2, 1922, **1**, No. 5

*Surgery of the Stomach. A. Gutiérrez.—p. 157.
Case of Bilharziasis of the Bladder. M. Barros.—p. 165.
Syphilitic Parotitis in Adolescent. J. P. Garrahan.—p. 172.
Oscillographic Sphygmomanometer. M. Breyter.—p. 174.
Serotherapy of Snake Bite. R. V. Iglesia.—p. 178.

Surgery of the Stomach.—Gutiérrez gives twenty-six illustrations to show the present trend of operations on the stomach in different countries.

Feb. 9, 1922, **1**, No. 6

*Tibiotarsal Arthrodesis. C. Pasquini López.—p. 201.
Banti's Disease. I. Allende.—p. 220.
Medical Impressions of South America. W. Sharpe (New York).—p. 225.
Puerperal Eclampsia. M. Ruibal Salaberry.—p. 228.
Pinguecula and Pterygium. R. Argañaraz.—p. 230.

Tibiotarsal Arthrodesis.—Pasquini gives a summary review of a year's work in the surgical service, describing with seven illustrations, among other things, the technic applied for tibiotarsal arthrodesis. Some of the twenty illustrations show the methods and success with pes equinus and varus, etc.

Siglo Médico, Madrid

Feb. 18, 1922, **69**, No. 3558

*Function of Corpus Callosum. G. R. Lafora and M. Prados.—p. 169.
Melanic Epithelioma of the Conjunctiva. C. Jiménez López, V. Ribón and A. Peña Chavarría.—p. 174.
*Familial Paranoia. Salas y Vaca.—p. 176.
Chlorination of Water. J. Race.—p. 178.

Function of the Corpus Callosum.—Lafora and Prados have continued their research in this line on monkeys and cats since their publication in 1919. Their illustrations aim to give an idea of the motor and other symptoms that follow slitting the corpus callosum for more or less of its entire length. (Their research was described more fully in the Madrid Letter, April 22, p. 1214.)

Familial Paranoia.—Salas refers to mental aberration which takes the form of imagined persecution by some member of the family. He is director of the state asylum, and states that such cases are comparatively common. In the asylum during months and years the patients had seemed absolutely rational and kindly, but on return to the family their persecution delusion proved to be as vivid as ever. This form of paranoia is not only difficult to class, but peculiarly liable to entail tragedies.

Feb. 25, 1922, **69**, No. 3559

Exercising a Joint After Resection. J. Blanc Fortacin.—p. 197.
Treatment of Hemiplegia After Injury of the Brain. J. Blanc Fortacín.—p. 198.
*Hysteric Amaurosis. M. Marin Amat.—p. 199.
Present Status of Meningitis. Suñer.—p. 202. Conc'n No. 3560, p. 231.
Gangrenous Ecthyma in Child of 2. Sicilia.—p. 206.

Hysteric Amaurosis.—In Marín Amat's case the woman of 26 was robust and free from pathologic antecedents, except influenza two years before. After a sudden, six-day attack of intense continuous pain in the left side of the head, with vomiting, total blindness in the left eye developed, plus blepharospasm. The subsidence of all the disturbances under treatment on a base of suggestion demonstrated their hysteric origin. It is important, he adds, in treating the hysteric not to inform the patient or the family in regard to the hysteric nature of the disturbances.

Archiv für Kinderheilkunde, Stuttgart

March 11, 1922, **71.** No. 2

Action of Homatropin on Infant Eye. G. Richter.—p. 81.
*Protein Therapy of Anemia in Young Children. H. Behrendt.—p. 94.
*Winckel's Disease in the New-Born. H. E. Anders and G. Stern.—p. 101.
Capacity for Lactation. Ida Winternitz.—p. 109.
History of Rachitis in Folklore. M. Cohn.—p. 123.

Protein Treatment of Anemia in Children.—Behrendt gave a daily intramuscular injection of 1 c.c. of horse serum or of some antiserum as shock treatment of severe anemia in 5 young children, 4 less than a year old. The effect of this serum protein therapy, he says, was remarkable—*ganz erstaunlich.* The hemoglobin rose from 17 to 63 per cent. under 21 injections in one 5 months female infant, and the erythrocytes from 880,000 to 2,400,000. In one 11 months male infant, under 45 injections, the hemoglobin increased from 35 to 60 and the erythrocytes from 3,500,000 to 6,400,000. No anaphylactic phenomena were observed in any instance. In 2 other infants the protein therapy induced notable improvement in the general health, but the blood picture did not improve to correspond. He suggests that the response to protein therapy in anemia in children may classify anemia in two groups which may throw more light on its nature. The benefit in the first group of 5 cases was so positive and astonishing that this treatment will have to be given a trial in all cases of anemia in young children.

Winckel's Disease in Young Infants.—In the case here reported the child, 1 week old, seemed to be suffering from poisoning, but necropsy revealed sepsis from hemolytic streptococci. There was nothing to suggest inherited syphilis.

Deutsche medizinische Wochenschrift, Berlin

Feb. 2, 1922, **48**, No. 5

Treatment of Malignant Tumors. Sauerbruch and Lebsche.—p. 149. Conc'n.
The Limits of Local Anesthesia in Surgery. Braun.—p. 151.
*Extirpation of Suprarenals in Epilepsy. G. Sultan.—p. 153.
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Treatment of Lacrimal Glands with Roentgen Rays. L. Brandt and M. Fraenkel.—p. 159.
Technic of Quartz Lamp Treatment. F. M. Meyer.—p. 160.
Promotion of Hair Growth by the Zuntz and the Kapp Methods. Apel.—p. 161.
Therapeutic Value of Petrolatum. Möller.—p. 161.
Diseases of the Pancreas. G. Singer.—p. 162. Cont'd.
Inflammatory Affections of Female Genitalia. Liepman.—p. 164. Cont'n.

Extirpation of the Suprarenals in Epilepsy.—On the basis of personal experience in five cases in which he operated and the reports of the experiences of others, Sultan gives his opinion that the number of patients is still too small to pronounce a final judgment on the procedure, but that the prospects of effecting a cure or even any considerable improvement in epilepsy by removal of the suprarenals must be regarded as slight.

Medizinische Klinik, Berlin

Feb. 19, 1922, **18**, No. 8

Arsphenamin Questions. Arndt.—p. 231. Cont'd.
Roentgen Findings with Disease of Pancreas. G. Herrnheiser.—p. 233.
Questionnaire on the New Influenza Epidemic.—p. 237.
Experiences with Surgical Tuberculosis. S. Romich.—p. 239.
*Thermometer Readings in Urine. Poelchau.—p. 240.
Technic for Deep Roentgen Therapy. F. Nagelschmidt.—p. 242.
*Flocculation of Plasma in Pulmonary Tuberculosis. A. Frisch and W. Starlinger.—p. 247.
Importance of Hydrotherapy and Thermotherapy in Certain Functional Nervous Affections. E. Tobias.—p. 249.

Thermometer Readings in Jet of Urine.—Poelchau suspends the thermometer in a little wire frame which is hung on the edge of the glass or other vessel or it can be held in the hand. The mercury bulb is brought close to the meatus so that the stream of urine laves it. His tests of this method have confirmed the reliability of the findings, he says, while the advantages of the method, the absence of danger of infection, the fact that the thermometer can be used from subject to subject, render the method particularly useful when numbers of persons have to be examined in the shortest space of time. He has found that 100 or 150 c.c. of urine is ample for the purpose for both males and females. The thermometer records the temperature about 0.2 of a degree lower than the rectal temperature; very seldom does the difference amount to 0.4 C.

Flocculation of the Blood Plasma in Tuberculosis.—Frisch and Starlinger estimate the fibrinogen content of the blood by mixing 0.2 c.c. of a 5 per cent. solution of sodium citrate with 0.8 c.c. of blood, and centrifuge or wait for spontaneous sedimentation. Then 0.2 c.c. of the citrated plasma is mixed with the same amount of a saturated sodium chlorid solution, and the flocculation that ensues in the next three minutes is recorded. In normal conditions a fibrinogen content of 0.2 per cent. is the rule. When 0.4 or more is found, and pregnancy and menstruation can be excluded, then something is wrong in the organism. If other signs point to tuberculosis, this intense flocculation is corroboratory evidence. It throws light on the activity and progressive nature of the tuberculous process, and is especially instructive when supplemented with the suspension stability test of the erythrocytes, which is likewise conditioned by the fibrinogen content of the blood. This, in turn, is the gage of the cell destruction going on, measured by the corresponding amount of albumin disintegration.

Münchener medizinische Wochenschrift, Munich

Feb. 10, 1922, **69**, No. 6

The Nomenclature of Tuberculosis. L. Aschoff.—p. 183.
Mode of Action of Protein Bodies and Irritants. Döllken.—p. 185.
Researches on Normal Constitution. J. Kaup.—p. 189.
The "Arm Tonus" Vestibular Reaction. Wodak and Fischer.—p. 193.
Vaccinotherapy. Hilgermann and Krantz.—p. 194.
Contents of Bullae in Specific Reactions. Thomas and Arnold.—p. 196.
Blood Platelets in the Sick and the Well. H. Zeller.—p. 197.
Active Treatment of Abortion. H. Saenger.—p. 198.
Familial Occurrence of Migraine. E. Ebstein.—p. 199.
Tuberculosis in Infants and Young Children. T. Köffler.—p. 200.
Intraperitoneal Infusion as a Last Resort in Severe Nutritional Disturbances of Infants. X. Mayer.—p. 201.
Thyroid Treatment of Chilblain and Chronic Frostbite. Embden.—p. 201.
The Sauerbruch Cineplastic Operations and Prosthesis. Blencke.—p. 202.
Iodism. O. Muck.—p. 203.
Prevention of Serum Sickness by Using Bovine Antiserums. R. Kraus.—p. 204.
Rachitic Involvement of Muscles. A. Müller.—p. 204.
Hemorrhage and Blood Conservation. J. Wieting.—p. 206.

Feb. 17, 1922, **69**, No. 7

*Roentgen Irradiation of Uterine Carcinoma. A. Döderlein.—p. 221.
The Question of Tuberculosis and Childbearing. Schweitzer.—p. 223.
Evacuation of Uterus in General Practice. Friedemann.—p. 226.
*Genealogic Investigations and Psychoses. C. von Economo.—p. 227.
Parenteral Nonspecific Protein Therapy. Stintzing.—p. 229.
Late Results of Cineplastic Amputations. C. ten Horn.—p. 230.
Modified Percutaneous Tuberculin Test. P. Widowitz.—p. 233.
Prevention of Disturbing Reflex Phenomena in Interventions on the Throat. O. Muck.—p. 234.

Psychogenic Suppression of Bárány's Symptom. Griessmann.—p. 234.
An Aid in Testing the Romberg Symptom. H. Goldblatt.—p. 235.
Treatment of Biermer's Anemia. A. Adler.—p. 236.
Temporary and Final Hemostasis. J. Wieting.—p. 236.
The Extrapyramidal Syndrome. E. A. Grünewald.—p. 238.

Roentgen Irradiation of Carcinoma of the Cervix Uteri.—Döderlein began in 1913 to treat cancer of the uterus exclusively with radioactive metals—radium and mesothorium—and in recent years he has combined radium therapy with roentgenotherapy. He reports his results in the cases treated up to 1916, in which the cures date back at least five years. These are all cervix uteri cases. He divides his cases into four groups: (1) All cases that, after the first examination, were designated as operable and in which the same therapeutic results might possibly have been secured by operation; (2) borderline cases; (3) inoperable cases, in which, however, roentgen irradiation was undertaken in spite of the wide extension of the carcinoma, and (4) hopeless cases, in which for local and general reasons all treatment seemed useless. The first group comprises, from 1913-1916, 77 cases, in 37 of which, or 48 per cent., a cure was effected. In the second group there were 90 patients, 18 of whom, or 20 per cent., were cured. In the third group there were 214 cases, in 13 of which, or 6.07 per cent., recovery took place. Even in the fourth group of 119 supposedly hopeless cases one patient was cured. The 32 recoveries among the inoperable cases constitute, Döderlein thinks, just so many more lives saved than would have been saved if the sole dependence had been placed on surgery. While he finds these results satisfactory, in one sense, he regrets that so many patients failed to keep up the treatment; otherwise the proportion of cures would have been greater. Especially during the years of the war, patients were, for various reasons, inclined to neglect their treatment. Herein lies, it is true, one advantage that surgery has over radiotherapy, since the principal treatment is given at one sitting. Of 43 patients of the first group that kept up the treatment, 35, or 81 per cent., were cured.

Value of Genealogic Investigations in the Classification of Psychoses.—Economo has found the study of genealogies valuable in arriving at a classification of psychoses. As a result of such investigations he found that scarcely a third of the children of paranoiacs are mentally sound. A large portion (from a fourth to a third) suffer from pronounced mental disease; more particularly, dementia praecox. All the rest have a psychopathic tendency. Of 22 children, 7 were mentally sound, 6 were mentally unsound, and 9 presented "schizoid" manifestations.

Wiener klinische Wochenschrift, Vienna

Feb. 2, 1922, **35**, No. 5

Cancer Research. A. Fraenkel.—p. 97. Conc'n No. 6, p. 132.
Peculiar Course of Tuberculous Spondylitis. H. Wimberger.—p. 102.
Syphilitic Leukoderma in Relation to the Bloch Dioxyphenylalanin Reaction. E. Gold and F. Reiss.—p. 103.
Chronic Intestinal Invagination plus Appendicitis. E. Frommer.—p. 105.
Diagnosis of Tuberculosis of the Intestine. A. Kirch.—p. 106.
Intermittent Claudication Due to Cardiac Hypoplasia. Serko.—p. 106.
Cardia Changes in Esophageal Processes. T. Bársony.—p. 106.

Feb. 9, 1922, **35**, No. 6

Analysis of Replies to Questionnaire on Cancer Sent Out by the Austrian Society for Cancer Research. Peller.—p. 121. Conc'n No. 8.
*Hemolysins After Splenectomy. S. Weiss and E. Stern.—p. 127.
Elimination by Gastric Juice and Bile of Parenterally Incorporated Stain. P. Saxl and D. Scherf.—p. 128.
Lung Abscess Following Thorax Injury. H. Hoffmann.—p. 129.
*Bilateral Temperature Record in Disease. J. Pok.—p. 130.
Modification of the Neisser Syringe. E. Lekisch.—p. 131.
Present Status of Cancer Research. A. Fraenkel.—p. 132. Conc'n.

Effect of Extirpation of the Spleen on Formation of Hemolysin.—Weiss and Stern found in experiments on rabbits that the formation of hemolysin in animals is unfavorably influenced by the extirpation of the spleen. It cannot be asserted that the spleen is the only organ having to do with the formation of hemolysin, but from their researches they are convinced that the spleen is at least an important factor in the production of this antibody.

Value of Bilateral Determination of Body Temperature for Differential Diagnosis of Febrile Conditions.—Observations in a series of febrile, gynecologic affections led Pok to note that bilateral determination of body temperature sometimes shows considerable variation; for example, in infectious diseases. According to the position of the diseased organ, one or the other side of the body will present a constantly higher temperature, the side in which the infection is located being slightly higher. Axillary temperatures were usually taken.

Zeitschrift für urologische Chirurgie, Berlin

March 6, 1922, **8**, No. 6

*Dividing a Single Kidney. G. van Houtum.—p. 165.
*Dividing a Single Kidney. S. B. de Groot.—p. 170.
*Nephrostomy for Acute Anuria. K. Haslinger.—p. 172.
*Experimental Cystectomy. E. A. Delfino.—p. 177.
*Paranephritic Suppuration. H. Boeminghaus.—p. 180.
*The Abdominal Fissure Question. G. B. Gruber and E. Best.—p. 190.
*Diagnosis of Abscess in Kidney. F. Necker.—p. 204.

Dividing a Horseshoe Kidney.—Van Houtum has found only three cases on record in which the pains from traction on the single kidney were cured at once by slitting the kidney in two. Two of the three cases were reported by Brongersma, the other by Rovsing. Van Houtum adds another case to the list, but says that the relief from the pains was slow and gradual, the cure not being complete until a year and a half had elapsed. He diagnosed the condition by pyelography, controlled by palpation under general anesthesia, and confirmed by the operation on the woman of 37. She had been having attacks of pain in abdomen and back at intervals during the last eighteen months, and each attack terminated in hematuria. The first symptoms developed the night after a tennis match, and the attacks returned after violent exercise afterward. There was considerable hemorrhage as the kidney was divided. At present, two years since the operation, she is free from all disturbances and plays tennis regularly.

The similar case reported by de Groot was in a boy of 16 who had complained of abdominal pains for two years. They occurred only when he reclined or sat with the spine stretched. The central portion of the single kidney was divided through a median incision, the patient in the Trendelenburg position. The two halves slid into their normal beds but hung vertical. All disturbances ceased at once.

Nephrostomy with Acute Retention of Urine.—Haslinger credits the operation with the saving of the patient's life, although she succumbed not long after to the progress of her pulmonary tuberculosis. The right kidney had long been totally obstructed by a tumor when the functioning of the left kidney became defective. After a month of uremia and two days of anuria, the nephrostomy restored the urine function.

Experimental Cystectomy.—Delfino resected different parts of the kidney wall and was surprised at the excellent results of partial cystectomy with implantation of the ureters in the urethra. He made no attempt to suture the bladder stump or to protect the opening into the urethra, but the peritoneum had been sutured completely first. By this ureter-urethra technic, the normal course of the urine is preserved, and there are none of the dangers of methods of implanting the ureters at other points in the body.

Paranephritic Abscess.—Boeminghaus expatiates on the instructive findings in his fifty-two cases of paranephritic abscess when the urine from each kidney was collected separately.

A Sirenomelus.—Congenital abdominal fissure, vesicorectal cloaca, and rachischisis were among the complications in the monster with fused legs and no feet here described.

Early Symptom of Abscess in Kidney Cortex.—Necker calls attention to serous perinephritis as an early symptom of suppuration in the kidney cortex. He merely decapsulated the kidney and punctured it at various points after discovery of the serous perinephritis in a case described. No pus was found, and the operation gave only scant relief. He exposed the kidney a second time three weeks later, and this time discovered the abscess, and conditions slowly returned to clinically normal thereafter. If he had recognized at the first operation that the serous perinephritis was a sign of an abscess in the cortex, much suffering and time would have been saved.

Zeitschrift für Urologie, Leipzig

1922, **16**, No. 1

Melanosarcoma of Penis in Man of 72. W. Peters.—p. 1.
*Aseptic Catheterization of the Ureter. M. Klika.—p. 4.
Shape of Bladder Varies with Position. T. Hryntschak and M. Sgalitzer.—p. 11.
Bilharziasis of the Scrotum. E. Pfister.—p. 16.
Modification of Urethroscope. A. Cassuto.—p. 19.

Aseptic Catheterization of Ureter with Infected Bladder.—Klika thinks he has solved this problem to a certain extent by the use of two catheters, a No. 7 and No. 4. The No. 7 is prepared by dipping the bladder end in a thick mucilage until a fine membrane forms over the openings, closing them completely. The No. 4, with metal guide inside, is then introduced into the No. 7, the tip reaching not quite to the tip of the No. 7. The tip of No. 7 is then introduced into the mouth of the ureter where it is held firm while the inner catheter is pushed through the membrane in the tip of No. 7. The guide is then withdrawn,and the fine catheter is worked on up to the pelvis as usual. It has not come in contact at any point with the bladder contents.

Zentralblatt für Chirurgie, Leipzig

Jan. 7, 1922, **49**, No. 1

A Germ-Free, Colloidal Pepsin Solution for the Softening of Scars, and the Prevention and Loosening of Adhesions. E. Payr.—p. 2.
The Incision for Brauer's Cardiolysis. E. Melchior.—p. 12.
Regenerative Capacity of the Colon. A. H. Hofmann.—p. 13.
Rupture of Thumb Tendon (Drummer's Paralysis). W. Levy.—p. 15.
Addendum to "An Unusually Large Free Body in a Hydrocele of Testicle." The Question of Its Origin. E. Glass.—p. 18.

Zentralblatt für Gynäkologie, Leipzig

Jan. 7, 1922, **46**, No. 1

Adenoma of Corpus Uteri in Elderly Women. C. Menge.—p. 1.
*Expectant Treatment of Eclampsia. F. Lichtenstein.—p. 5.
*Operations on the Pregnant Uterus. H. Küster.—p. 35.
Modified Method of Intra-Uterine Radium Treatment. Flatau.—p. 36.
A Simple Method of Measuring the Female Pelvis. Färber.—p. 37.

Ten Years of Obstetric Expectant Treatment of Eclampsia.—Lichtenstein emphasizes his satisfaction with his long experience with the waiting policy, and declares that the mortality for mothers and children has been reduced thereby one half. The physician who is dependent on his own resources can treat eclampsia much better thus than with extensive operations. His article is based on eighty cases of eclampsia before delivery, 175 intrapartum and sixty-two postpartum. The mortality in these three groups was respectively, 5 per cent., 11.4 and 4.8 per cent. There were preexisting complications in twenty-five of the women. He tabulates the details of the twenty-seven fatal cases.

Operations on Gravid Uterus.—Küster reports that by injecting a procain-epinephrin solution into the edges of the incision of the cervix, he was able to carry through a plastic operation on the gravid uterus without disturbing the pregnancy. The local anesthesia prevented the shock to the musculature or reflex action, and the reduction of bleeding by the epinephrin was a welcome by-effect.

Zentralblatt für innere Medizin, Leipzig

Jan. 7, 1922, **43**, No. 1

Vasoconstrictive Substances in the Blood with High Blood Pressure. W. Hülse.—p. 1.

Tohoku Journal of Experimental Medicine, Tokyo

Jan. 30, 1922, **2**, No. 5-6. German and English Edition

*Research on Whales. S. Oiakawa.—p. 447, etc. Idem. M. Takata.—p. 459.
*Research on the Lymph. S. Osato.—p. 465, etc.
Hyperglycemia and Glycosuria in Rabbits Fastened to the Research Table. I. Fujii.—p. 531.
*The Blood Sugar Content of the Heat-Punctured Rabbit. S. Morita and M. Naito.—p. 562.
*Acidosis in Experimental Ileus. T. Odaira.—p. 570.

Research on Whales.—The four communications here bring to seven the series of reports on scientific research on cetaceans. Oikawa's are devoted to analysis of the keratin and gelatin of certain whales and the use of their bacon-like fat for food. Takata discusses the amniotic fluid.

Research on the Lymph.—Osato has been studying the passage into the lymph of various substances injected into the blood. Also the sugar-producing ferments and the sugar content of the lymph. Also the ferments in the lymph and their connection with the pancreatic ferments. His conclusions are presented in three separate articles.

Blood Sugar Content of Heat Punctured Rabbit.—This article is in English. Neither hyperglycemia nor glycosuria could be detected in the rabbits although their temperature ran up to 40.3 and 41.4 C. (over 106 F.) after the heat puncture.

Treatment of Acidosis in Experimental Ileus.—This article also is in English. The full title is "Changes in the Oxygen Combining Power of the Blood (Acidosis) in Experimental Obstruction of Intestines and the Effect of Some Treatments on Them." One practical conclusion of the extensive research is that acidosis develops as a consequence of obstruction of the bowel, and that this acidosis yields to sodium bicarbonate, the general symptoms showing marked improvement. This testifies that the acidosis with intestinal obstruction is more or less responsible for the general symptoms. The successful injection of bicarbonate was often followed by conspicuous diuresis. Large doses of the bicarbonate were necessary. Injection of saline does not modify the acidosis in the same way as the hydrogen ion content of the blood is lowered by the alkaline. Hence the effect of the latter cannot be due mainly to the dilution of poisonous products in the blood. Calcium chlorid injections by the vein aggravated instead of improving the general symptoms.

Hospitalstidende, Copenhagen

Feb. 1, 1922, **65**, No. 5

*Erythrogonia in Pernicious Anemia. V. Ellermann.—p. 65.
*Differentiation of Bacilli of Typhoid Group. S. V. Bagger.—p. 71. Conc'n in No. 6.

Feb. 15, 1922, **65**, No. 7

Influence of Exercise on Temperature. C. H. Würtzen and C. Holten.—p. 101. To be cont'd.

March 18, 1922, **65**, No. 8

Vaccine Therapy of Infection of Urinary Passages. O. Wulff.—p. 17. To be cont'd.

Rudimentary Erythrocytes in Pernicious Anemia.—Ellermann's photomicrograms from two cases confirm the presence in the blood in pernicious anemia of hemoglobin-free precursors of erythroblasts. Colonies of these extremely rudimentary cells were found also in spleen and liver.

Differentiation of Typhoid Bacteria.—Bagger has been trying the filter paper method of differentiating typhoid bacilli. Strips of filter paper are hung in the fluid under examination, and the bacteria of the typhoid group climb up in the paper faster and more abundantly than other bacteria.

Hygiea, Stockholm

Jan. 31, 1922, **84**, No. 2

*High Blood Pressure and Diabetes. E. Kylin.—p. 49.

High Blood Pressure and Diabetes.—Kylin has been continuing his research on high arterial blood pressure without high capillary pressure. In this form, the blood pressure fluctuates readily within a wide range, and it may drop to normal during sleep. This instability of the arterial pressure testifies that the high blood pressure is not due to organic changes in the vessel walls. It is much more probable that the fluctuations are due to some chemical influence, possibly some internal secretion. In a very large proportion of his ninety-seven cases of diabetes since 1919 there was high blood pressure of this purely arterial, unstable type. He argues that both the high blood pressure and the diabetes are the result of one and the same cause, responsible also for the accompanying lymphocytosis, low tolerance for carbohydrates, and the vasomotor instability. The still unknown cause, the morbus *x*, opens a field for research on its etiology, symptomatology, prognosis and treatment. The instability of the blood pressure during the menopause period suggests that insufficiency of the sexual glands may be incriminated. Men with this purely arterial high blood pressure often complain of loss of sexual vigor, even men of 40 or 50.

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THE DISPENSARY AS A FACTOR IN MEDICAL EDUCATION AND AS A DIAGNOSTIC CLINIC*

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The main functions of the dispensary as an outpatient department of a general hospital which is part of a school of medicine are various, but in every aspect nterlocking. They may be considered under four main headings as they are related primarily to (1) the hospital, (2) the school of medicine, (3) the medical profession and (4) the public.

THE HOSPITAL

1. In its relations to the hospital, the dispensary should be that department at which those many applicants for medical advice or attention who are not ill enough to enter the wards may be cared for.

2. It should be the center from which the patient who has been under observation in the wards may be followed and directed and observed through such periods of time as may be desirable.

3. It should be the center of an efficient social service department which should keep in touch with and assist the indigent sick who are under treatment in the dispensary, and their families and dependents.

THE SCHOOL OF MEDICINE

1. The dispensary is invaluable to the medical school as an arm through which there may be gathered patients suffering from those special diseases concernng which studies are in progress.

2. It affords, if properly organized, a mine of material in the shape of patients more or less disabled from chronic disease who may be utilized for purposes of instruction. And this utilization, in many instances, may be to the advantage of the patient himself. A consultation carried out in the presence of students—advice sympathetically and deliberately given before an audience with the explanation of its rationale, is often more impressive and effective than that given in private.

Again, wholly or partially disabled persons may, from time to time, earn small sums of money by allowng themselves to be presented as objects of demonstration or study.

3. The dispensary affords an opportunity for junior students acting as assistants to gain valuable training n the technic of history taking.

4. It offers an opportunity for the senior students of medicine to observe the attitude of his fellow man toward those lesser ailments with which he will be concerned in his daily practice. It offers the one opportunity, indeed, to study the reactions of the ambulant patient to advice. But the success of a physician depends largely on his ability to impress the ambulant patient or the healthy man of the necessity for those hygienic and preventive measures on which his health and efficiency may depend. And the mental attitude of the ambulant patient is very different from that of the disabled invalid in the wards.

5. The dispensary should be the center of a department of industrial medicine. There are many questions which not only relate directly to the health of employees, but also have wide medical, social and economic importance which may best be approached through our schools of medicine. The activities of several dispensaries, notably in Chicago, Cincinnati and Boston, are highly significant. It is important that students and practitioners of medicine should be kept in touch with the progress of information on these questions.

THE MEDICAL PROFESSION

In its relation to the medical profession (1) the dispensary offers relief to the overburdened practitioner in affording attention to those patients for whom, with all the charity and good will in the world, he cannot care, and at the same time do his duty to his other patients and to his own family. (2) It should offer to the practicing physician an opportunity from time to time to obtain for patients, otherwise unable to afford it, the benefit of special refined methods of diagnosis, and expert opinion.

THE PUBLIC

In its relation to the public (1) the dispensary should offer an opportunity for those unable to pay for medical attention to obtain that advice and care which the busy physician is unable to give. These patients pay for the care and advice which they obtain in two ways: First, by the time which they are obliged to give; for the conscientious handling of large bodies of individuals demands time, and a dispensary consultation is time taking to the patient. Secondly, and what is far more important, by the agreement that the consultation may be so carried out as to serve for the instruction of students of medicine, undergraduates or postgraduates.

2. Furthermore, the demand is steadily increasing that the properly organized dispensary should offer to physicians, and through them to the public, a clinic in which a thorough diagnostic investigation by competent physicians should be placed within the means of self-respecting and valuable citizens whose private resources

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prevent them from availing themselves of advice enjoyed by the rich and offered gratuitously to the poor.

These seem to me to be the main functions of the outpatient department of a teaching hospital.

VALUE OF DISPENSARY FROM STANDPOINT OF MEDICAL EDUCATION

Let us now consider a little more fully some of the several special aspects of the question as to the value of the dispensary from the standpoint of medical education. The objects of clinical instruction in general are: (1) the study of diagnosis, beginning with the teaching and application of methods of physical diagnosis, strictly speaking; (2) the study of the natural history of disease, and (3) the study of methods of therapy.

In a general way, the study of diagnosis is indissolubly involved with a study of the natural history of disease. The wards of a general hospital offer exceptional—indispensable—opportunities for the study of the anatomic and physiologic features of the natural history of disease, and of many of its important psychologic aspects, especially those associated with the graver maladies; they afford unequaled opportunities for the unraveling of difficult problems of differential diagnosis; they hold forth special facilities for the treatment of such diseases as may confine the patient to bed for shorter or longer periods of time or for such maladies as may require especially complicated measures of diet or treatment.

But the treatment of grave disease, the care of the patient who is confined to his bed, the unraveling of especially difficult diagnostic problems, the pursuit in ward and laboratory of scientific studies, pathologic, physiologic—these are not the main functions of the average physician. To recognize, to prevent, to protect, to heal—these are his main functions. To recognize the danger of disease, to instil into patients that understanding which may enable them so to order their lives that they may best preserve their health and efficiency, to detect the earliest stages of disease, to remove or combat these before it is too late—

> Obsta principiis; sero medicina paratur. . . .

"Combat the ill at its source; too late is the medicine offered."

The instruction of the student in lectures, clinics and in the wards is, after all, rather one-sided. Inevitably the stress is laid on the graver phases of acute disease or on serious, established chronic affections. The hospital wards and clinics gather together in groups cases which the practitioner encounters but occasionally in his general practice, and afford an opportunity to demonstrate in a few months that which the student may meet thereafter only in years of experience.

The student sees a selected group of patients with grave maladies. These diseases are for the most part well established at the time he has occasion to observe them. He takes the history of the patients, he becomes familiar with their early symptoms, but when he leaves the hospital he has little idea of the relative frequency of these diseases, and little conception of the significance in the abstract, of the symptoms. Almost always the medical student beginning practice is puzzled by the absence in his patients of the evidence of those diseases which his experience up to that time has taught him are usually indicated by the symptoms of which they complain. He is puzzled and is very likely to alarm his patients and their families by an undue concern over manifestations, the relative importance of which he can learn only by experience. But in the dispensary, during his days in the medical school, a student has an admirable opportunity to familiarize himself with the anatomic, physiologic and psychologic aspects of the lesser ailments as well as of the earlier stages of grave diseases so important to recognize at the beginning.

An example of the attitude that the student acquires as a result of instruction in clinics and wards with selected cases of grave diseases is well illustrated by a phenomenon familiar to most teachers. The student takes the history of a patient who comes to the dispensary with the complaint of a cough. On questioning, he finds that there has been fever and sweating at night, considerable prostration and weakness, and a purulent expectoration—symptoms only too suggestive of pulmonary tuberculosis. The student examines his patient, who is fever-free and shows no physical signs of disease. He returns then to the instructor with a puzzled face, convinced that the man must have tuberculosis, and distrusts his examination. But on a little further questioning, it appears that the symptoms of fever and sweating at night, of prostration, of purulent expectoration, were of but a few days' duration; that for a week or two, perhaps, the patient has felt well; the fever has been absent; the expectoration has disappeared. It wasn't for these things that the patient came to the hospital. A healthy, normal man—these symptoms did not worry him. He knew that they meant a "bad cold." He came to the dispensary because he had begun to be worried that his cough still persisted; because his friends called his attention to it. This is a phenomenon perfectly familiar *in corpore vili* to every self-observant man. All that such a patient needs is reassurance, and in another ten days his cough will have gone.

Ability to recognize early tuberculosis of the lungs—one of the vitally important problems of practice—of the exanthems in their early stages cannot be acquired in clinics, in lectures or in wards of a hospital.

Properly to prevent and to protect, the physician must have human sympathy and skill in dealing with his fellow man. He must be familiar with the actions and reactions—not so particularly of the helpless invalid whom he can direct and control—but of the self-sufficient and independent man rushing along in his thoughtless career, who stops to ask for relief for a symptom but is impatient of warnings and knows not that he can fall. It is a fascinating and a difficult game that the physician must play. In the hospital the measures that need to be carried out he can, as it were, command; but without he can accomplish the necessary measures only by his own authority and through his powers of persuasion. On these powers depend largely his success as the protector, adviser and healer of his patients. But the mental attitude of the healthy, busily occupied man, suffering from a minor complaint, is far different from that of the invalid in the hospital ward. The greatest privilege, the most important and, at the same time, the most difficult duties of the physician—public and private—are these duties of prevention and protection: proper attention to lesser ailments, education of one's patients in matters of hygiene, proper care of convalescence. And experience in these phases of practice is not to be gained in the wards.

Opportunities of this sort are valuable especially, not so much to the beginner as to the senior student.

It is remarkable and anomalous that so few of our schools of medicine should make use of the dispensary for the instruction of the senior student. This is a point on which I would especially insist. It is one which was keenly appreciated by my wise and valued friend Theodore Janeway, who in his clinic, at the time of his death, had devised an interesting scheme for the further utilization of the dispensary for the instruction of senior students. I am convinced that while the dispensary may be of assistance to the beginner in affording opportunities for the practice of taking histories, while it should supply special cases of chronic disease for study by small groups of students, while the material may be utilized with benefit for special "clinics," yet one of its greatest values in a school of medicine should lie in the fact that it constitutes a field in which the senior student may gain familiarity with that which constitutes the ordinary practice of medicine.

ADVANTAGES OF A GOOD CASE UNIT INDEX SYSTEM

At this point let me digress for a minute on a question which relates to hospital efficiency as well as to medical instruction. In order that the dispensary or the outpatient department of a teaching hospital should perform its proper function in any of its relations, it is necessary that there should be a good system of indexing the histories of the patients. Some of the good dispensaries in this country lose a large part of their value through defects in the filing and indexing of records. Statistical study is impossible if we cannot lay our hands upon the histories of our patients. The collection of patients for purposes of instruction is also impossible without proper indexing. I cannot too strongly emphasize the value of a unit system of hospital and dispensary histories. In the last thirty years I have undertaken a number of investigations which required a careful search through hospital records. No one, I fancy, who has not had considerable experience of this sort quite realizes the opportunities for error and the confusion and the waste of time caused by carelessness in inscribing the names of the patients alone. In one of the several institutions with which I have been connected, I had an occasion some years ago to tabulate about 2,000 case histories of a certain disease. These cases were summarized carefully on large sheets and numbered in order of the date of their entry. Many valuable hours were lost through the incredible complications depending on a lack of connection between dispensary and ward histories, the confusion arising chiefly from a careless transcription of names. In one instance a patient who had been treated through several years in the dispensary and who had had three admissions to the hospital appeared on various history sheets and books of the hospital under eleven different family names and five different first names—the extremes running from Stanislaus Niewierowsky to Mike Mokritzky. When outpatient department and hospital histories are separately filed, the complications that may arise are almost inconceivable.

In another series of cases, the histories, running into the hundreds, were classified according to the date of the patient's entrance into the hospital, but as they came mainly from one clinic, with their clinic number at the head of the line. Suddenly it was found that the carefully copied sheets summarizing the histories were thrown into complete confusion because, at a certain moment, one of the departments had decided to number the histories consecutively according to the date of discharge rather than according to the date of entry of the patient. It is easy to see that such ataxia and lack of cooperation render the tracing of patients extremely difficult and interfere seriously with the value of hospital records. If the dispensary is to be valuable as a place of instruction for students, it should have a well-organized index through which the entire history of the patient may be traced. A careful case unit index system, such as that now in use at the Presbyterian Hospital in New York, is invaluable, I might almost say indispensable.

In few of our dispensaries are the relations between the wards and outpatient department sufficiently close. Not only that we may properly serve the public, but for purposes of instruction, it is desirable that the dispensary should furnish the means for keeping up relations with patients discharged from the wards. Students too often see a patient at a clinic and hear nothing of his future course. To keep in touch properly with patients discharged from the wards is almost impossible in the absence of a unit case history system. But that the student should follow his case is extremely important. It ought to be possible for a student or a member of the staff at any time, by consulting the history of a given patient, to find a record of exactly what his progress has been in all his hospital relations.

The connection between the dispensary and the ward service should be so close that it ought to be possible for those members of the staff who are in charge of the wards to hold clinics from time to time for the special purpose of bringing together their old patients.

But in the short time that I am allowed, I have said perhaps all that I should with regard to the relations of the dispensary to medical instruction and I should like to recapitulate once more two or three points that seem to me of special importance. These are:

1. The value of the dispensary for the instruction of the senior medical student.
2. The value of the dispensary as an agency through which we may keep in touch with patients who have been treated in the wards.
3. The importance, indeed, the necessity, of a case unit index system, if the dispensary is to do its full duty to public or hospital or school of medicine.
4. The value of the dispensary as the center of a department of industrial medicine.

VALUE OF THE DISPENSARY AS A DIAGNOSTIC CLINIC

The value of the dispensary as a diagnostic clinic is a subject that has received a good deal of attention of late. Any outpatient department which is doing its full duty must, and, in many instances, does possess advantages in its laboratories and its equipment for an intensive study of various problems of diagnosis, beyond those possessed by the individual physician. One of the main objects of the dispensary is to bring together and to coordinate such means of study as to make it possible within the shortest period of time to make the most complete study of the individual case. Studies of this sort are made, of course, daily, outside the hospital, but, with the increasing complexities of medicine, they have laid an increasing financial burden on the shoulders of the patient. Physicians who are making little above a living income frequently encounter cases in which desirable diagnostic studies can be obtained only at a cost prohibitive to the patient. Many a practitioner denies himself a considerable part of his own fee in order that such information may be obtained.

This information, these advantages, are open gratuitously to the poor in our better free dispensaries.

Among the more intelligent patients of moderate means, no small number seek, voluntarily, the advantages of a dispensary in order to obtain the diagnostic privileges afforded. It is, again, common in some hospitals to receive visits from patients who have come a considerable distance, sent often by physicians who seek the diagnostic help of the outpatient department.

More and more, I think, most observers interested in hospital development have come to feel that this function of the dispensary—its function in offering diagnostic assistance to the physician—is one which involves a real duty toward the physician and toward the public. There is nothing, it seems to me, in the character of the service demanded which should make this work of a so-called diagnostic clinic different from that which goes on in the dispensary every day in its regular routine. But it is fair to say that where such work is undertaken for a physician—and I believe that such work should be undertaken only at the request of the physician, and that in a good many instances the physician may well desire to be present—measures should be devised to make it less time-taking than the procedure of the regular dispensary service.

It is easy to see again that if entered upon on any large scale, such work might be very difficult to carry out. I believe, however, that it is fast becoming the duty of a well-organized outpatient department to make possible, preferably by appointment, a limited number, so many as is compatible with the organization of the institution, of consultations of this nature, and it is right and suitable that, when the patient can afford it, a moderate charge should be made. Such consultations will not be of great financial significance to the institution or to the members of the staff who take part in them, but they should be of great value to the institution in other ways. Every physician who has had a considerable consulting practice is aware of the extraordinarily interesting problems brought before him by his colleagues. From a scientific standpoint, then, such an arrangement should be of very real advantage. Not infrequently in the past, physicians have brought their patients to the dispensary at the Johns Hopkins Hospital at the hour of Dr. Osler's clinic, and his demonstration of the case to the class was equally valuable to patient, student and physician.

Secondly, from a standpoint of medical education, the opening of such opportunities should be useful. In connection with these consultations, senior students and postgraduate students would naturally be utilized as assistants in the taking of histories and in other ways; to them such an experience would be profitable.

I believe, then, that the advantages of the well-organized outpatient department should be opened, for a limited number of consultations at moderate rates, to physicians desiring to obtain such information with regard to patients unable to meet the ordinary expenses involved in such a procedure. This is a duty owed by the institution to the profession and to the public; and the procedure should be valuable to the hospital from a scientific standpoint—to the school of medicine as a means of instruction to senior and postgraduate students.

In connection with this, it may not be amiss to say a few words with regard to the so-called diagnostic clinics that have been arising in such numbers throughout the country in the last few years. These associations took their origin from the recognition by conscientious practitioners of the necessity of cooperation that they might, without too much expense and loss of time, obtain the expert advice desirable in the study of the patients. So far as these so-called clinics represent well organized groups of men of high professional ability who have associated themselves together for the purpose of making it possible for themselves individually better to study their cases, and with the desire, moreover, of affording at times the patient with moderate means such opportunities as the outpatient department of a hospital offers gratuitously to the poor, just so far are they tending to meet a real want and, on the other hand, to relieve the dispensary of these public responsibilities which do exist at the present moment.

The establishment, however, of such associations by other than well qualified men is very likely to and, I fear, sometimes does result in the patient's going through an unnecessary multiplicity of examinations and subjecting himself, in the end, to unnecessary expense which may more than offset the advantages offered to the few for whom so elaborate a study is really necessary.

A so-called diagnostic clinic to which a patient presents himself for a "thorough examination" in the sense, merely, that he passes through the mill, without primary consultation with some individual adviser, is an absurdity. Such organizations carry out on a large scale the sort of semicharlatanism with which we have been familiar for many years in some laboratories—those laboratories or physicians that furnish a certain sort of report on examinations of the urine, for instance—those unending reports with a meaningless list of impressive figures which the patient treasures and unfolds before us. These elaborate urinary reports have deceived many an unfortunate sufferer and led him to feel that he was getting something very important.

In like manner many a good man who can afford it, and others, alas, who cannot afford it, gain a certain satisfaction at considerable expense, in undergoing a large number of more or less useless examinations of which they receive an impressive written record. The term "diagnostic clinic" today unfortunately covers a multitude of sins. An association of physicians which offers special advantages for the investigation of every aspect of the case that may present itself to one of them, an association so organized as to make it possible that these studies may sometimes be open to those of limited means who might be unable otherwise to avail themselves of such assistance, is a blessing. A like association, on the other hand, which affords advantages for all sorts of special examinations, so advertises, and pursues these examinations in a routine manner, is a discredit to the profession and a danger rather than a benefit to the public.

For a group of physicians to advertise a "diagnostic clinic" is in as bad taste as for a physician to advertise himself. The physician's laboratories and assistants and instruments of precision do not make his diagnoses; it is the physician himself who considers the case, seeks what information or assistance he may need, and uses his mind on the basis of his observation and this information. If the physician is not a man of judgment and wisdom and experience, the tests are worthless and often more than worthless—misleading.

For a group of physicians to advertise a "diagnostic clinic" is exactly analogous to that which an individual practitioner might do if he put an advertisement in the paper, saying, "Dr. X, Internist. All laboratory advantages. Associates in all specialties. Prepared to make a complete diagnostic study"—nothing more and nothing less. It is advertising; that is all. And there would seem to be no reason why a general hospital should advertise its dispensary any more than a private physician or group of physicians.

To advertise is not a crime; but the majority of conscientious physicians in this country believe that, on the whole, advertising does not help but misleads the public, for it opens wide the door to the unscrupulous. And the public is easily misled. Advertising is bad policy. Any advertisement that an honorable physician or a reputable hospital may make is sure to be outdone by the quack—and how is the public to know? Today the *intelligent* public does know that the reputable physician does not advertise.

"By their fruits, ye shall know them." It would be unfortunate if the medical profession of America, after so many years, were to lose confidence in these wise words.

CONCLUSION

Let me emphasize one further point: The well-organized dispensary should be a little more than a mere outpatient department. It should have a certain number of beds for purposes of diagnostic study and for the temporary accommodation of patients following minor operation or diagnostic procedures. This would clearly increase the efficiency of the outpatient department from every standpoint.

There are other aspects of the functions of the dispensary which might well be discussed, but I have occupied my full share of time. Let me express one more thought, however, and that is that the dispensary should in the future be a specially valuable center for postgraduate instruction. The demand for postgraduate instruction is increasing every day, and those physicians who present themselves at our large hospitals and schools of medicine seeking this instruction are far better qualified to profit by such experience than they were a few years ago. It is a duty of the well equipped hospital and school of medicine to offer such opportunities, and the advantages offered by a well ordered and equipped outpatient department for postgraduate teaching are closely analogous to those afforded for the teaching of senior students of medicine.

1208 Eutaw Place.

Chemical Changes in Blood in Nephritis.—In parenchymatous nephritis the nitrogen retention is comparatively small, although the examination of the blood generally discloses a retention of chlorids. The figures for urea nitrogen seldom exceed 30 mg., except in the terminal stages of the disease, and generally fall between this figure and 15. The figures for chlorids, expressed as sodium chloride, frequently exceed 0.6 per cent. for whole blood and 0.7 per cent. for plasma.—V. C. Myers, *Proc. New York Path. Soc.* **21**:27 (Jan.-May) 1921.

THE USE OF THE OUTPATIENT DEPARTMENT AS A TEACHING FIELD FOR INTERNS

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In view of the steadily increasing attention to the outpatient department among hospitals and medical educators, it has seemed timely to collect and present a cross-section of opinion regarding the use of the outpatient department as a teaching field for interns, and the practice in representative hospitals throughout the United States. Dr. Osler [1] said, many years ago:

> Let me remind the younger physicians in the audience that some of the most brilliant reputations in the profession of this country have been built up upon the solid foundation of notes taken in outpatient departments. Let me urge you to make ample provision for your medical students in the outpatient department, where they see the patients in their native state, so to speak, before they have been scoured and cleansed by the nurses in the ward.

The "Essentials of an Acceptable Medical College," formulated by the Council on Medical Education and Hospitals of the American Medical Association, require that each medical school in order to be acceptable must control an outpatient department for teaching purposes. "The college should own or control a dispensary, or outpatient department, the attendance to be a daily average of 100 patients (visits) (for senior classes of 100 students or less), the patients to be carefully classified, good histories and records of the patients to be kept and the material to be well used. The attending staff should be made up of good teachers, should be well organized and be prompt and regular in attendance."

Of course, there are many factors which influence the value of the outpatient service as a teaching field. No doubt the most important is the character of supervision of the student. The mere turning loose of young medical students in a dispensary literally to "practice" on the patients is obviously of little or no educational value.

The type of clinical material varies in different communities, and for this reason some institutions are unable to provide a variety of training. The ratio of patients to students is another important factor, as time is an essential element for the thorough study of cases. The available equipment and laboratory facilities also greatly affect the educational opportunities for students.

REPLIES TO A QUESTIONNAIRE

As little information has been collected as to the present status of the education of interns in outpatient service, inquiry was made of the superintendents of 300 large hospitals throughout the United States, and of the deans of medical colleges, as to the use of interns in the outpatient departments of their institutions.

There were 162 replies received to this questionnaire. Of these answers, forty-four, or 27 per cent. (all but one from nonteaching institutions) stated that the hospital had no outpatient department. Two institutions which replied had a separate dispensary, and four had no interns. Two deans who replied stated that their colleges provided only a two year medical course, and therefore their students were not prepared for outpatient service, and six of the replies received were duplicates, that is, the superintendent of a university hospital and the dean of the university both replied, giving data regarding the same hospital. This makes a total of fifty-eight institutions from which replies were received in which there was no possibility for the use of interns in an outpatient department.

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[1] Osler, William: Functions of an Outpatient Department, Brit. M. J., June, 1908.

TABLE 1.—USE OF INTERNS IN THE OUTPATIENT DEPARTMENT (SUMMARY OF 104 REPLIES TO QUESTIONNAIRE)

	Replies from Nonteaching Institutions		Replies from Teaching Institutions		Total	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Interns not used in outpatient department	11	19.3	4	8.5	15	14.4
Interns used only for emergency	5	8.8	..	...	5	4.8
Interns' work in outpatient department optional	7	12.3	10	21.3	17	16.4
Interns' work in outpatient department required	34	59.6	33	70.2	67	64.4
Total	57	100.0	47	100.0	104	100.0

Service of Interns in Outpatient Department.—Of the 104 other institutions, all had outpatient departments. In fifteen of these, interns were not used. In five, interns were used only for emergency. In seventeen, the service of the intern in the outpatient department was optional, and in sixty-seven the service of interns in the dispensary was required. Thus, in 64 per cent., or nearly two thirds of the institutions in which the use of interns was possible, their service in the outpatient department was required.

The proportions varied somewhat when the answers from the nonteaching hospitals were tabulated separately from those from teaching institutions (Table 1). In 70 per cent. of the teaching institutions the use of the intern in the outpatient department was required, whereas this service was required in only 60 per cent. of the nonteaching hospitals; interns gave optional service in another 21 per cent. of the teaching institutions, so that service in the outpatient department was found to be either required or optional in more than nine tenths of the teaching institutions: a very interesting commentary on the value medical educators place on this service. In 12 per cent. of the nonteaching institutions, interns gave optional service; in 9 per cent. they were used only for emergency; in 19 per cent., nearly one fifth, they were not used in the outpatient department at all, an indication that the nonteaching institutions are not as alive to the educational opportunities of the outpatient department as are the teaching institutions.

TABLE 2.—CLINICS IN WHICH INTERNS ARE USED

Type of Clinic	No. of Institutions
All services	11
General medical	45
Surgical	27
Obstetric and prenatal	18
Eye, ear, nose and throat	18
Gynecology	15
Genito-urinary	15
Pediatric	10
Orthopedic	10
Neurology and psychiatry	7
Laboratory and roentgen ray	7
Dermatology	6
Contagious disease	2
Dental	2
Hernia	1
Metabolic	1
Industrial	1

Further tabulation was made of the replies from institutions in which outpatient service was required, of the types of clinics in which interns gave service, and of the term of service.

Type of Clinic in Which Interns Are Used.—In the sixty-seven institutions in which the service of interns in the outpatient department was required they were used in the clinics listed in Table 2. It will be seen that their use in medical clinics is much the most prevalent. This, of course, may be largely explained by the fact that this type of clinic is one of those most usually organized. But although surgical clinics are quite as common as medical, interns are not nearly so generally used in them. These answers would have been more illuminating if information as to what clinics were conducted had been available also.

Term of Service in the Outpatient Department.—The length of the term of service in the outpatient department in the institutions in which service is required is given below in Table 3. The fact that in nearly one quarter of these hospitals the term of service in the outpatient department "varies with the corresponding service in the wards" indicates that many institutions are making use of this opportunity of coordinating the training of the hospital wards with the experience in the dispensary. It is especially interesting to note that more than one tenth of the institutions required outpatient service of a year's duration or longer.

TABLE 3.—LENGTH OF SERVICE

	Number of Institutions	Per Cent. of Institutions
Varying with ward service	16	23.9
Less than three months	10	14.9
Three months	14	20.9
From four to twelve months	8	11.9
One year and over	8	11.9
Not stated	11	16.4
Total	67	99.9

Advantages Taken of Outpatient Service When Optional.—Answers from deans and superintendents seemed to indicate that there is a wide difference in the way interns take advantage of outpatient service when this service is optional. Of those who answered this question, half stated that the interns rarely availed themselves of this privilege, and the other half that their interns were keenly interested in the outpatient service, or words to that effect.

In the questionnaire sent out, inquiry was made as to the advantages to be gained by both the hospital and the intern, by the use of the latter in the outpatient department; the difficulties in the use of interns in the dispensary, and the type of supervision given them there.

Advantages Gained by Intern Service in the Dispensary.—The answers to the question of the advantages to be gained by the institution indicate chiefly an appreciation on the part of the institution of the amount of work done by the intern, although the value of the intern as a liaison officer between the ward and outpatient department was also brought out. The chief advantage to be gained by the intern was thought to be that he saw in the dispensary the type of case most likely to be encountered in later office practice. There was a rather general expression of the opinion that interns highly value outpatient service.

Supervision of Intern Work.—To the question, "How is the work of the intern in the outpatient department supervised by the medical staff?" eighteen replies stated that they were supervised "by the attending staff"; six that the chiefs of clinic or their assistants took care of supervision; five that the heads of departments were the overseers of dispensary work; in two dispensaries the interns were directly under the chief assistant, who was paid to assume charge of the dispensary; in four cases the interns were considered to be members of the staff pro tem. One letter stated naively that the interns were supervised by the staff when the members of the staff were present, and that the interns were in charge of the dispensary when the members of the staff were not present. Four letters stated that the supervision of the intern was "direct." In most cases the replies to this question were not sufficiently detailed to be very illuminating. It might be desirable to obtain further detailed information on this point. Unless there are certain physicians present during the outpatient hours whose primary duty is to instruct and supervise interns and students, rather than to give routine care to patients, there will always be a tendency for the urgent need of caring for the sick to take precedence of teaching. Both service to the patients and education of medical practitioners are important, and neither should be lost sight of in a properly organized teaching clinic.

REPRESENTATIVE NEW YORK PHYSICIANS FAVOR OUTPATIENT SERVICE

In the course of another investigation, one of us had the opportunity of conferring with seventy-five representative New York physicians who are active in outpatient work. These physicians were questioned as to their opinions regarding the use of interns in outpatient service. Of these physicians, 73 per cent. were in favor of the interns being used in the outpatient department under supervision. The chief reasons given by the physicians favoring outpatient service were that the intern had the opportunity of observing in the outpatient department the type of cases which would form the largest proportion of his office practice, and that there was a decided stimulus to the outpatient staff in having the younger men as students observing their work.

Twenty-seven per cent. of these physicians felt that the intern was too much occupied in the hospital to derive any real benefit from outpatient service without neglecting his hospital duties.

SHOULD OUTPATIENT SERVICE BE REQUIRED FOR HOSPITALS OFFERING ACCEPTABLE INTERNSHIPS?

As previously stated, the Council on Medical Education and Hospitals of the American Medical Association requires that medical schools, in order to be acceptable, must control an outpatient service; but the American Medical Association in its "Basis of Classification for Hospitals Offering an Acceptable Internship" does not make outpatient service for interns a requirement. The deans of medical schools were asked their opinion of adding such a requirement to the standards for acceptable hospitals. In answer to the question, "Do you believe that hospitals should offer outpatient experience to interns in order to be classified as offering an acceptable internship," forty replies were received. Eleven deans, more than one fourth, answered unequivocally "yes"; two typical answers are quoted:

DR. THEODORE HOUGH, University of Virginia: I decidedly favor requiring that hospitals should offer a rather extensive outpatient experience to interns in order to be classified as offering an acceptable internship. While the outpatient service should be used in the instruction of third and fourth year medical students, it is of peculiar value in the training of the intern. Briefly, the position is that the facilities of the outpatient department may be used in the case of the intern to give him experience in rapid diagnosis comparable to the office practice of a busy city physician. In a large outpatient clinic, I should roughly estimate that one third of the teaching facilities of the clinic should be used for the third and fourth year students, and two thirds for the interns.

PROF. FRANCIS G. BLAKE, Yale: This appears to be essential for the following reasons: First, if the work of the intern is only in the hospital ward, he is provided no opportunity to come in contact with or to study and treat ambulatory diseases, but sees only a group of conditions which are sufficiently severe to necessitate hospital treatment for the patient. It is quite obvious that he should have an opportunity to see and learn how to treat many of the minor ailments which he can see only in an outpatient department. This to me seems to be especially necessary because in private practice a considerable proportion of the patients who consult a physician are of this ambulatory class with only minor ailments. Second, outpatient service will also provide the intern an opportunity for seeing the earlier manifestations of many diseases, such as nephritis, heart disease and neurologic conditions, which he sees in the hospital only in the later stages. Third, the intern in the hospital ward has insufficient opportunity for learning how to prescribe drugs or to outline directly to the patient diets, mode of life, habits, exercise, etc.; work which he will have to do in considerable amount in private practice. The training afforded in this field in outpatient work should be of great help to him.

Another twenty-two, or more than one half of the deans who answered the letter, expressed as their opinion that, although the use of the outpatient department as a teaching field for the intern was extremely desirable, such service should not be made obligatory at the present time. Typical answers were:

DR. C. N. MEADER, University of Colorado: There are many hospitals which do at present, or can with a little strengthening in a few places, offer very acceptable internships but which do not now conduct an outpatient department. To attempt to force these hospitals to develop an outpatient department hastily and at the present time might seriously handicap the efficiency of other work in the hospital and result in making the total internship less rather than more desirable.

DR. J. T. HALSEY, Tulane University of Louisiana: Though we do not believe that in order to be classified as offering an acceptable internship it is necessary that a hospital should offer outpatient experience to interns, we do believe that, other things being equal, hospitals offering outpatient experience to its interns offer a more acceptable internship than those which do not.

DR. WILLIAM DARRACH, Columbia University: We believe that hospitals should offer outpatient experience to interns, but do not believe that this should be a necessary qualification for hospitals to be classified as offering an acceptable internship. Such a service should be of great advantage to the interns, but I do not believe the time is yet ripe when it should be made a necessity.

DR. R. V. PATTERSON, Jefferson Medical College of Philadelphia: It would not seem to me desirable to make intern service in the outpatient department compulsory. The experience is undoubtedly valuable, and in some institutions might be made a part of the regular service. I deplore, however, a too minute specification of resident service which would not allow sufficient latitude to individual institutions with the variability of their services.

One letter suggested that hospitals offering a two years' or eighteen months' internship should be required to offer outpatient service, but that institutions giving only one year's service should not be required to do so. Another answer brought out the fact that institutions in some parts of the country cannot provide outpatient clinical material because of the size or character of the population of their communities.

Of the forty deans answering this question, only five, or one eighth, stated definitely as their opinion that outpatient service should not be required of hospitals offering acceptable internships, without some such qualifying statements as those quoted above. One made the point that as soon as intern service is universally required for medical licensure, outpatient service should be required of interns.

The preponderance of opinion in favor of the use of the outpatient department as a teaching field for interns is shown by the forty-three answers to the question, "In your opinion should there be experience in the outpatient department during the intern year?" Thirty-seven, or 86 per cent., of the deans answered this question in the affirmative, while two stated that such service was "desirable but not necessary." Only four, or 9 per cent., considered intern service in the outpatient department undesirable.

CONTINUANCE OF OUTPATIENT SERVICE OVER THIRD, FOURTH AND INTERN YEAR

Previous inquiries had brought out some divergence of opinion as to the time when outpatient experience was most valuable to medical students, that is, whether such experience should precede the intern year or be simultaneous or continue during both periods. Consequently, the deans of medical schools were further questioned regarding this matter.

Their answers to the question, "In your opinion should there be experience in the outpatient department during the third year, or in both the third and fourth years of the undergraduate course?" were fairly uniform. Thirty-seven, or 86 per cent., of the deans answered that there should be outpatient experience in both the third and fourth years; four, or 9 per cent., that such experience should be in the fourth year only; one that there should be outpatient experience "probably in the third year and surely in the fourth"; and one that the third year experience should include only laboratory service. Four letters stated, further, that the third year service should be in general medicine and surgery, and that the fourth year service should be devoted to specialties.

Thirty-six of the forty-three answers, or 84 per cent., stated that there should be outpatient experience during both the undergraduate and the graduate period, if this could be arranged. Several answers expressed the opinion that, if undergraduate experience had been thorough, the service during the intern year was not so necessary. For example:

Dr. G. W. Kober, Georgetown University: If this undergraduate course is thorough, the need for interns in outpatient experience, although desirable, is less urgent.

Several other deans believed that outpatient service should be shifted from the third year to the intern year. As one[2] says:

> I cannot escape the conviction that the outpatient clinic would render far greater service in medical training if the greater part of this work came in the second half of the fourth year or, still better, were part of the intern year. In a large clinic a relatively small amount of time can be given to each patient, for all patients who come must be attended to during dispensary hours. It corresponds to the office practice of a busy physician, and the physician must work rapidly. This is the very thing the third year student cannot do. The intern or the fourth year student, on the other hand, would profit greatly by this experience.

The same view was expressed in a discussion[3] on the "Training of the Student in Medicine" in Edinburgh in 1918:

> The clinique should be restricted to senior students. . . . In our view, attendance at outpatient cliniques is not for the student who is still unfamiliar with the ordinary physical signs of disease.

The preponderance of opinion was that experience during the graduate or fifth year was being considered more and more important:

Dr. W. S. Borden, George Washington University: In my opinion, outpatient experience during both the undergraduate and the intern period is most advisable. It is necessary in the undergraduate period in order to give students knowledge of ambulatory cases, without which they could become clinically acquainted only with bed cases. During the intern year, it is advisable for the reason that without outpatient experience a very valuable year or years would be devoted to seeing only such patients as are in the hospital.

Dr. John M. Dodson, Rush Medical College: I think it might be of advantage when a medical school has entire control both of an outpatient department and of a hospital to arrange the work so that undergraduates would receive training in the wards and do work which would relieve the intern of some of his duties, thus giving the intern opportunity for some advanced type of work in the outpatient department. This could be operative only in the case of those interns serving in hospitals under the immediate control of the college. An arrangement whereby both the third and the fourth year students and the interns secure some experience in both the outpatient department and in the wards affords the best type of training.

SHOULD OUTPATIENT SERVICE BE DEFERRED UNTIL AFTER INTERNSHIP IS COMPLETED?

In the letters from medical educators, this question was not raised, but in the conferences with representative New York physicians, the point was often made that outpatient service might to advantage follow hospital internship. In actual practice, when young physicians locate in an urban community, they usually do affiliate with a hospital by becoming clinical assistants in an outpatient department. But, obviously, for the young men locating in smaller communities, such postgraduate service is not possible. Furthermore, such a system could allow the young graduate to commence office practice without the experience best suited to prepare him for it. As a graduate physician serving in the outpatient department, he might also be given complete responsibility, which he would be scarcely capable of assuming unless he had had previous experience as a student under supervision.

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[2] Hough, Theodore: The Proper Location of the State-Supported Medical School in Virginia.

[3] Matthew, Edwin: The Teaching of Medicine, Edinburgh M. J. **21**: 24 (July) 1918.

SUMMARY AND CONCLUSIONS

The opinion of medical educators and hospital administrators, as outlined above, is decidedly in favor of the use of the outpatient department as a teaching field for fifth-year medical students. Recognition of the value of dispensary experience is evidenced by the present practice of requiring intern service in the outpatient department in a very large proportion of both teaching and nonteaching institutions.

There are, however, objections to the requirement of outpatient service from a hospital in order to provide an acceptable internship, the chief of which is that, because of the character and size of the population in the district served by some hospitals, it would be difficult or impossible for them to build up a successful outpatient service. To require outpatient service would work a decided hardship on such institutions. In any case, it would not be desirable to require hospitals to develop outpatient departments too rapidly. For these reasons it does not seem advisable to suggest that the standards of the American Medical Association be changed at this time.

But there is such a decided tendency to require the fifth or intern year before the granting of the medical degree [4] or state licensure [5] that very careful consideration and control of the educational opportunities in this year are essential. In improving the educational advantages offered fifth year students in hospitals, outpatient service must not be lost sight of. Would it be desirable for the Council on Medical Education and Hospitals to state that, after a certain period of years, outpatient service would be required of hospitals offering acceptable internships, and in the interval to allow an institution to substitute an acceptable outpatient service for other weak spots in the hospital service? For example, Dr. Baldy, the commissioner of public welfare of Pennsylvania, says that:

> In a few of the institutions in which an excellent surgical service is given but only a moderate medical service, we have arranged with the authorities so to improve and utilize for intern education the dispensary service as to supplement the medical service and thereby make it sufficient to pass muster on the medical side of the education of the intern.

It may also be necessary to inquire into the need for lengthening the intern service in order to make possible the additional time to be spent in the outpatient department. It is thought, however, that time now devoted by interns to noneducational duties might well be diverted to outpatient service without lengthening the time of service. The fact that such a large proportion of teaching institutions now require outpatient department service from interns indicates that such service is not incompatible with their other duties. The educational value of ward service to the intern is unquestioned; both indoor and outpatient experience are essential. The question is one of relative values. Is not dispensary service of sufficient intrinsic importance to require a share of time during a well-rounded internship?

The problem of the intern in the outpatient department raises questions which are similar in many respects to those which affect the use of pupil nurses in this department. The nurse, like the intern, is in danger of having her work confined to that which may be helpful to the wards or the outpatient department, but which is not profitable from the educational standpoint. The subject of nursing service in the outpatient department has recently been studied by the National Committee on Public Health Nursing Education, of which Miss Josephine Goldmark is secretary, and the report of this committee, which it is expected will appear in the near future, should shed light, not only on the details of the nursing problem in the outpatient department, but also on the principles which should govern the use of medical, nursing or other professional students in connection with any phase of hospital activity.

It is obvious that there is a strong trend of influence among medical educators and leading hospital officials in the direction of greater use of the outpatient department as a teaching field for the intern. It is also obvious that the method whereby the outpatient department can best be employed as an educational field for the intern, the manner in which the intern should be supervised, and other questions, are as yet subjects for study and experiment, rather than matters on which accepted standards have already been reached. In the formulation of standards of medical education in the future, greater attention should be given by hospital organizations, by committees of the medical societies, and by the state licensing boards to the subject of outpatient service and its relation to medical education, to the training of interns, and to the standards of hospitals.

15 West Forty-Third Street.

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[4] Nine schools have adopted the intern year as a requirement for the M.D. degree: University of Minnesota Medical School, Stanford University School of Medicine, Rush Medical College (University of Chicago), University of California Medical School, Northwestern University Medical School, University of Vermont College of Medicine, University of Illinois College of Medicine, Loyola University School of Medicine, and Detroit College of Medicine and Surgery.

[5] The licensing boards in ten states require internship as an essential qualification for medical licensure: Pennsylvania, New Jersey, Alaska, Rhode Island, North Dakota, Washington, Illinois, Michigan, Iowa and Texas.

THE PRESENT STATUS OF OBSERVATION AS A CLINICAL ART

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There are few stories more fascinating than that unfolded in the history of medicine, and it is to be regretted, for many reasons, that some consideration of it does not form a more prominent part of the present-day medical curriculum.

It is of particular interest to observe the gradual evolution of teaching methods in medicine, and it is of great value to consider whether, perhaps, in the effort to supply in a relatively short time a working knowledge and competent understanding of the varied and complex minutiae which constitute the theory and practice of the medical art of today, we are not in danger of losing sight of some of the basic principles on which the teachings of the pioneers were founded and to which, indirectly, we owe much of the advance made in the present.

Of all the arts, undoubtedly, few have made greater advances in the same period of time than medicine in the last century. In fact, so rapid, so extensive and so profound have been the additions to our knowledge in some fields that only by persistent, studious effort can the man who secured his diploma within a score of years keep pace with the forward march.

The medical student of today, were he to pause to consider it, would doubtless look with envy on the disciples of Esculapius, of Hippocrates, of Galen and their contemporaries, picturing their journey along the road to knowledge as a pleasant stroll, indeed, compared to the harried and hurried rush along the path laid out for *his* footsteps.

The contemplator of their methods cannot fail to note that, perforce, all of their knowledge rested mainly on a close and keen observation of the patient and the various phenomena manifested in his condition from which various inferences and deductions, often unbelievably shrewd, were drawn.

Stripped to its essentials, the problem presented by any given case has always been the same from their day to ours; for it is an obvious and admitted fact that the intelligent treatment of any condition necessitates, first of all, a correct diagnosis; and practically all of the efforts expended in the study of a particular case are primarily directed toward the formation of a diagnosis as a working premise from which an intelligent plan of attack, as it were, can be formulated.

In the ancient days great dependence was, of necessity, placed on those things apparent to the naked eye, in a word, on the appearance of the patient and the obvious variations from the normal produced by the phenomena of his disease. Following this, in the light of past experience and the accumulated data of previous observers, came deductions as to the cause of the condition and the most favorable means of combating it, their accuracy and success depending on the keenness and intelligence of the observer.

It is natural, in the light of our present knowledge, that many of the conclusions then formulated appear ludicrous to modern eyes; but it must not be overlooked that many of the signs and symptoms then noted and described are still living entities in medical terminology —an evidence of the keenness of early observations. Moreover, to the vivid, graphic and masterly descriptions of various conditions, modern medicine has added only the discovery of the cause, and, in not a few instances, the starting point of etiologic investigations has been more or less definitely indicated by the minute details as to the distribution, seasonal incidence, and various other factors recorded by the observers of other days.

The principle on which the practice of former days rested might be said to have been, not merely the study of the disease, but rather the study of the patient as he personified the disease in question.

There are times when it would seem that the practice of modern ages would seem to be different.

If the resident physicians of today are to be—as they must—the teachers of tomorrow, and if, as perforce they do, they represent the end-result of the present-day methods of teaching, it is a matter of profound interest—and, at times, of some concern—to observe their manner of use of what they have been taught.

There is often to be noted a marked and marvelous familiarity with all the ultrascientific advances; varied and awe-inspiring are the methods of examination called into play: chemical, bacteriologic, biochemical, roentgenologic, psychanalytic and immunologic; painstakingly the "case"—the word is used advisedly—is divided into zones and sectors, and the presiding deity of each—the specialist—forthwith sent for. Laboratories of all kinds hum with activity; the blood, urine, feces, basal metabolism and blood cholesterol all are minutely examined and graphed; a snowstorm of reports rapidly falls on the chart, on which the diagnosis is, at times, ultimately to depend—and amid all this bustle one often looks in vain for some study of the patient as individual, for some realization of the fact that there are grounds for maintaining that the patient should be considered as a whole, as a complex mechanism of interlocking parts which cannot thus be ruthlessly torn asunder.

In view of this fact, it would seem timely to consider whether the importance and essential necessity of a careful observation of the patient as an individual has not been at least partially lost sight of, and whether, if some emphasis is not laid on this fact, the art of clinical observation is not in some danger of falling into decadence.

The candid observer must admit that realization of these all-important truths is not always evidenced by the residents of today, the product of the teaching methods of today.

When confronted with a possible fracture, how often is a perfunctory examination merely the precursor of a roentgenogram which makes the diagnosis instead of being the means of corroborating conclusions based on observation and the sense of touch?

Which is the more frequent procedure when confronted with an admission to the medical wards after the chief complaint has been elicited: an immediate percussion or auscultation of the chest, or a careful, keen observation of the patient, of his general appearance, his attitude, expression and posture; of the patient's chest as a part of the patient, to be followed by the stethoscope and pleximeter?

How frequently and with what care are irrelevant minutiae as to the cause of Aunt Mary's death and other features of the family tribulations spread at length on the history, while the salient and significant features of the patient's illness are lost sight of; how many "leads," indicated, perhaps, only by apparently inconsequential details, are entirely overlooked and neglected?

A correct diagnosis is, of course, a sine qua non toward which we all strive, and it should be obvious that it rests firmly and absolutely on a careful observation of the patient and an intelligent correlation of all the findings as a whole, elicited by whatever method.

Diagnosis, in brief, is merely observation plus recollection. Observation of certain phenomena manifested in the patient and elicited by his history and examination—by whatever means—and the intelligent association of these facts with the recollection that similar phenomena occur in certain conditions. As an old saying has it, "One sees only what one knows."

The keen observer who makes a habit of seeing intelligently and of correlating his observations with others in the storehouse of his memory will inevitably outstrip his colleague who relies on laboratory reports alone. There is no more valuable habit than that of observation, and none more easily acquired by constant practice. The more one trains oneself to observe, the more the attention will be attracted by variations from the normal, and by making practical use of such experience one gradually and steadily learns to observe more sharply.

But it must always be remembered that merely to observe is not enough. What is seen must be correlated and coordinated with what has been seen before, for "the perfection of observation really depends upon knowledge." As the Chinese philosopher put it: "Study without thought is vain; thought without study is dangerous. . . . To know what we know and know what we do not know—that is understanding."

It cannot be said that the apparent trend toward neglect of clinical observation is entirely a modern evil. Bacon observes that "physicians are some of them so pleasing and conformable to the humor of the patient as they possess not the true cure of the disease; and some other are so regular in proceeding according to the art for the disease as they respect not sufficiently the condition of the patient."

Observation of the patient, then, should be the very first step in the study of him: observation of him, first as a whole: his facies, his attitude, his manner of action, of speech, and the like; and to the practical observer much information will accrue, often of diagnostic information per se, and frequently of great suggestive value as indicating various possibilities to consider.

Then comes observation of the patient as to his parts, as it were: the examination or observation of the various portions and mechanisms of his body by the various means and methods available—clinical and laboratory—and, finally, their interpretation in terms of the patient as a whole and the correlation of this completed study with what is recalled of other similar studies by whomsoever made: observation plus recollection equals diagnosis.

It cannot be maintained, of course, that this regimen has fallen into disuse, but it can safely be said that certain portions of it would seem, at least, to be in grave danger of falling into abeyance.

No one can belittle the achievements of the laboratory in the development of modern medicine, for much of the advance has had either its initiation or its completion in the laboratory; but it can be asked with some justice whether or not the present trend of study has not centered upon studies in the laboratory to the detriment of study of the patient. It would be a fruitful and enlightening field of speculation, for example, to inquire in how many cases in which a Wassermann test is asked for an equally careful history and physical examination as to the possibility of syphilis had been completed; or to ascertain the number of tuberculosis cases in which the diagnosis waits upon the sputum report.

It seems trite to say that a diagnosis is—or should be—a sum total of the history, the findings in the patient, and the results of various specialized methods of examination; and yet one is at times compelled to wonder whether this is being sufficiently emphasized.

It is not the examination or the test that counts as much as it is the interpretation that is of significance.

As Aristotle says: "Ubi desinit philosophus, ibi incipit medicus" (where the philosopher leaves off, there the physician begins).

Though he wrote on a foreign subject, the principle which this paper has attempted to express is beautifully illustrated by Edwin Burke in his preface to the Essay on Taste: "In considering any complex matter"—and what is more complex than the human mechanism and the "ills that flesh is heir to"—"we ought to examine every distinct ingredient in the composition one by one and reduce everything to the utmost simplicity. . . . The greater the number of comparisons we make, the more general and the more certain our knowledge is likely to prove as built upon a more extensive and perfect induction. If an inquiry thus carefully conducted should fail at last of discovering the truth, it may answer an end as useful in discovering to us the weakness of our own understanding. If it does not make us knowing, it may make us modest. If it does not preserve us from error, it may, at least, from the spirit of error."

EXPERIMENTAL STUDIES WITH PROPRIETARY VITAMIN PRODUCTS *

JULIUS H. HESS, M.D.
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AND
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The greater attention given to the deficiency diseases by the medical profession during recent years is in large part due to our increasing knowledge of these diseases and to the excellent investigations with their productive results which have been finished during the last few years. The interest of the profession has been aroused, and that of the laity more keenly stimulated, by the widespread advertising in the daily press and magazines and through the glaring claims made by the manufacturers of some of the so-called vitamin-containing products.

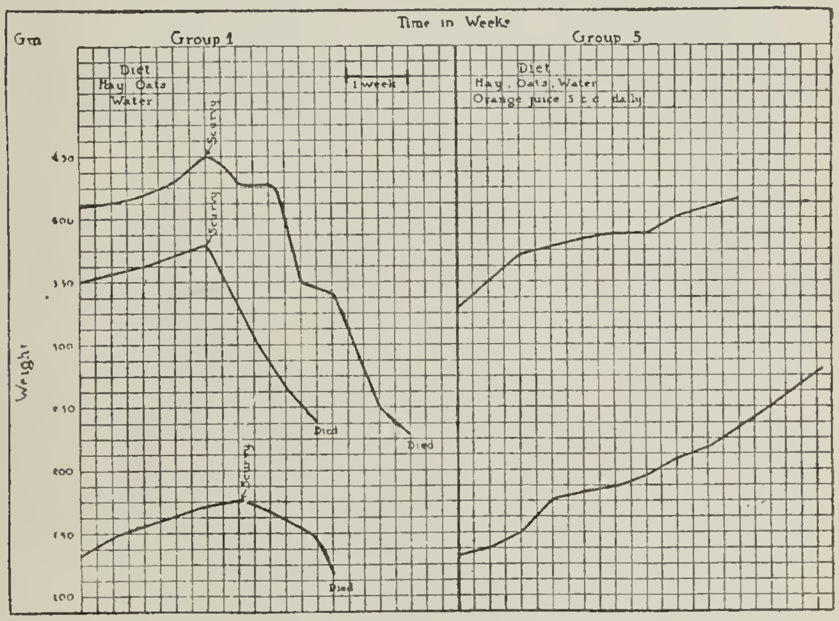

Chart 1.—Group 1: Guinea-pigs fed hay, oats and water developed scurvy on an average of from two to three weeks after beginning the diet; unless the diet was changed, they died between one and three weeks after scurvy was diagnosed. Group 5: Guinea-pigs fed hay, oats, water and 5 c.c. of orange juice daily gained rapidly and were well at the end of two months.

Because of the widespread publicity given the so-called concentrated vitamin products, we deemed it of sufficient interest and importance, for both profession and laity, to make a study of some of these products to ascertain, if possible, whether or not the claims made for them were well founded.

ANTISCORBUTIC STUDIES

It has been demonstrated that some of the vitamins can be concentrated and dry preparations made without much loss of their protective properties. Studies by Alfred F. Hess, which have been confirmed by our own experiments, have definitely shown that when fresh cow's milk, high in antiscorbutic value, is dried in a few seconds at a temperature of 110 C. and kept in hermetically sealed containers, little of its antiscorbutic property is lost. Orange juice dried under similar con-

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* Read before the American Pediatric Society, May 1, 1922, Washington, D. C.

* From the Departments of Pediatrics and Pathology, University of Illinois College of Medicine.

ditions retains the greater part of its antiscorbutic properties for a limited time. All investigators have similarly concluded that aging and oxidation of dried products made from fresh foods causes deterioration of the antiscorbutic value. Since the water soluble C vitamin has been proved the least stable of the three definitely known vitamins, we feel that tests which prove this vitamin to be still present in the dried product give a fair indication that the other vitamins have not been completely destroyed.

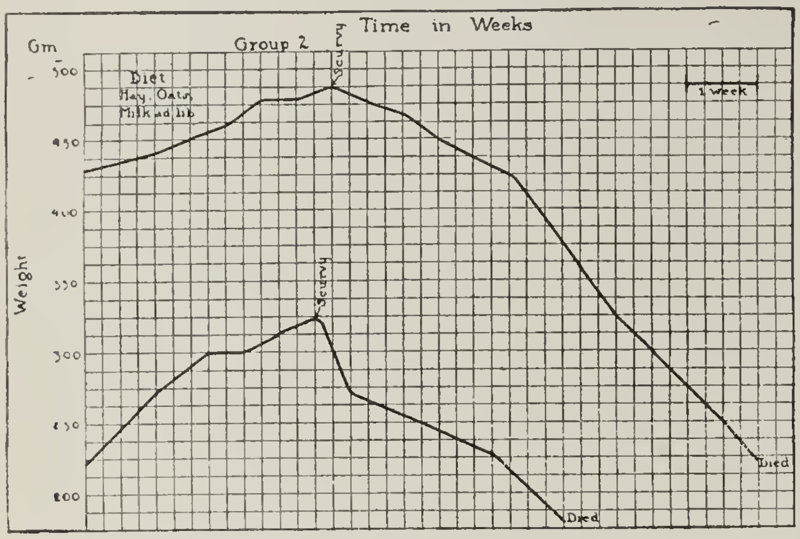

Chart 2 (Group 2).—Guinea-pigs fed hay, oats and milk developed scurvy in from two to five weeks, and died from three to six weeks later.

METAGEN

The first product which was studied is known by the trade name of Metagen. In the literature accompanying the article we find the following referring especially to scurvy:

> Under the name Metagen we are making available to the medical profession a preparation of concentrated vitamines in a convenient form for therapeutic administration. . . . Metagen is commended to the medical profession as a valuable therapeutic agent. Biological tests with pigeons, rats and guinea-pigs show that it contains the fat soluble A, water soluble B and water soluble C vitamines. . . . To summarize, then, these therapeutic indications, it may be said that Metagen, which contains the water soluble and fat soluble vitamines, can be used for its direct action in deficiency diseases—beriberi, scurvy, marasmus and malnutrition.

Our first studies were made to test out the potency of this product in regard to the antiscorbutic vitamin. Guinea-pigs, when fed a scurvy-producing diet, will usually develop the disease in from two to three weeks. Metagen was used as an accessory food in conjunction with scurvy-producing diets in a series of guinea-pig experiments.

The literature on this commercial product further recommends that:

> The usual dose of Metagen for an infant is half the contents of a five-grain capsule, mixed with a small quantity of water, which is repeated two to four times daily, between feedings. In the cases of older children, three to ten years of age, one capsule should be given three times daily before meals.

We were unable to find anything regarding the dosage necessary to protect guinea-pigs from getting scurvy, and had to make an arbitrary dosage for the animals. Since the manufacturers' literature states that a baby can be protected by 10 grains a day, we considered that, if a guinea-pig were given twice the dose recommended for an infant, the results of the experiment would be fair to the product. In comparing guinea-pig with infant requirements, Alfred F. Hess found that the former requires about one-fifth to one-third the amount needed by infants, or that 3 c.c. of orange juice a day will protect a guinea-pig from scurvy and, roughly, 10 c.c. would protect a baby.

Guinea-pigs ranging from 120 to 500 gm. were used. Group 1 was fed a standard scurvy-producing diet of oats, hay and water.

Group 2 was fed oats, hay and milk[1] ad libitum.

Group 3 was fed oats, hay and water, plus 20 grains of Metagen.

Group 4 was fed oats, hay and milk ad libitum plus 20 grains of Metagen.

Group 5 was fed oats, hay, and water or milk, and 5 c.c. of orange juice, as a control.

The Metagen was purchased on the open market. In this way we were assured of a product similar to that which would be purchased by patients for whom it might have been prescribed. For feeding purposes it was suspended in from 3 to 5 c.c. of milk and fed to the guinea-pigs with a medicine dropper as soon as possible after mixing. While some difficulty was experienced with its administration during the first two or three feedings, the guinea-pigs soon yielded to this method of feeding and took it with avidity.[2] By this method of administration we were assured that the animals in Groups 3 and 4 received the 20 grains of material daily. The 5 c.c. of orange juice given to the controls was fed in a similar manner.

RESULTS

Group 1, the animals fed on oats, hay and water, developed scurvy on an average of from two to three weeks after commencing the diet, and, unless the diet was altered, died between one and three weeks after scurvy was diagnosed.

Group 2, receiving oats, hay and milk, developed scurvy in from two to five weeks, and died in from three to six weeks unless orange juice was given.

Group 3, receiving oats, hay and water, plus 20 grains of Metagen, in every instance developed scurvy in from two to four weeks, and died of scurvy a few weeks later, unless protected by the addition of orange juice to their diet.

Group 4, receiving oats, hay and milk and 20 grains of Metagen, all developed scurvy in from two to four weeks. The scurvy progressed to a fatal termination in all animals unprotected by the addition of orange juice to the diet in from three to six weeks.

Group 5, receiving oats, hay, and water or milk, and 5 c.c. of orange juice a day, gained rapidly, and all the animals were well at the end of two months.

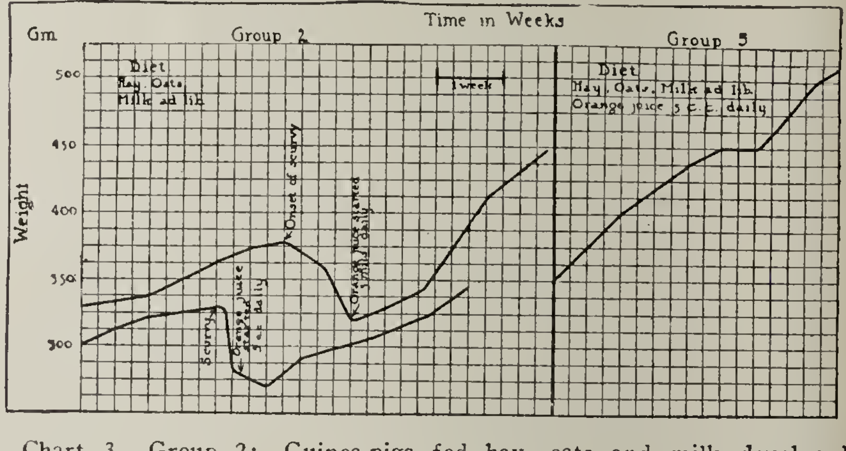

Chart 3.—Group 2: Guinea-pigs fed hay, oats and milk developed scurvy in from two to five weeks, and recovered on the addition of orange juice to the diet. Group 5: Guinea-pigs fed hay, oats, milk and 5 c.c. of orange juice daily gained rapidly, and were well at the end of two months.

Characteristic of all our groups was an early and seemingly normal gain in weight up to a few days before the clinical signs of hemorrhages and joint changes could be demonstrated. The prodromal symptoms consisted of loss of appetite, apathy and evidence of pain on handling. After the appearance of the hemorrhages, there was a persistent loss in weight and increasing listlessness until death.

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[1] The milk used was a commercial pasteurized milk. It was not reheated. Similar milk has been found by one of us to be deficient in the water soluble C vitamin.

[2] One of us raised the question as to whether the forced medicine dropper feedings might not have led to a decreased appetite and thereby, through insufficient food intake, have precipitated the scurvy. To rule out this possibility, a number of pigs had their Metagen dropper feedings continued after the addition of orange juice to their diet, which was otherwise unchanged. In these the improvement proceeded with rapidity equal to that in those in which the dropper feedings were stopped, thereby excluding loss of appetite as a direct factor.

To demonstrate the value of adding a fresh antiscorbutic to the diet of our Metagen-fed animals, orange juice was added, after the scurvy had been diagnosed clinically, from three to nine days, depending on the severity of the symptoms. With few exceptions the animals made complete recovery. In those which were left on the original diet for longer periods after the disease had developed, the recovery was slower, and in some extreme cases the disease proved fatal.

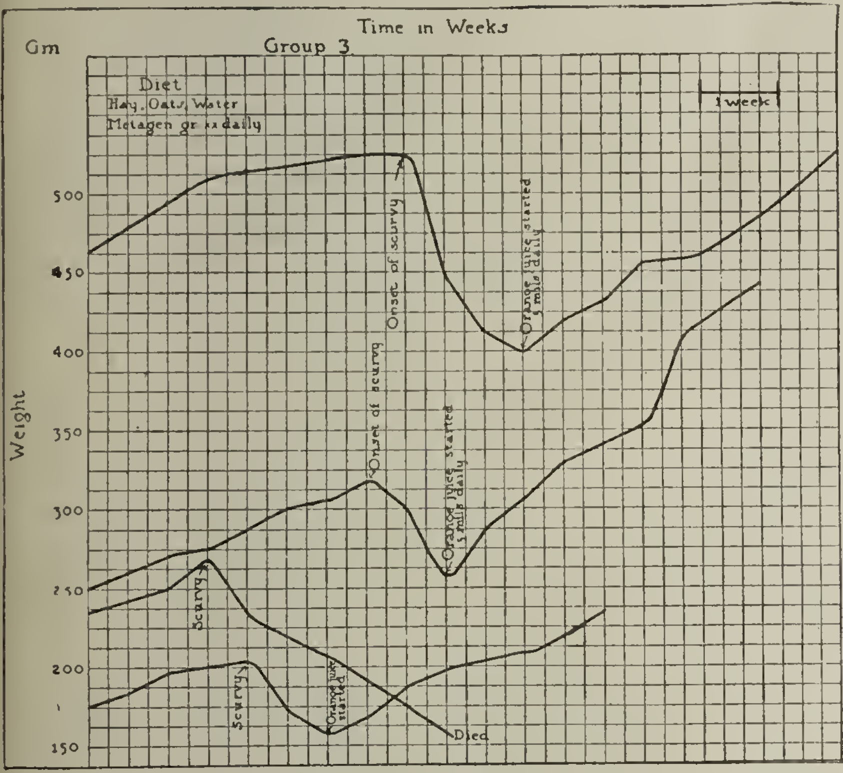

Chart 4 (Group 3).—Guinea-pigs fed hay, oats, water and Metagen, 20 grains daily, developed scurvy in from two to four weeks, and died of scurvy a few weeks later unless protected by the addition of orange juice to the diet.

CONCLUSIONS

The foregoing experiments show that Metagen as obtained on the open market contains no demonstrable amount of antiscorbutic substances, as shown by experiments on the guinea-pigs. The effect of the aging of this product after leaving the manufacturing laboratory may be of importance.

VITAMON

The second product studied is known commercially as Vitamon. Quoting from the literature on this product, in its relation to scurvy:

> Mastin's Vitamon Tablets contain not only yeast vitamines but all three of the precious vitamines—A, B and C, especially concentrated and combined with other valuable health-giving elements which your system needs to keep you strong and well.
>
> No matter what tonics or preparations you may have tried in the past or how hopeless you are of ever becoming alert, healthy, properly developed and physically fit—with strong nerves, a keen active mind, a clear skin and generally improved appearance—you will find it well worth your while to make this simple test:
>
> First weigh yourself and measure yourself. Next, take Mastin's Vitamon—two tablets with every meal. Then weigh and measure yourself again each week and continue taking Mastin's Vitamon Tablets regularly until you are satisfied with your gain in weight, "pep," energy and improved appearance. It is not only a question of how much better you look and feel or what your friends say and think—the scales and tape measure will tell their own story.

A series of experiments was made with groups fed on diets similar to those used in the foregoing experiments.

In the case of Groups 3 and 4, four tablets a day, or two thirds of that recommended for adult use, were fed to each guinea-pig.

RESULTS

The animals fed a scurvy-producing diet, plus the Vitamon, without exception developed scurvy in from fourteen to sixteen days.

PRODUCT CONTAINING DRIED ORANGE JUICE AND DESICCATED PIG'S LIVER

A third product now in the process of experimental preparation which contained dried orange juice and desiccated pig's liver was investigated at the manufacturer's request.

Only three guinea-pigs were studied with this product. The first was given 1 gm. daily, added to oats, hay and water diet, and developed scurvy within fourteen days, at which time the food was increased to 5 gm. daily. The animal died four weeks later in a very emaciated condition. The necropsy revealed typical scurvy lesions. The second animal on the same diet, with from 2 to 3 gm. of this product daily, died within seven days before any lesions of scurvy had time to develop. The necropsy revealed distended intestines filled with fluid feces. Congestion of the lungs was also present, but no apparent scurvy. The third animal received 5 gm. daily and died on the seventh day. The necropsy revealed similar findings.

All of the animals on the larger doses of this product developed diarrhea, lost weight rapidly, and finally died. It was our impression that this was due to a toxic effect of the product. It should be stated that the use of this product was started within two weeks after its receipt from the manufacturer.

CONCLUSIONS

The three products investigated were found to contain insufficient antiscorbutic vitamins to protect guinea-pigs from scurvy, when administered in quantities recommended as protecting doses for infants or children.

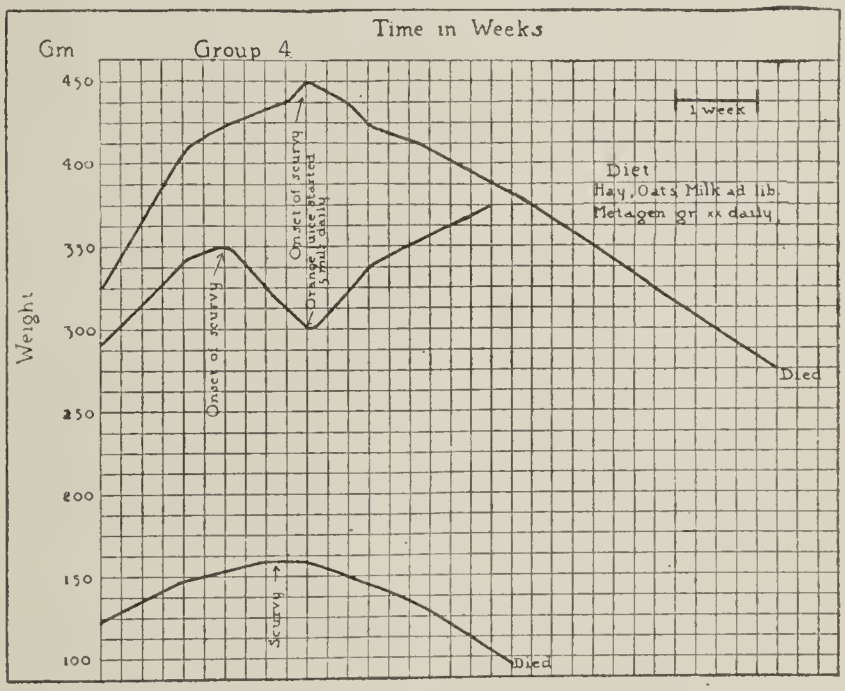

Chart 5 (Group 4).—Guinea-pigs fed hay, oats, milk and Metagen, 20 grains daily, developed scurvy in from two to four weeks, and died from three to six weeks later unless protected by the addition of orange juice to the diet.

STUDIES ON THE ANTINEURITIC VITAMIN, OR WATER SOLUBLE B

Fowl experiments were made with the concentrated commercial preparations for their antineuritic potency. It has been claimed that the water soluble B vitamin is considerably more stable and resistant to the action of heating, drying and aging than the water soluble C (antiscorbutic). This fact was considered with great interest in our further studies, in view of our conclusions that aging, more especially, may have been responsible to a large degree for the minimum content, in water soluble C, of some of the commercial products used in our guinea-pig experiments.

In testing for this vitamin, pigeons were used. These birds when fed a diet of polished rice and water, ad libitum, will ordinarily develop avian polyneuritis (beriberi) in from three to four weeks. The addition of small quantities of the water soluble B to the diet will prevent the development of this disease.

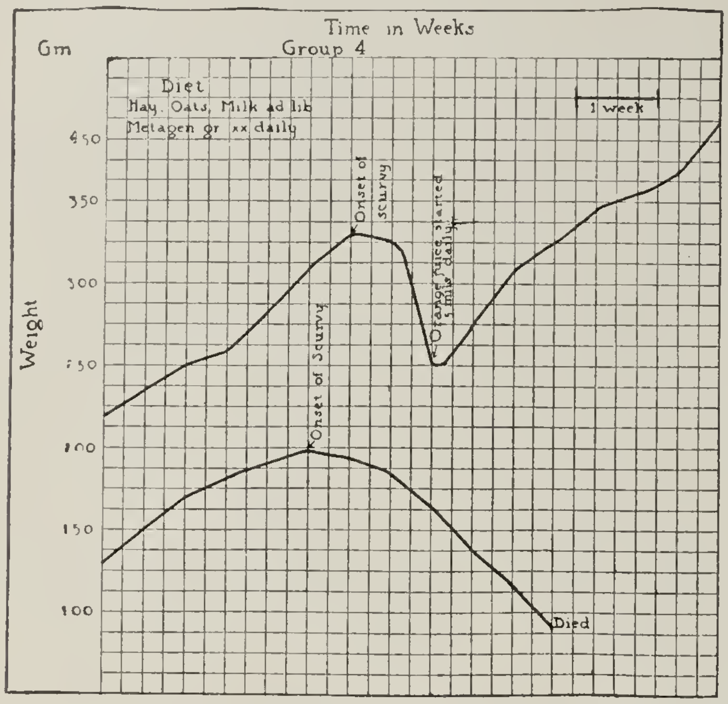

Chart 6 (Group 4).—Guinea-pigs fed hay, oats, milk and Metagen, 20 grains daily, developed scurvy in from two to four weeks, and died from three to six weeks later unless protected by the addition of orange juice to the diet.

METAGEN

Metagen was used as a possible prophylactic and curative agent in pigeons fed on the rice and water diet. We have previously quoted from the literature on Metagen, in which it is stated that it contains water soluble B vitamin. The manufacturers further state in their literature:

> This syndrome requires three or four weeks for its production, but one administration of water-soluble antineuritic vitamine will bring about complete recovery (except from loss in weight) in six to eighteen hours.

The manufacturer's literature recommends 10 grains of Metagen a day for an infant. In our experiments, twice this amount was fed to the pigeons daily by means of a medicine dropper. The product was suspended in from 3 to 5 c.c. of water and fed immediately after mixing.

Group 1 was fed a diet of polished rice and water.

Group 2 was fed polished rice and water, and 20 grains of Metagen daily.

Group 3 was fed polished rice and water, and 1 gm. of fresh commercial yeast daily (one cake of commercial yeast weighed from 12 to 14 gm.).

RESULTS

The five pigeons in Group 1 developed polyneuritis in from three to four weeks. Two of these birds were then placed on 20 grains of Metagen daily. One of the pigeons which was still in the early stages made a complete recovery after seven days of treatment. The second pigeon, which had developed the disease in a severer form, slowly recovered from polyneuritis during two weeks of treatment; the bird, however, remained very weak and died at the expiration of eighteen days. Two birds, which were kept on the diet without treatment, died within one week after the onset of the disease.

The birds in Group 2, two in number, were fed Metagen from the start. One pigeon remained free from beriberi for two and one-half months, and then rapidly developed a very severe degree of this disease, which responded rapidly to treatment with yeast. The other pigeon, after remaining free from polyneuritis for five weeks, was taken off Metagen, and developed the disease eighteen days later. While it was still in a mild form, Metagen (same dosage) was restarted, and the pigeon fully recovered in a week and was still in good condition three weeks later.

While two birds may seem a small number from which to draw conclusions, certain prominent facts were noted. The first one which developed polyneuritis showed signs only after ten weeks, about six weeks later than the controls. The second bird developed the disease after eighteen days on rice and water, following removal of Metagen from the diet; that is, in a somewhat shorter period than the normal control birds. For recovery from this attack the bird required one week on Metagen, 20 grains being administered daily.

The birds in Group 3 receiving fresh yeast were free from signs of polyneuritis after a period of three months. When stale yeast was used, which had become yellowish and soggy, they developed the disease in about six weeks.

VITAMON

Vitamon was studied in a similar manner in two pigeons.

The dose was six tablets daily, the recommended adult dose. We have already quoted from the literature of the producer, in which it is stated that this product contains the concentrated yeast vitamins.

RESULTS

Two pigeons developed a very severe polyneuritis in about seven weeks. They recovered rapidly when Vitamon was stopped and 1 gm. of fresh commercial yeast fed daily. One of the birds, which had developed polyneuritis and was cured again with fresh yeast, was again placed on Vitamon, and redeveloped clinical signs within two weeks.

YEAST VITAMINE-HARRIS

Yeast Vitamine-Harris also was studied. Quoting from the manufacturer's literature:

> Each Yeast Vitamine-Harris tablet, by actual biological test, contains approximately the amount of water soluble vitamine found in an ordinary domestic cake of bakers' yeast.

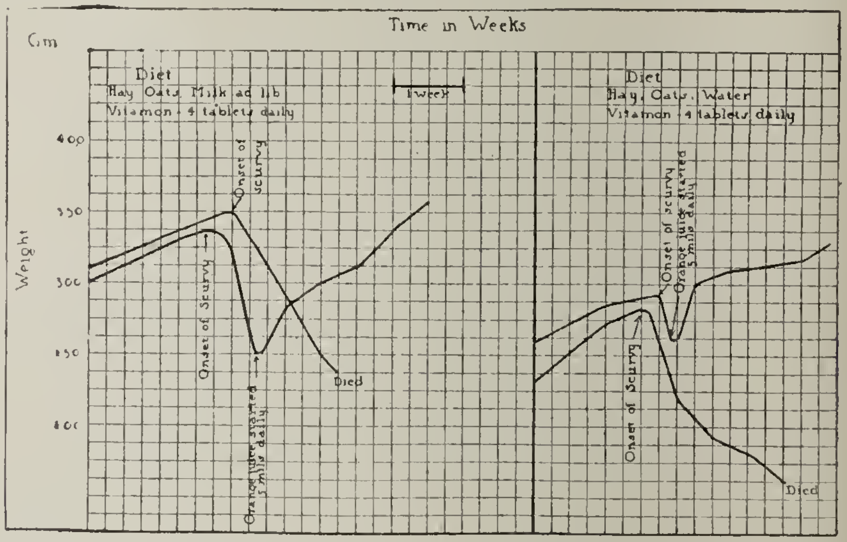

Chart 7.—Guinea-pigs fed hay, oats, milk or water and Vitamon, four tablets daily, developed scurvy in from fourteen to sixteen days, and died within two weeks unless protected by the addition of orange juice to the diet.

> The tablets can be taken whole; two, three times daily. It will not endure prolonged heating with other foods.

This product was studied in a similar manner to Vitamon.

RESULTS

One pigeon receiving rice, water and three tablets of Yeast Vitamine-Harris has remained free from polyneuritis for three months. Other pigeons on a similar diet, but for a shorter time, also remained well. One pigeon on this product remained well for five weeks; when the tablets were stopped, subsequently, after fifteen days on rice and water, it developed polyneuritis of a severe type, and, after again being placed on three tablets of the same product daily, made a complete recovery, and is still well one month later. It showed great improvement within twenty-four hours. However, it should be noted that, according to the manufacturer, each pigeon was receiving daily water soluble B equivalent to that contained in three cakes of fresh yeast.

PRODUCT CONTAINING DRIED ORANGE JUICE AND DESICCATED PIG'S LIVER

Two pigeons were studied with a product containing dried orange juice and desiccated pig's liver.

The first pigeon, receiving 1 gm. daily, died at the end of three weeks without clinical evidence of polyneuritis. The second bird was allowed to develop the disease on rice and water, after which it was placed on 2 gm. of this product daily while the disease was still in its early stages. The pigeon, however, became progressively worse until it was unable to stand.

SUMMARY OF WATER SOLUBLE B PIGEON EXPERIMENTS

All pigeons fed on a diet of polished rice and water developed experimental polyneuritis on an average in three to four weeks. Those fed on the same diet but receiving 1 gm. (one-twelfth cake) of fresh commercial yeast daily remained free from the disease at the end of three months. One of the birds which received stale commercial yeast developed this condition at the expiration of six weeks.

A pigeon fed on Metagen as prophylactic treatment remained free from signs of polyneuritis for a period of ten weeks, after which time the disease developed. Birds in which the disease had developed were cured by the administration of Metagen, but less rapidly than pigeons in a similar condition placed on fresh yeast.

Pigeons on Vitamon developed polyneuritis, although less rapidly than the control birds, averaging about six weeks.

Yeast Vitamine-Harris Tablets prevented and cured polyneuritis in a manner similar to fresh yeast. In our experimental work, however, the equivalent of three cakes of yeast was fed daily.

CONCLUSIONS

It appears from the foregoing experiments that the process of manufacture and subsequent aging of the concentrated vitamin products have not caused as much deterioration of the antineuritic as of the antiscorbutic properties. All the products studied were very low in antiscorbutic properties, and while all of them contained water soluble B, they had a much lower potency than fresh yeast, with the possible exception of the Yeast Vitamine-Harris preparation.

The discovery of the vitamins, their classification and their relationship to nutrition, both in health and in disease, must be considered one of the great contributions to medical science. However, the claims that one or all of the known vitamins can be prepared for dispensing in a concentrated form which will not be affected by drying, aging and oxidation are, in the light of our experimental work, open to great question.

It is becoming more firmly fixed in the minds of leading investigators that, except to meet specific indications, as in times of famine and certain economic upheavals, such as in war, the best method of obtaining sufficient vitamins is through a proper selection of foods. Vitamins should be obtained from the dairy, the grocery and the market, not from the drug store.

ACUTE MERCURIAL POISONING FROM VAGINAL INJECTION

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A few reports have appeared in the literature of acute mercurial poisoning resulting from the use of vaginal irrigations. None of these have followed the therapeutic application of such solutions, administered or advised by physicians, but all have occurred from efforts on the part of the patients themselves, chiefly as a preventive to conception.

REPORT OF CASE

Mrs. W. W., aged 23, a patient of Dr. W. R. Phillips, was the mother of two children, aged 22 and 8 months. She was nursing the younger child. Her labors had been normal, and she had never been sutured. She had been in the habit of irrigating the vagina twice weekly for some months with solutions of mercuric chlorid, using for the purpose a bulb syringe with an open, rectal nozzle, holding about 1,000 c.c. She never before experienced any ill effects from her douches.

Having passed her usual menstrual period by about two weeks, and fearing that she was again pregnant, on the night of March 20, 1922, she prepared a solution stronger than any she had previously used, dissolving one 7.3 grain (0.5 gm.) tablet in a pint (500 c.c.) of water.

Within an hour after the injection she was seized with violent pains in the lower abdomen, followed shortly by vomiting. Her physician was called and found her suffering intensely. The temperature was 97.6 F., and the pulse 100. He gave her a copious vaginal irrigation of warm water, milk and eggs by mouth, and a hypodermic injection of one-fourth grain of morphin for pain. A profuse and painful diarrhea began about two hours after the onset, with the passage of much blood-stained fluid. The vomiting continued.

The secretion of urine was markedly increased during the first five or six hours, after which it diminished until at the end of fourteen hours there ensued complete suppression. No change was noted in the quality or quantity of the milk, although nursing was interdicted and the breasts were drained with a pump.

In forty-eight hours she was seen in consultation. The vomiting and diarrhea were persistent. The temperature was slightly subnormal, the pulse 100 and of good quality. The mental condition was excellent. There were extensive gingival and buccal ulcerations and the breath was extremely foul, but there seemed to be no increase in the flow of saliva. The vaginal surfaces were ulcerated. The abdomen was moderately distended; there were frequent passages of bloody fluid with a few clots, and the patient still had attacks of vomiting. About 6 c.c. of yellow, turbid urine was obtained by catheter, examination of which revealed acid reaction, much albumin, no sugar, and sediment. Microscopically, there were blood and tube casts, with swollen cell remnants and débris from all portions of the kidney.

A modified Lambert-Patterson routine of treatment was begun. Four grams (60 grains) of potassium acetate to 500 c.c. (a pint) of water was given by rectal drip as a continuous proctoclysis. Albumin water and milk were given every hour by mouth, together with 4 gm. of sodium phosphate. Hypodermic injections of morphin were frequently necessary to control the pain accompanying the diarrhea. Hot packs were placed over the kidneys.

The patient's condition remained much the same until the sixth day, with subnormal temperature, vomiting, diarrhea and suppression of urine. The pulse became weak and rapid, and she died on the seventh day. The mind remained clear until a few minutes before death.

Necropsy revealed a general peritonitis of moderate degree. In the region of the hepatic flexure of the colon, the intestine, for a distance of about 14 inches, was markedly inflamed and infiltrated. The kidneys showed no increase in size, but were uniformly congested. The substance, on section, presented a cooked appearance. The pyramids were extremely prominent. The capsules stripped readily.

The uterus was normal in size, position and consistency. The ovaries appeared to be normal. The distal ends of both tubes were moderately inflamed and swollen. There were no other changes in any of the abdominal or pelvic viscera.

COMMENT

From the sudden onset of the symptoms in this case, it is highly probable that the solution passed into the uterus, and thence through the tubes into the peritoneal cavity, where it was rapidly absorbed. The absence of coma or other nervous and mental symptoms distinguish the case from toxic uremia. The paucity of necropsy findings was undoubtedly due to the short duration of the illness.

A similar fatal case was reported by Millar,[1] together with two cases by Campbell,[2] one of which resulted in death. Bland[3] has reported three cases with two deaths. In his case, in which the patient recovered, there were no general symptoms, although the local ones were severe. DePorte[4] records a case in which two 7.3 grain tablets of mercuric chlorid were inserted into the vagina. The absorption was so rapid that the patient died in twenty-four hours. The patient of McPeek[5] recovered after complete suppression of urine for seventy-two hours. Albumin and casts were found in the urine four months later.

The treatment in no way differs from that used when the poison is taken by mouth, with the exception of flushing the vagina with water. The antidotal and eliminative methods of Lambert and Patterson[6] or of Weiss,[7] when carried out early, offer the best hopes of success. The damage to the kidneys is irreparable, and, if early urinary suppression intervenes, the chances of a favorable issue are remote.

IN BEHALF OF THE STOMACH TUBE[*]

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There is a growing tendency in this country to underestimate the value of the stomach tube in the diagnosis of diseases of the stomach and intestine. While no one can discredit the use of the roentgen ray for the purpose, nevertheless, it is timely to recall that the stomach tube, which has a long and honorable record, is not yet obsolete, but continues to afford material assistance in the proper clinical interpretation of roentgenologic findings, and may be an invaluable help to the general practitioner who has access neither to an expert roentgenologist nor to a well equipped laboratory.

According to Garrison, it is likely that the idea of introducing a hollow tube into the esophagus or larynx occurred to more than one person before 200 B. C. Whether or not this is true, the "stomach brush" was in usage throughout Europe about 1700 A. D., and the stomach tube was introduced to the medical profession by Physick of Philadelphia, in 1812, when he described "a new mode of extracting poisonous substances from the stomach," although Sir Astley Cooper's demonstration of the stomach pump for the same purpose to his students at Guy's Hospital, in 1823, is more generally known. Kussmaul, in 1869, used the tube in the treatment of pyloric stenosis, and initiated the large volume of work which has been done subsequently with gastric intubation for diagnosis or treatment. He was followed by Ewald in Germany and more recently in this country by Einhorn, Rehfuss, Sippy, Lyon and others. During the past decade, however, the importance of the tube for the diagnosis of gastric disease has been ignored by many physicians, apparently because of the more startling progress in roentgenology (Fig. 1).

Shortly after Roentgen's description of the ray which bears his name was published, Wolf Becher, a practicing physician in Berlin, made the first recorded roentgenologic picture of the stomach. Becher learned from reading Roentgen's paper not only that certain metals were impenetrable to the rays, but that the salts of these metals were likewise impenetrable. It occurred to him that this fact might become of clinical importance in the diagnosis of internal conditions if the hollow organs could be filled out with such salts and their silhouettes thus photographed. Accordingly, he killed a guinea-pig and injected the stomach with a solution of lead subacetate. On account of various technical difficulties, an imperfect injection was obtained. However, a subsequent roentgenogram of the body of the animal showed, hazily, the outlines of the stomach. Since then, as every one knows, roentgenologic technic and knowledge have been greatly perfected (Fig. 2).

PURPOSES AND LIMITATIONS OF THE TEST MEAL

Rehfuss and Hawk[1] have recently discussed the fundamental principles of test meals and gastric analyses. The examination of the contents of the stomach after a test meal has for its specific objects the determination of gastric motor activity, the determination of gastric secretory activity, and the recognition of such pathologic products as may offer a clue to the type of gastric disease present. Test meals and gastric analyses do not reveal changes in the form, position, contour or mobility of the stomach, nor are they designed to reveal such changes, which rightfully belong to the province of the roentgen ray.

Rehfuss and Hawk emphasize the necessity of the standardization of test meals in order to obtain any satisfactory understanding and interpretation of the results of their usage. This point is of great importance. All test meals have the same underlying principle, the record of the stomach's response to a known stimulus. The response of the stomach in shape and mobility to the stimulus of barium is visualized by the fluoroscope and roentgenogram, or its chemical reaction is studied by analysis of the gastric contents after food stimulation. It is illogical to expect that results from one type of test meal will always, by necessity, agree with the results from another and different type. For example, the fact that bread and water is retained by one stomach for an abnormally long time, thus demonstrating an abnormal mobility to this specific meal, does not necessarily mean that the same stomach will reveal an abnormal retention of barium, nor does the fact that normal gastric acidity is demonstrable by the Ewald meal mean that high acid values will not be demonstrable in the same case after a test meal of different character. In interpreting the results of test meals, therefore, it is important to compare the results in a given case with the results of a series of normal cases studied in exactly the same manner, and to interpret the results in terms of the test meal that is used. Positive results with any type of test meal are always significant.

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[1] Millar: Brit. M. J., Aug. 14, 1917.

[2] Campbell, W. R.: Mercuric Chlorid Nephrosis, Arch. Int. Med. **20:** 919 (Dec.) 1917.

[3] Bland, P. B.: Mercuric Chlorid Poisoning from Vaginal Injections—Two Fatal, J. A. M. A. **74:** 1227 (May 1) 1920.

[4] DePorte, Seymour: Rapid Absorption of Mercuric Chlorid in a Case of Poisoning, J. A. M. A. **74:** 1230 (May 1) 1920.

[5] McPeek, Clayton: An Unusual Case of Mercuric Chlorid Poisoning, J. A. M. A. **75:** 672 (Sept. 4) 1920.

[6] Lambert, S. W., and Patterson, H. S.: Poisoning by Mercuric Chlorid and Its Treatment, Arch. Int. Med. **16:** 865 (Nov.) 1915.

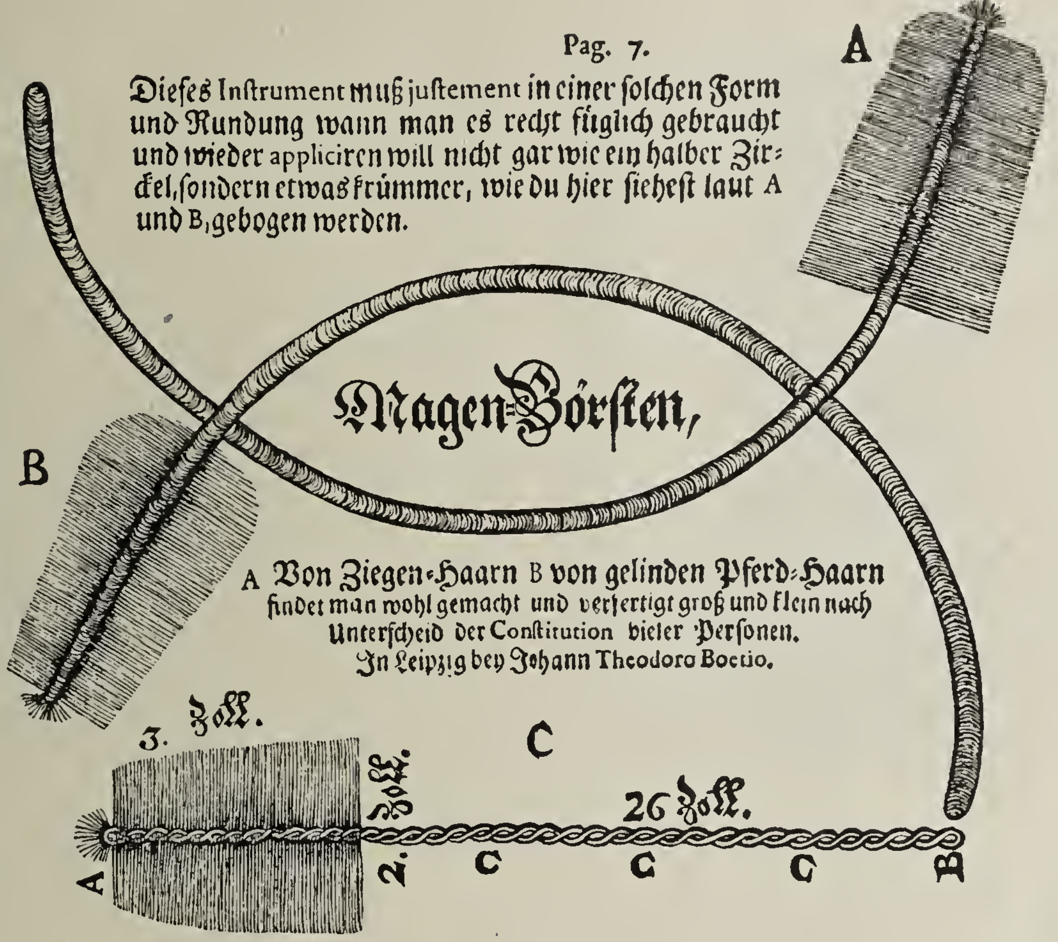
[7] Weiss, H. B.: The Principles of Treatment in Mercuric Chlorid Poisoning, J. A. M. A. **71:** 1045 (Sept. 28) 1918.

[*] From the Section on Medicine, Mayo Clinic.

[*] Presented in abstract before the American Association of Physicians, Washington, D. C., May 2, 1922.

[1] Rehfuss, M. E., and Hawk, P. B.: Gastric Analysis, I, Fundamental Principles, J. A. M. A. **76:** 371-373 (Feb. 5) 1921.

A great many types of test meal have been advocated for the study of gastric function, with both the roentgen ray and the stomach tube. The meal which has been most generally and satisfactorily used is that of Ewald and Boas. This consists, as modified by Eusterman in the Mayo Clinic, of 400 c.c. of cool water and 36 gm. of arrowroot biscuit given without preliminary lavage, to a stomach which has not received food or fluid during the previous twelve hours. Elaborate preparation is not required except that on the evening before the test, each patient is requested to eat an ordinary supper which contains meat, and about twelve hours before the test is made, a few dried raisins. The total gastric contents are removed through a Rehfuss tube an hour after the test meal is taken except in cases in which there is gross food retention, when a larger tube is used, and the gastric acidity for each hundred cubic centimeters is estimated by titration in terms of tenth normal acid. The free hydrochloric acid is determined by Töpfer's reagent, and the total acidity by phenolphthalein. The gastric content is also measured, sedimented, examined microscopically, and tested for the presence of occult or gross blood.


Pag. 7.

Dieſes Inſtrument muß juſtement in einer ſolchen Form und Rundung wann man es recht füglich gebraucht und wieder appliciren will nicht gar wie ein halber Zirckel, ſondern etwas krümmer, wie du hier ſieheſt laut A und B, gebogen werden.

Magen-Börſten,

A Von Ziegen-Haarn B von gelinden Pferd-Haarn findet man wohl gemacht und verfertigt groß und klein nach Unterſcheid der Conſtitution vieler Perſonen.
In Leipzig bey Johann Theodoro Boetio.

Fig. 1.—Stomach brush, from a book by Socrates published about 1700 A. D. The illustration was obtained from the Surgeon General's Library through the courtesy of Colonel Garrison.

INTERPRETATION OF TEST MEAL FINDINGS

Various textbooks and manuals of laboratory technic outline slight modifications of these methods for the study of gastric contents. It has become a general custom to estimate only the percentage concentration of acidity, emphasizing hyperacidity, normal acidity, subacidity or anacidity as revealed by this test meal, and to consider the presence of occult blood or gross food remnants as of definite pathologic significance.

Such an interpretation of gastric acidity, theoretically, is open to at least one serious fallacy. Carlson [2] and Rosemann [3] have both called attention to the fact that there is no evidence for the assumption that the gastric glands are able to secrete hydrochloric acid in greater concentration than between 0.55 and 0.60 per cent. under any conditions. These glands may secrete acid less concentrated at times; but hyperacidity in the strictest sense of the word does not exist. It would seem, therefore, that percentages of acidity which appear to be higher than average normal acid values might be so because of concentration of acid of less than normal strength in the stomach through a specific absorption of water, or because of rapid excretion of water through the pylorus. On the other hand, acid values which appear lower than normal in terms of percentage might be derived from gastric juice of ordinary concentration which has become diluted by fluid retained in the stomach. In any event, it would seem rational to consider the possible relationship of the volume of the gastric contents at the time of the analysis to the percentage of acidity.

Formerly, when the gastric content was expressed through a large stomach tube it was impossible, as shown by Harmer and Dodd,[4] to empty the stomach with any constancy. Rehfuss, Bergeim and Hawk [5] have since demonstrated that the stomach can be emptied with greater regularity and thoroughness if the content is aspirated through a small tube. Therefore, a gastric content, sufficiently complete for clinical purposes, can be obtained after a test meal, and the concentration of hydrochloric acid in the sample, as well as the total volume of fluid which has been retained in the stomach as the result of a known stimulus, can be estimated with a fair degree of accuracy.

The results of Ewald test meals from 1,039 patients in the Mayo Clinic, in whom the diagnosis was controlled by roentgen-ray examination or laparotomy, were analyzed in order to determine whether such information could be correlated and expressed mathematically. The concentration of free hydrochloric acid expressed as cubic centimeters of tenth normal hydrochloric acid for each hundred cubic centimeters of gastric content was estimated as described. This figure was multiplied by the total volume of the gastric sample in cubic centimeters, and divided by 100. This product, in turn, was multiplied by the square root of the cubic centimeters of free acidity in order to give consideration to the concentration of acid as well as to the total volume of the sample. Such a formula is purely arbitrary, and is based on Ambard's[6] formula for urea excretion. It was chosen because the square root of any number was readily obtained on the 10-inch slide rule with which the results were calculated, and because this formula apparently gave results which were of greater interest than those obtained from a consideration of the acid concentration or total volume alone. The free hydrochloric acid value was used in this survey as a matter of convenience and because it seemed to be as significant as the total acid value. The main features of this study are incorporated in the accompanying tables.

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[2] Carlson, A. J.: A Note on the Chemistry of Normal Human Gastric Juice, Am. J. Physiol. **38**: 248-268, 1915.

[3] Rosemann, R.: Zur Physiologie und Pathologie der Säureabsonderung der Magenschleimhaut, Arch. f. path. Anat. u. Physiol. **229**: 67-87, 1920.

[4] Harmer, T. W., and Dodd, W. J.: Sources of Error in the Use of the Stomach Tube for Diagnosis, Arch. Int. Med. **12**: 488-502 (Nov.) 1913.

[5] Rehfuss, M. E.: Bergeim, Olaf, and Hawk, P. B.: Gastro-Intestinal Studies, I, The Question of the Residuum Found in the Empty Stomach, J. A. M. A. **63**: 11-13 (July 4) 1914.

TABLE 1.—RESULTS OF THE EWALD MEAL WITH TWENTY-EIGHT NORMAL MEDICAL STUDENTS

	Gastric Content			
Case	Total C.c. (a)	C.c. N/10 Free Hydrochloric Acid for Each 100 C.c. (b)	$(c) = \frac{a \times b}{100}$	$c\sqrt{b}$
53	40	6	2	5
8	17	0	0	0
31	50	21	10	46
18	205	27	55	286
52	76	35	27	160
21	75	25	19	95
20	40	20	8	36
13	10	23	2	10
40	48	23	11	53
24	450	17	76	313
62	40	20	8	36
22	100	10	10	32
17	180	24	43	211
2	85	26	22	112
52	76	35	27	160
47	100	32	32	181
25	225	14	31	116
16	32	16	51	204
32	75	51	38	272
38	150	35	52	318
19	349	42	146	950
11	80	33	26	150
4	200	44	88	585
3	220	52	114	825
1	80	60	48	372
7	12	25	3	15
5	200	40	80	506
36	125	65	81	654
Average	119	29	34	183
Average of 100 normal Mayo Clinic cases	148	29	43	232

ESTABLISHMENT OF NORMAL VALUES

At the outset, normal values for gastric acidity, when estimated in this manner after an Ewald meal, were established by calculating the results obtained from twenty-eight healthy medical students reported by Wheelon,[7] and comparing them with the results obtained from 100 patients in the Mayo Clinic who did not have gastro-intestinal lesions demonstrable by the roentgen ray, or by physical examination (Table 1). Wheelon's medical students showed a disconcerting variability in concentration of free hydrochloric acid, and in total amount of fluid aspirated from the stomach after an Ewald meal, as did the 100 normal patients in the Mayo Clinic series, although the averages for the two groups were close. However, only three of Wheelon's students, and not one of the Mayo Clinic patients, had an acidity by the formula of more than 600 units, and only one had an acidity of more than 600 units with a gastric content of more than 300 c.c. Assuming that results might be the same in a larger group, the data from the 1,039 patients in the Mayo Clinic were classified as follows:

Group 1, 730 patients with normal values, including all with total free acidity of less than 600 units by the formula.

Group 2, 171 patients with anacidity, including all without free hydrochloric acid demonstrable.

Group 3, eighty-nine patients with hyperacidity, including all with total free acidity of more than 600 units by the formula, but with a gastric content of less than 300 c.c.

Group 4, forty-nine patients with hyperacidity and stasis, including all with free acidity of more than 600 units by the formula and with a gastric content of more than 300 c.c.

Group 1. Of the 730 patients with normal gastric acidity as calculated in this manner, only ninety-two (13 per cent.) had organic diseases of the stomach. In other words, normal acid values excluded the presence of organic disease of the stomach with comparatively small error. Moreover, in only seven of the ninety-two patients in whom the diagnosis was overlooked were the conditions due to operable carcinoma. However, that operable carcinoma of the stomach may give normal test meal findings must be emphasized. A series of 200 proved cases of this type was analyzed in order to establish the point. In approximately one third of these the gastric acidity was normal after the test meal, and might, therefore, have been overlooked on test-meal findings alone. The patients with gastric and duodenal ulcers who made up the remaining eighty-five normal patients in the group illustrate how information derived from the test meal may be of value in treatment. Operations for gastric or duodenal ulcer have three definite purposes, namely, to effect rapid and permanent relief of symptoms, to reduce acidity, and to relieve motor insufficiency. It would seem logical to delay operation on patients with ulcer with normal gastric acidity and without pyloric obstruction, except when perforation or hemorrhage necessitates immediate surgical intervention, until a reasonable trial of medical treatment has been made, on account of the possibility that such cases are of infectious origin and differ in etiology from cases associated with hyperacidity. Twelve patients with duodenal or gastric ulcer on whom gastro-enterostomies were performed in the Mayo Clinic, and who returned later with gastrojejunal ulcers, were studied in order to discover what proportion belongs to Group 1. The results of this analysis appear in

TABLE 2.—THE EWALD MEAL IN TWELVE PATIENTS WHO WERE OPERATED ON FOR GASTRIC AND DUODENAL ULCER IN THE MAYO CLINIC AND WHO WERE OPERATED ON LATER FOR GASTROJEJUNAL ULCER

	Gastric Content				
Case	Total C.c. (a)	C.c. N/10 Free Hydrochloric Acid for Each 100 C.c. (b)	$(c) = \frac{a \times b}{100}$	$c\sqrt{b}$	Operations
A174821	60	40	24	152	10/ 9/16 and 7/27/21
A160721	50	38	19	117	6/ 3/16 and 12/28/17
A229079	80	52	42	303	5/ 3/18 and 12/ 3/18
159741	50	74	37	319	5/25/18 and 9/ 4/18
185473	110	56	62	465	3/21/17 and 3/20/18
156906	90	74	67	575	1/18/17 and 1/ 2/20
119416	250	30	75	410	11/27/14 and 11/17/17
129682	70	60	42	325	5/ 4/15 and 4/30/18
117055	50	66	33	268	2/ 2/17 and 9/17/18
A118450	250	48	120	832	11/11/14 and 6/21/17
A118945	250	80	200	1790	11/17/14 and 5/ 2/17
A294424	710	56	398	2980	11/ 6/19 and 9/10/20

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[6] Ambard, L.: Physiologie normale et pathologique des reins, Paris, Masson & Cie, 1920, 368 pp.

[7] The Ewald meal used by Wheelon consisted of two slices of white bread, and 500 c.c. of water. The stomach was emptied an hour after the test meal was ingested. The titrations were made according to the method described (Wheelon, H.: Relation of the Gastric Content to the Secretory and Motor Functions of the Stomach, Arch. Int. Med. **28**: 613-631 [Nov.] 1921).

Table 2. As may be seen, nine patients had normal acidity according to the formula, and only one had hyperacidity with stasis previous to the first operation. The patients are too few in number to furnish significant data, although one is led to suspect that these nine patients might have derived as much permanent benefit from a preliminary course of medical treatment and removal of focal infections as they did from the original operations.

TABLE 3.—CASES OF HYPERACIDITY AND STASIS DEMONSTRATED BY THE ROENTGEN-RAY AND OPERATIVE FINDINGS *

Case	Total Gastric Content, C.c.	Acidity, Units	Roentgen-Ray Evidence of Gastric Retention	Condition of the Stomach at Operation
1 (A 323736)	300	818	0	Pyloric obstruction 1+; stomach dilated 1+
2 (A 308763)	305	1,075	0	Pylorus narrowed; stomach not dilated
3 (A 335773)	300	1,260	3	Duodenum markedly deformed; stomach normal
3 (A 313720)	320	647	1 to 2	Stomach dilated 1+
5 (A 314960)	325	1,352	0	Pyloric obstruction 2; stomach not dilated
6 (A 311801)	375	1,660	0	Stomach dilated 2+
7 (A 342179)	400	1,240	2	Pyloric obstruction 2; stomach dilated to twice normal size
8 (A 342365)	425	920	0	Stomach dilated 1
9 (A 331481)	480	2,000	2	Marked obstruction; stomach very large
10 (A 320917)	500	1,770	3	Marked obstruction; stomach much dilated
11 (A 318691)	500	822	2	Marked obstruction; stomach much dilated
12 (A 314602)	510	1,800	2	Stomach slightly dilated
13 (A 313721)	570	755	3	Pylorus constricted; stomach dilated 2 to 3
14 (A 328318)	1,000	1,980	3	Stomach dilated 2
15 (A 341863)	1,000	3,980	3	Stomach dilated 3
16 (A 316882)	1,000	2,920	2	Stomach markedly dilated
17 (A 312503)	1,000	1,482	2	Stomach markedly dilated
18 (A 251053)	1,010	649	3	Stomach markedly dilated
19 (A 324357)	1,025	3,200	3	Stomach markedly dilated
20 (A 324127)	1,200	3,184	3	Stomach markedly dilated

* In this table the degree of stasis and pyloric obstruction is measured on the basis of 1 to 4.

Group 2. Of the 171 patients with anacidity, thirty-one (18 per cent.) had cancer in or adjacent to the stomach. Three other definite maladies were often associated with anacidity: pernicious anemia, well marked arteriosclerosis in elderly persons, and chronic diarrhea. There were, besides, a large number of cases in younger persons recorded as achylia gastrica. The chief point of interest to this paper, brought out by this group as a whole, is the fact that while anacidity is a frequent accompaniment of gastric cancer, yet, cancer is by no means the most common cause of anacidity. In a given case of anacidity, therefore, cancer may be logically suspected, but must be demonstrated by other methods before a positive diagnosis can be made.

Group 3. The most striking feature of the group of eighty-nine patients with hyperacidity without stasis was that 50 per cent. had associated demonstrable organic lesions in the stomach, duodenum, gallbladder or appendix. In the absence of roentgenologic control, it meant that there was an even chance that the gastric symptoms for which the test was made were due to organic lesion which was often operable, and with negative roentgenologic findings that the hyperacidity might be reflex from chronic appendicitis or cholecystitis. In the presence of hyperacidity, a very careful history must be taken and the examination for these conditions must always be made, before we fall back on the diagnosis of a functional type of indigestion.

Group 4. Of the forty-nine patients in this category, forty-two (86 per cent.) were considered to have lesions in the abdominal cavity, and only seven (14 per cent.) were classified as having a functional type of indigestion. Furthermore, twenty-four of the twenty-five patients with gastric content of more than 400 c.c. had obstructive lesions near the pylorus, as proved by the roentgen ray or by laparotomy. The data concerning patients with pyloric obstruction who were operated on and in whom the surgeons noted the size of the stomach were tabulated in order to compare the information gained at the operating table with that obtained beforehand with the roentgen ray and the stomach tube (Table 3).

The results from both diagnostic methods were essentially alike in revealing any marked disturbance of gastric motor functions. This is of practical importance, because pyloric obstruction is a form of intestinal obstruction which is often treated surgically. Whenever the diagnosis can be accurately established by the tube, therefore, the stomach should be washed clean and kept emptied previous to operation. Any more complicated test meal is unnecessary and may be dangerous.

Fig. 2.—Roentgenogram of guinea-pig (from Becher).

SUMMARY AND CONCLUSIONS

In order to recall the clinical importance of the stomach tube in diagnosis, and to reawaken interest in one of our oldest and most simple laboratory procedures, an attempt was made to standardize the Ewald test-meal findings according to a mathematical formula which gave significance to the total volume of the gastric content as well as to the free acidity for each hundred cubic centimeters. The results appeared to be of clinical interest. By interpreting acidity in the manner described, it was possible to divide the results from a series of patients into four simple groups, each one of which was of diagnositic value.

The values in Group 1, normal values, had an error of about 13 per cent. The pathologic cases included in the normal group consisted of duodenal or gastric ulcer; rarely of operable cancer. The duodenal and gastric ulcers were of especial interest. Since the operative treatment of ulcer is designed not only to effect rapid and complete relief of symptoms, but also to overcome stasis and reduce acidity, it would seem logical to treat by medical measures for a reasonable period of time those cases of ulcer without hyperacidity and without stasis, except when perforation or hemorrhage necessitates immediate surgical intervention. The possible undesirability of treating such patients by surgery at the outset is suggested by the fact that of twelve patients with ulcer in the series who were known to develop a gastrojejunal ulcer after gastroenterostomy, nine had a normal acidity formula when they were first observed, and only one had hyperacidity and stasis.

Anacidity was found with comparative frequency in the series. This finding should suggest the presence of carcinoma, but is not pathognomonic.

Hyperacidity without stasis was of importance. Fifty per cent. of such cases were associated with gastric or duodenal ulcer, chronic cholecystitis, or appendicitis. This finding, therefore, is of diagnostic value even in the absence of all other signs or symptoms.

Hyperacidity with stasis determined in the manner described was of great significance. In 86 per cent. there was an organic basis for the finding. Stasis determined by the tube was as true an indicator of the stasis subsequently found at operation by the surgeon as was stasis revealed by the roentgen ray.

These facts are sufficient to demonstrate the importance of simple gastric analysis in the routine study of patients with gastric and intestinal symptoms, and to suggest that the relation between gastric acidity and gastric volume after a test meal can be expressed mathematically in a way to afford practical information.

CLINICAL SIGNIFICANCE OF ALTERED INTRATHORACIC EQUILIBRIUM IN PNEUMOTHORAX

WITH SPECIAL REFERENCE TO OPTIMAL PRESSURES *

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AND
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In a recent publication entitled "Intrathoracic Equilibrium in Penumothorax,"[1] we discussed in some detail the mechanics and dynamics of this problem. In the present communication we purpose to restate as briefly as possible the fundamental ideas of the earlier contribution and to discuss in some detail the other phase of the subject, namely, the clinical effects of the altered intrathoracic equilibrium in pneumothorax.

Graham and Bell[2] touched the heart of the subject, when they came to the conclusion that: "From the standpoint of pressure relations, the thorax may be considered as one cavity instead of two. Any change in pressure in one pleural cavity will affect also the other one almost equally. The common conception of collapsed lung on one side and 'healthy' or 'normal' lung on the other in the condition of open pneumothorax in the otherwise normal chest must be erroneous." This, they prove, applies as well to closed pneumothorax in chests relatively free from adhesions.

This fundamental conception has been corroborated by Simon[3] and Betchov,[4] in their experimental studies on the effect of pneumothorax on the pressure conditions in the untreated side in men and laboratory animals; and the results of our own experiments in a small but carefully studied series of rabbits also support this view.

Clinically, the phenomenon of the so-called "movements of balance" (i. e., the inspiratory displacement of the mediastinum toward the pneumothorax side and the paradoxical movement of the diaphragm) are perhaps the best illustrations of the delicacy with which the intrathoracic equilibrium is adjusted in pneumothorax in the presence of a flexible mediastinum and an inert diaphragm.

Our conclusions were: In the presence of a flexible mediastinum, the intrathoracic equilibrium in pneumothorax is very delicately adjusted, and any disturbance in the intrathoracic pressure on the treated side will have a proportionate effect on the intrathoracic pressure on the untreated side as well as produce a readjustment in the position of the mediastinal structures. On the other hand, with a mediastinum effectively fixed by adhesions, the effect of unilateral pneumothorax on the opposite side is practically negligible, for the rigid mediastinum will stand the brunt of the increased intrathoracic pressure on the pneumothorax side without transmitting it to the untreated side.

Bearing these fundamental principles of pneumodynamics in mind, we may now consider the clinical effects of the altered intrathoracic equilibrium in pneumothorax.

It is apparent that when the pneumothorax is localized by extensive adhesions, or the mediastinum effectively fixed, or both, high positive intrapleural pressure, even up to between 40 and 50 mm. of mercury, will cause no appreciable effect on the pressure conditions of the opposite side or the size and function of the untreated lung. Under such circumstances, as high pressure as can be borne in the particular case may be given in the presence of a therapeutic indication.

Such an indication exists particularly in cases in which the symptoms and signs point to a tendency toward obliteration of the pleural cavity, whether or not this occurs as a result of a complicating hydropneumothorax. Experience has taught us that such pleural obliteration can be avoided in some cases and delayed in others by the judicious recourse to gradually increasing positive intrapleural tension. Unless this procedure is resorted to in these cases, a loss of pneumothorax will occur and the affected lung will rapidly reexpand, laying open the diseased foci and excavations, for the very relief of which the lung was collapsed. The danger of this reexpansion is particularly great because, once lost control of and given a chance to progress, pleural obliteration will preclude the possibility of resuming successful collapse therapy. It is unfortunate, indeed, that in some of these cases the pressure cannot be raised high enough because the gas under pressure escapes through the needle puncture into the adjoining and often surrounding subcutaneous tissue. And while a positive pressure of from 30 to 50 mm. of mercury may occasionally cause some adhesions to rupture, this unfortunate occurrence is not frequent enough to warrant an abandonment of this procedure in most cases.

It is different in the case of a flexible and labile mediastinum. Here increased intrapleural pressure on the pneumothorax side means not only proportionate increase of pressure on the opposite side but also a definite compression of the untreated lung. With one lung collapsed and the untreated lung somewhat involved, as it usually is in many cases subjected to collapse therapy, every effort should be made to embar-

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* From the Montefiore Country Sanatorium.

* Read before the Clinical Section of the Eighteenth Annual Meeting of the National Tuberculosis Association, Washington, D. C., May 4, 1922.

[1] Stivelman, B. P.; Hennell, Herman, and Golembe, Harry: Am. Rev. Tuberc. **6**: 95 (April) 1922.

[2] Graham, E. A., and Bell, R. D.: Am. J. M. Sc. **156**: 839 (Dec.) 1918.

[3] Simon, S.: Am. Rev. Tuberc. **5**: 620 (Oct.) 1921.

[4] Betchov, N.: Schweiz, med. Wchnschr. **51**: 43 (Oct. 27) 1921.

rass as little as possible the untreated organ, which is now forced to perform the function of respiration practically unaided. Many of our failures in pneumothorax are, no doubt, due to the reactivation of tuberculous foci in the untreated lung, and might have been avoided by a more thorough appreciation of the pneumodynamics involved.

In these cases of bilateral involvement we must endeavor by patient observation to determine the amount of compression which the untreated lung can stand as a result of the increased intrapleural pressure on the treated side. Indeed, this is the most difficult problem to solve in cases that fall in this category.

Those who are most competent to judge have long realized that there is no such thing as a standard optimal pressure, even in the simpler pneumothorax cases. Each patient is a law unto himself. A pressure which is sufficient to bring about an arrest of the disease in one case may be distinctly injurious in another. At one time we aimed to establish a positive pressure of about 4 cm. of water at the fourth inflation in all cases. We know of a patient who would have lost his life as a result of a telephone order to induce a positive pressure of 4 cm. had it not been for the quick action of the assistant, who, realizing the distress of the patient, withdrew some air by using the simple expedient of lowering the gas reservoir, i. e., reversing the siphonage until the patient was relieved. No dogmatic statements are possible, although it is generally observed that the best results are more frequently obtained when the intrapleural tension can be maintained at about — 2 to — 3 cm. of water. In such cases the affected lung is usually effectively collapsed and the untreated lung, by virtue of the flexible and labile mediastinum, is but lightly compressed.

Evidence is accumulating to the effect that this light compression of the so-called untreated but somewhat diseased lung is of entirely salutary nature. The progress of the tuberculous foci which are thus compressed may be definitely arrested, and even areas of consolidation and cavity formation are often beneficially affected. We count among our outstanding successes many patients whose untreated lung was definitely and often actively affected prior to the induction of pneumothorax on the opposite, more diseased lung.

When, on the other hand, the intrapleural pressure is rapidly increased in such cases and the mediastinum is markedly displaced toward the untreated, less affected lung, forcibly compressing it, the threshold of safety is soon passed and deleterious effects are not long in appearing. The crowding of the untreated organ and the great amount of atelectasis produced in it may endanger life by the marked diminution in the respiratory function of the only working lung. Furthermore, the great decrease in negativity in the intrapleural pressure on the untreated side must be overcome by more strenuous inspiratory efforts. These factors, added to the existing disability of the already overworked organ, sooner rather than later fan the flame of activity, which, if not quickly recognized and promptly relieved, soon passes beyond our control.

Among the few therapeutic indications for a slight positive pressure, even in the presence of a flexible mediastinum, may be mentioned the existence of thick walled active vomicae and hemoptysis. However, in compressing for hemoptysis, contrary to general belief, it is not always necessary to create high intrapleural pressure. It is an accepted fact that most hemorrhages arise from branches of the pulmonary veins, which, as a rule, are easily compressible. When the bleeding is due to an erosion of an aneurysm of Rasmussen traversing a rigid walled cavity, no amount of pressure applied through a medium of pneumothorax may suffice to ligate it. There are exceptions to this rule, and in such cases, after trying a zero pressure, it may be necessary in view of the emergency to resort to higher pressures.

It is not generally appreciated that the circulatory apparatus is profoundly and unfavorably affected in cases in which the mediastinal structures are markedly dislocated. As it has been shown, a diminution in the negativity of the intrapleural pressure at once interferes with, if it does not completely destroy, the aspiratory factor in the venous blood return, which can be compensated for only by increased cardiac action. The dyspnea and cyanosis attending marked mediastinal displacements are in a great measure due to cardiac embarrassment and perhaps kinking of some of the larger vessels.

Experience has taught that although the heart will tolerate a great deal of dislocation and accommodate itself to its new position and altered intrathoracic pressure, if these take place gradually, it will nevertheless be severly embarrassed if this new position and pressure relation are quickly changed. It is for this reason that severe cardiorespiratory failure and even death may occur as a result of sudden and marked disturbance of intrapleural tension following aspiration of copious pleural effusions. The rapid restoration of the intrathoracic equilibrium to which the heart had recently accomodated itself by the inflation of gas into the affected pleural cavity will in a few seconds relieve this distressing chain of symptoms, and may even prevent a fatal issue.

SUMMARY AND CONCLUSIONS

The study of the pneumodynamics in general and its mechanism in pneumothorax, and the experimental evidence on the effect of pneumothorax on the intrathoracic equilibrium, as well as the accumulated clinical experience, helped us to formulate certain guiding principles in the management of pneumothorax cases as far as pressures are concerned.

In initial inflations and in the early refills, it is imperative to alter the intrathoracic conditions as gradually as possible. (It is our usual procedure to give the patient from 200 to 400 c.c. at each of the first few refills, gradually lengthening the intervals from one to seven days, and cautiously raising the amount of gas and pressure.) This allows the patient to pass through this period of compression with as little discomfort as possible. From the study of the signs and symptoms during this period, as well as from the roentgenoscopic appearance of the treated and untreated lungs, it is possible to determine the optimal pressure for each case.

In the presence of a flexible mediastinum, high pressure should at all times be avoided. A slight positive pressure may be given only in the presence of strong indications (hemorrhage, thick walled active vomicae). This principle is particularly adhered to when there is considerable involvement of the untreated side. Here again each case must be individualized and carefully observed.

Sudden changes in the intrathoracic conditions should never be permitted. For this reason all connections with the pneumothorax apparatus should be prearranged in aspirating hydropneumothorax cases, to enable us to reinflate quickly if necessary. Failure to do this may give rise to distressing symptoms and even lead to a fatal issue as a result of acute cardiorespiratory embarrassment.

In brief, our guiding principles in the management of pressures in pneumothorax are:

1. To avoid sudden change in the intrathoracic equilibrium and in the relative position of the intrathoracic viscera.
2. To avoid high pressures in the presence of a flexible mediastium.
3. Gradually but definitely to increase the positive intrapleural pressure in cases in which pleural obliteration is threatening.
4. To individualize the cases, determining the optimal pressure requirement of each.

SURGERY OF NONHYPERPLASTIC OVARIAN CYSTS *

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OMAHA

Ovarian cysts may be divided into hyperplastic and nonhyperplastic types, more commonly called the proliferative and simple cysts, respectively. The hyperplastic or proliferative cysts, represented by the teratomatous, adenomatous and papillary cysts of varying degrees of malignancy, increase in size more through a hyperplasia of the cells of the cyst wall. The nonhyperplastic or simple cysts, represented by the follicular and simple glandular cysts, increase in size through an accumulation of fluid secreted by the cyst wall. In the former, the fluid is of secondary importance; in the latter, primary.

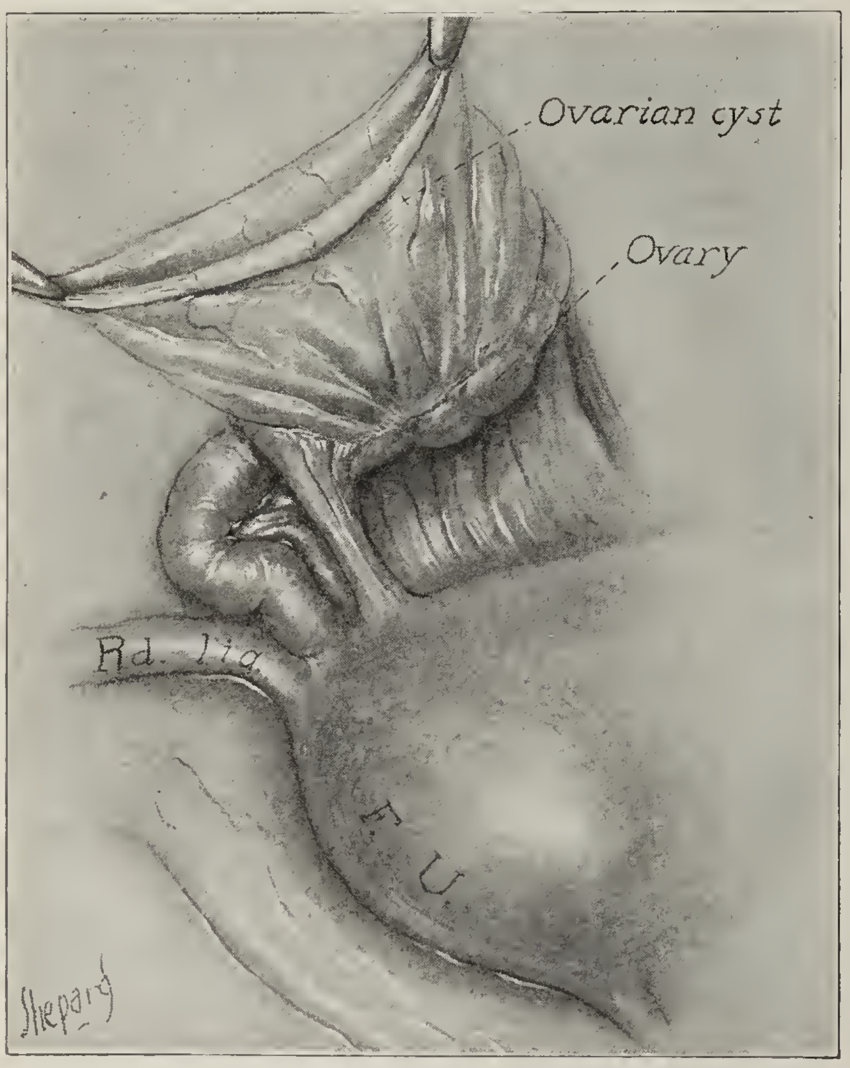

Fig. 1.—Upper third of cyst wall amputated.

The nonhyperplastic or simple cysts of follicular origin are normally always present, being a product of the many thousands of cysts with which the ovary has been endowed, each containing at one time an ovum. The ovary is normally a multicystic organ, and its premenstrual and postmenstrual functions are accompanied by cystic hypertrophy of varying degrees, which must be kept in mind when one is dealing surgically with the female generative organs, since the ovary deserves the same respect as the testicle, which we know is conserved to the utmost.

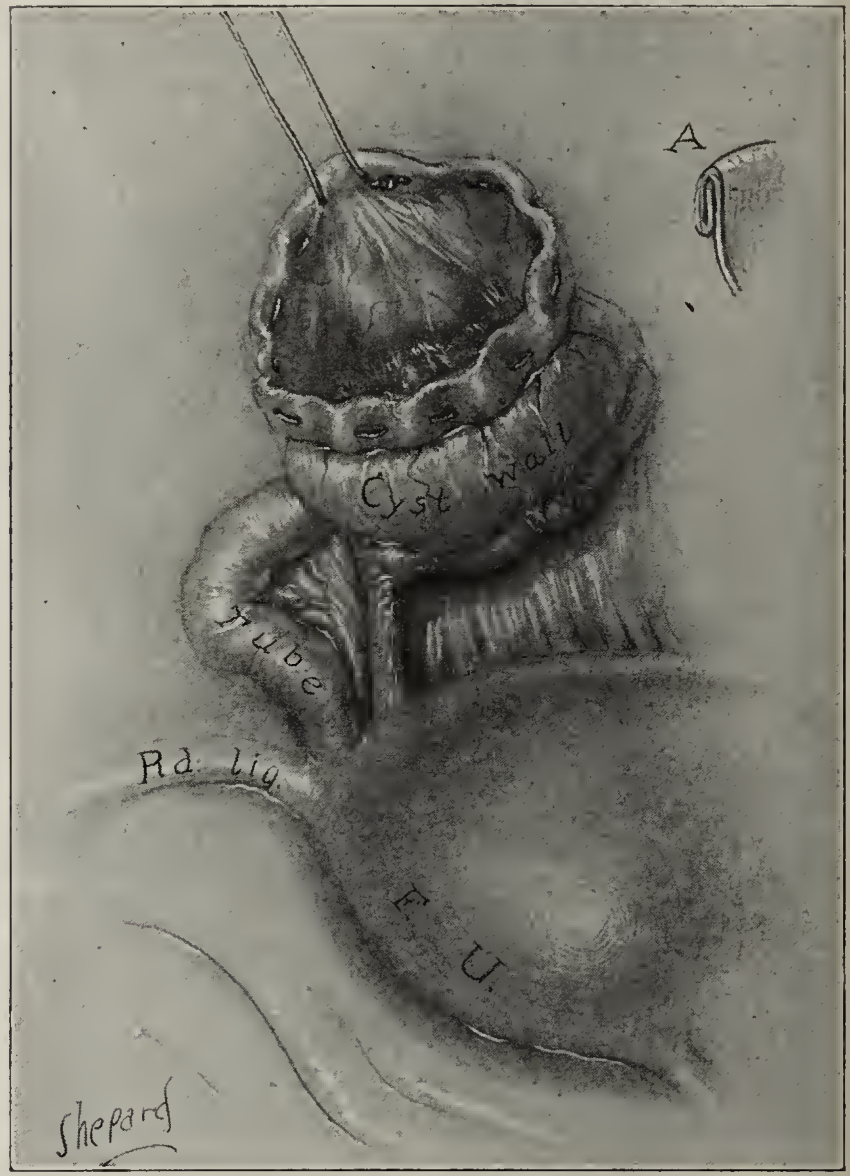

Fig. 2.—Cyst wall turned outward and downward, and retained by mattress suture.

SIMPLE FOLLICULAR AND GLANDULAR CYSTS

The simple follicular and glandular cysts generally disappear or remain a size of no clinical significance. Not infrequently one, or two or more combined, enlarge to form a tumor requiring surgical consideration. With a normal ovary on the opposite side, the treatment of these cysts may be a simple ovariectomy. Not infrequently the only remaining ovary becomes cystic, and in four instances during the last eight years I have adopted the following method of treatment (Figs. 1 and 2):

The upper third of the cyst wall is evenly removed, and the upper border of the remaining cyst wall is curled downward and outward upon itself. This curl, which covers the raw edge and keeps open permanently the cystic cavity for drainage, is maintained by the con-

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* From the University of Nebraska College of Medicine.

tinuous mattress fine catgut suture. The operation only slightly resembles the bottle operation on the cystic tunica vaginalis, and I have found no reference in the literature to any similar operation. Schäfer[1] reports one case in which he performs the true bottle operation, as is done with the tunica vaginalis, which, however, is not so acceptable with the ovary, owing to the more or less constant cystic secretions being expelled from its surface, which would tend to form another cyst inside the inverted cyst wall. The operation I have described, of everting the cyst wall upon itself, is possible only when the cyst wall has reached a size allowing for a curling back of its edges, and it is far preferable to the operation of the so-called "resection," which leaves a hard, scarred stump, causing generally more disturbance than the original disease.

INFLAMMATORY CYSTS

The inflammatory cyst, unlike the follicular and simple glandular types, which are generally unilateral and single, is usually bilateral and multiple, owing to the previous infection attacking, as a rule, both tubes. These cysts rarely reach a size greater than from 3 to 5 cm. in diameter, and as a rule the ovaries are intimately attached to the tubes by inflammatory adhesions. They are found most frequently in women too young to lose the ovarian secretion, and are generally treated by complete surgical removal. Any conservative procedure here is worth considering, and I have found the following operations most satisfactory during the last eight years in about ten instances (Figs. 3 and 4):

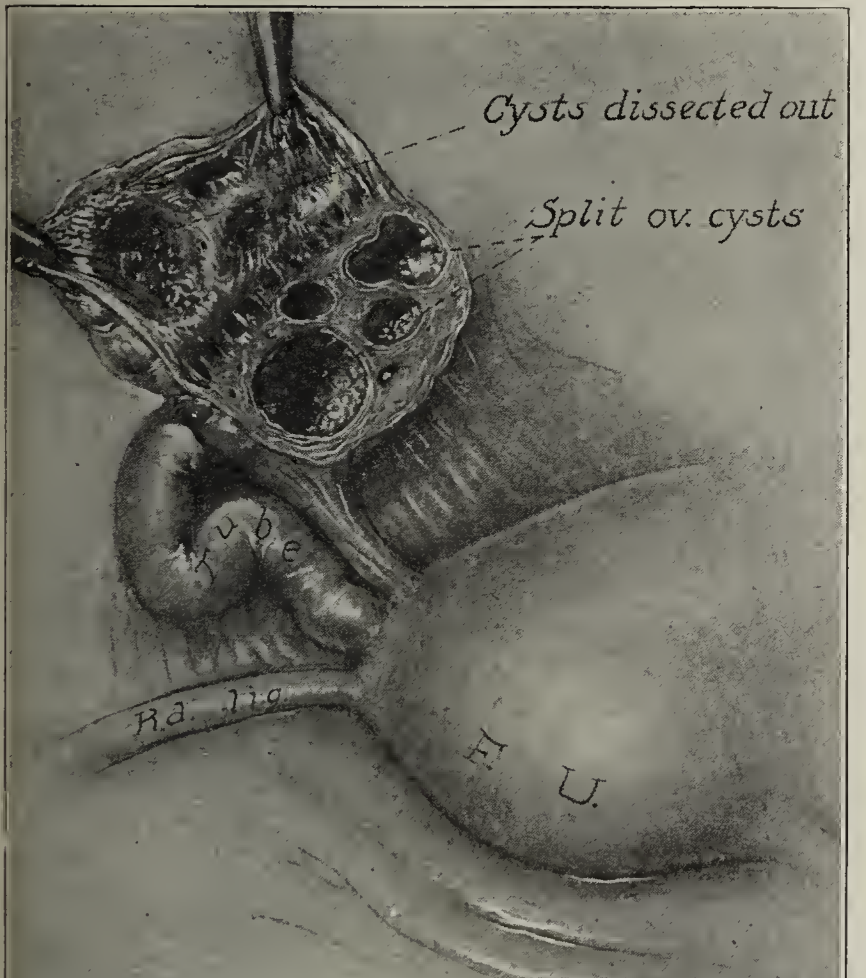

Fig. 3.—Ovary split, showing in one half the remaining portions of inflammatory cysts, in the other half the cyst walls dissected out.

Both ovaries are conserved if possible, but generally one is too cystic to contain ovarian tissue of any moment. The ovary is split cleanly in two, care being used to avoid injuring the proximal blood supply, only distal ligations of vessels being practiced. The pedicle is thereby left intact, a most essential step. All cysts are carefully dissected free, leaving ovarian tissue more or less mutilated in the shape of a plaque from 0.25 to 1 cm. in thickness, a more or less patchy remnant. In place of sewing this in a mass or endeavoring to reunite the two halves, both procedures resulting in a superabundance of scar tissue, I have applied in ten instances, the flat raw surface to the posterior surface of the broad ligament or uterus with fine catgut, covering carefully all raw surfaces. Several mattress sutures are applied in the central portion, to prevent an accumulation of fluid beneath the ovarian tissue. One of the patients has become pregnant since, in whom a plastic on the distal end of the remaining tube was performed; in the others, who remained sterile, the tubes were removed. No patient complained of pain because of the remaining ovarian tissue, nor to my knowledge has any further cystic disease developed.

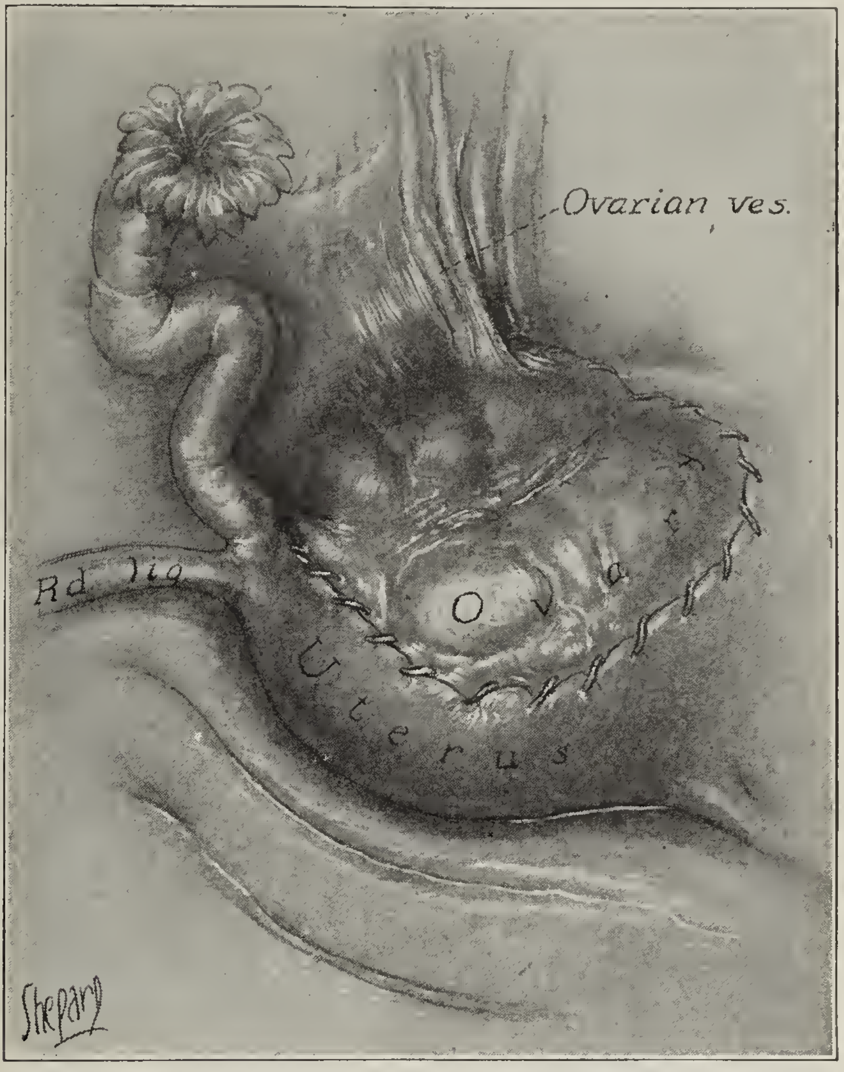

Fig. 4.—Remnant of ovarian tissue applied to posterior wall of uterus and broad ligament.

834 Brandeis Theater Building.

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[1] Schäfer, A.: Zentralbl. f. Gynäk. **45**: 1248 (Sept. 3) 1921.

Standardized Health Work.—Through its personnel at headquarters and in the field, the public health service should standardize all health work, and should cooperate with the medical profession, the state and local medical and lay organizations in all health and welfare activities. Success in public health work can be attained only by cooperation with the members of the community who must operate all of the activities which are utilized in health and welfare work. Community interest must be aroused by the education of the people. This may be done by local, district or statewide conferences, and by publicity reinforced by lectures from the pulpit, the school rostrum, at Chautauquas and the like.—F. Billings, *Hospital Social Service* **5**:217 (April) 1922.

CORRELATION OF EFFICIENCY TESTS

PRELIMINARY REPORT

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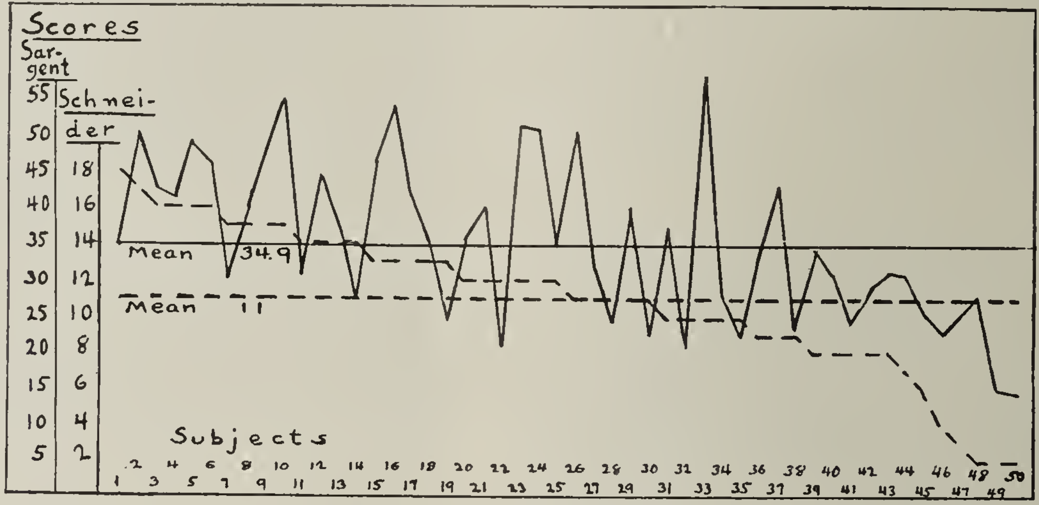
This is an age of functional tests and measurements. The time has passed when fifty or more anthropometric determinations of size are made in the physical examination of one subject. Instead, the efforts to secure data on the functioning power of the human organism are becoming increasingly more numerous.

The tests that have attracted the most attention are the tests of circulatory efficiency and of physical efficiency. In the former, the proposals of Crampton,[1] Foster,[2] Barringer [3] and Schneider [4] have been favorably received. While these tests are still *sub judice,* they have given encouraging results in some places. In the physical efficiency group, the recent test proposed by Dr. Sargent [5] has awakened considerable interest because of its simplicity and the apparent soundness of the principle involved.



Relation between circulatory and physical efficiency, as shown by the Schneider and Sargent tests applied to fifty subjects: solid line, Sargent test; Broken line, Schneider test; Pearson coefficient of correlation, 0.57.

The question was raised concerning the possible correlation between a cardiac efficiency test and a physical efficiency test. It was asked, "Why should not cardiac efficiency express itself in terms of physical efficiency?" Surely, the opposite would be true. If the heart is not efficient, the inadequate circulation would be expressed in terms of deficient oxygenation of tissues, deficient waste removal, and hence in general physical unfitness.

It was proposed to examine a group with a cardiovascular test and a physical efficiency test. For this purpose, fifty males were selected. This group varied in age from 11 to 36 years, in height from 4 feet 6 inches (137 cm.) to 6 feet (183 cm.), and in weight from 75 to 200 pounds (34 to 91 kg.). The tests chosen for the experiment were the Schneider [4] rating of cardiovascular efficiency and the Sargent [5] test of a man.

The tests were given at one time. The method of procedure was to give the Schneider test first, and immediately follow it with the Sargent test. The tests were given as directed by Schneider [4] and Sargent.[5]

The Schneider cardiovascular rating determines the pulse rate reclining and its increase on standing, the pulse rate standing and its increase with exercise of a definite kind (stepping on a chair 18 inches [46 cm.] high five times in fifteen seconds), and its decrease to standing normal after exercise. Blood pressure readings are also made on reclining systolic and standing systolic. The different values secured are assigned points so that a total score is recorded in the responses of heart rate and blood pressure to change of position and to exercise. A perfect score is 18; anything less than 9 is considered characteristic of physical unfitness.

The Sargent test seeks to measure strength, speed and energy by determining how far a person can project his body vertically upward. The subject to be tested stands under a cardboard disk held from 10 to 20 or more inches (25 to 50 cm.) above his head. "He is then requested to bend forward, flexing the trunk, knees and ankles, and then by a powerful jump upward, straightening the legs and spine, to try to touch the cardboard disk with the top of the head." The difference between the height of the disk as touched and the individual's own height is, of course, the height jumped.

Several different work formulas are combined into one for the purpose of securing an index. The formula used is:

$$\text{Index} = \frac{\text{Weight} \times \text{Jump}}{\text{Height}}$$

The results of the two tests are given in the table,[6] and the graphic illustration of the two in the chart.

It will be noted that the coefficient of correlation is 0.57. The probable error for the fifty cases is 0.0648. It is probable that the correlation is high because of the wide range in age of the group. The tests are being tried out also on particular age groups, to be reported later.

It was observed that stout persons received as a rule a low Schneider rating, probably because their pulse rate invariably is higher than in persons of the same height but of less weight. The same group, however, rated relatively higher in the Sargent test than those of the same height and of less weight.

It was also observed that the younger members of the group invariably received a low Schneider and a low Sargent rating. This was probably due to different factors. In the former it was undoubtedly due to the higher pulse rate of the younger ages of this part of the group, and in the latter to the lower weight attendant with underdevelopment in this part of the group.

SUMMARY

1. There is a very definite correlation between the Schneider cardiovascular test and the Sargent physical test. This correlation is not perfect (perfect correlation = 1), but is high for such diverse tests. The wide age range of the group tested gives only a limited distribution of any one age, and hence repetition of the

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[1] Crampton, C. W.: New York M. J., Nov. 8, 1913; Tr. Fourth Internat. Cong. School Hyg. **5**: 555, 1913.

[2] Foster, W. L.: Am. Phys. Ed. Rev., November, 1918, p. 632.

[3] Barringer, T. B.: Cardiac Function, Arch. Int. Med. **17**: 363 (March) 1916.

[4] Schneider, E. C.: A Cardiovascular Rating as a Measure of Physical Fatigue and Efficiency, J. A. M. A. **74**: 1507 (May 29) 1920.

[5] Sargent, D. A.: Am. Phys. Ed. Rev., April, 1921, p. 188.

[6] The Method of computation is given by Rugg, H. O.: Statistical Methods Applied to Education, Boston, Houghton, Mifflin Company, Boston, 1917.

experiment with more homogeneous groups is needed to verify the obtained coefficient.

2. The high correlation shows that cardiac efficiency is probably a good indication of general physical efficiency.

3. It will probably be necessary to revise the Schneider test to allow for the normal variation in pulse rate in the age ranges before and during adolescence.

RESULTS OF TWO TESTS

Case No.	Schneider Test	Sargent Test	X	Y	XY	X²	Y²
1	18	34.3	7	— 0.6	— 4.2	49	0.36
2	17	50.4	6	15.5	93.0	36	240.25
3	16	42.5	5	7.6	38.0	25	57.76
4	16	41.7	5	6.8	34.0	25	46.24
5	16	48.0	5	13.1	65.5	25	171.61
6	16	46.0	5	11.1	55.5	25	123.21
7	15	30.3	4	— 4.6	—18.4	16	21.16
8	15	40.7	4	5.8	23.2	16	33.64
9	15	39.4	4	4.5	18.0	16	20.25
10	15	44.8	4	19.9	79.6	16	396.01
11	14	30.7	3	— 4.2	—12.6	9	17.64
12	14	43.8	3	8.9	26.7	9	79.21
13	14	36.7	3	1.8	5.4	9	3.24
14	14	27.2	3	— 7.3	—21.9	9	53.29
15	13	46.0	2	11.1	22.2	4	123.21
16	13	53.3	2	18.4	36.8	4	338.56
17	13	41.8	2	6.9	13.8	4	47.61
18	13	35.3	2	0.4	0.8	4	0.16
19	13	23.1	2	— 11.8	—23.6	4	139.24
20	12	35.4	1	0.5	0.5	1	0.25
21	12	40.2	1	5.3	5.3	1	28.09
22	12	21.8	1	— 13.1	—13.1	1	171.61
23	12	51.7	1	16.8	16.8	1	282.24
24	12	51.3	1	16.4	16.4	1	268.96
25	12	34.9	1	0.0	0.0	1	0.00
26	11	50.3	0	15.4	0.0	0	237.16
27	11	31.8	0	— 3.1	0.0	0	9.61
28	11	24.0	0	—10.9	0.0	0	118.81
29	11	38.9	0	4.0	0.0	0	16.00
30	11	22.5	0	—12.4	0.0	0	153.76
31	10	36.1	—1	1.2	— 1.2	1	1.44
32	10	21.7	—1	—13.2	13.2	1	174.24
33	10	58.0	—1	23.1	—23.1	1	533.61
34	10	27.9	—1	— 7.0	7.0	1	49.00
35	10	22.8	—1	—12.1	12.1	1	146.41
36	9	32.7	—2	— 2.0	4.4	4	4.84
37	9	42.8	—2	7.9	—15.8	4	62.41
38	9	23.5	—2	—11.4	22.8	4	129.96
39	8	34.1	—3	— 0.8	2.4	9	0.64
40	8	31.2	—3	— 3.7	11.1	9	13.69
41	8	24.6	—3	— 10.3	30.9	9	106.09
42	8	28.8	—3	— 6.1	18.3	9	37.21
43	8	31.2	—3	— 3.7	11.1	9	13.69
44	7	30.5	—4	— 4.4	17.6	16	19.36
45	6	25.3	—5	— 9.6	48.0	25	92.16
46	4	22.6	—7	—12.3	86.1	49	151.29
47	3	25.2	—8	— 9.7	77.6	64	94.09
48	2	27.6	—9	— 7.3	65.7	81	53.29
49	2	15.0	—9	—19.9	179.1	81	396.01
50	2	14.7	—9	—20.2	181.8	81	408.04
	550÷50	1,745.1÷50			Σxy 1.206.8	Σx^2 770	Σy^2 5,685.61
	Av., — 11	Av., — 34.9					

$$\text{Coefficient of correlation } (r) = \frac{\Sigma xy}{N\sigma x . \sigma y} = 0.57$$

Where

$N = 50 =$ number of cases

σx (from exact mean) $= \dfrac{\sqrt{\Sigma x^2}}{N}$

σy (from exact mean) $= \dfrac{\sqrt{\Sigma y^2}}{N}$

Probable error = 0.0648

4. The Schneider test was evolved on adults. Its applicability to adolescents and preadolescents remains to be determined.

5. It has not been determined whether the same correlation holds for females.

Alcohol in Sweden.—Under the system of regulation of alcohol in Sweden, a great decrease in the annual consumption is reported. From January to March, 1920, 9,500,000 liters of spirits and 1,120,000 liters of wine were consumed, compared to 8,200,000 and 730,000, respectively, in 1921. In March, 1913, there were 15,000 reported cases of drunkenness throughout the country, and from January to March, 1920, only 6,800.

PHYSICAL EXAMINATION OF FOOD HANDLERS *

L. B. GLOYNE, M.D.,
Assistant in Preventive Medicine, University of Kansas School of Medicine; Commissioner of Health and Sanitation
KANSAS CITY, KAN.

An ordinance requiring the physical examination of food handlers has been in force in Kansas City, Kan., about one year. There have been some interesting findings, and some problems have arisen which remain unsolved. One of the outstanding problems is the relation of the family physician to the proper enforcement of the ordinance.

To recapitaulate somewhat on my findings previously reported,[1] 1,860 persons had been examined up to Nov. 1, 1921, by the Kansas City Health Department, and 249 had been examined by family physicians. In addition to these, 112 persons either left town or quit work as soon as the department started to enforce the ordinance. From the stories that we gathered, the vast majority of those who left town or quit work did so because they felt sure that they could not pass the examination.

Since Nov. 1, 1921, there have been 762 examinations by the health department, and thirty-four by family physicians. This make a total of 2,622 examined by our department, and 283 by family physicians. The department has refused permits in sixty-one cases, while the family physicians have refused none.

It is possible that all of the 283 persons examined by private physicians were physically qualified, but none of them had a Wassermann test, a sputum examination, or any other laboratory test to help the physicians arrive at their conclusions. Our inspector has often encountered persons who, thinking they could not pass the health department's examination, insisted on going to their family physicians.

The greatest single good that has resulted from this ordinance has been the finding of a number of food handlers, with venereal disease, who have presented cards on which examining physicians have marked "None," without making any examination, under all headings that refer to venereal diseases. In one case that came to my attention a waitress who brought in a family physician's report admitted that the doctor did not examine her, but just merely made out the card. I sent her back to her physician with instructions that the examination must be made or else we could not issue a "permit to work" card. She went back and he again sent her away without making the examination; but he called me before she got back to my office and said, "It is foolish to require an examination of this person. I have known the family for fifteen years and am sure there is nothing the matter with her." I informed him that I had been fooled a number of times by my friends, and that the only way to tell whether or not she had any disease was to examine her. I referred her back to him the third time, and he then examined her.

I previously recommended that all examinations of food handlers be conducted by the health department. This caused a reaction among a few of the local physicians, some of whom desire to make the examinations because they feel that it is the right of the person examined to choose his physician and, also, because they need the income. These physicians are careful about making their examination. Other physicians do not desire to make the examinations, because they fear that something wrong will be found and that their honest reports will cause their patients to lose employment.

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* Read before the Health Officers' Section of the Kansas Public Health Association, April 11, 1922.

[1] Gloyne, L. B.: A Preliminary Report on the Physical Examination of Food Handlers, J. Am. Pub. Health A., November, 1921, p. 963; M. Officer, January, 1922, p. 5.

Our experience is not unique in this matter, because health departments in other cities, where family physicians make these examinations, are having similar experiences. It was recently stated[2] that:

> Our own occupational clinics, though they were not uniformly administered nor as favorably situated with respect to supervision, equipment and personnel as they might be, nevertheless made a showing which indicates that the private physicians are not all contributing conscientiously to the protection of the public health from food handlers, who may be affected with communicable diseases. . . . Since the examination of food handlers has been demonstrated to be an activity of the department which is of vital importance as a public health measure, it would seem to be necessary, in the interest of the public welfare, to discontinue delegating this important function to private physicians.

A long list of figures is usually uninteresting, but I want to refer to a few things that have been accomplished by this ordinance. In one restaurant, all of the waitresses were infected. A thorough investigation disclosed that waiting on tables was only a part of their occupation. We have been able to straighten out that place. Three colored waitresses and two colored cooks in an exclusive colored club had acute gonorrhea. Our work has cleared up that situation. In a rooming house where several waitresses lived, we found three of them infected. We found a boy, barely 14 years old, with a chancre. Twelve persons who were refused permits started treatment immediately and were later given cards when thought to be noninfectious. A baker who had a syphilitic ulcer on his shoulder required seven months' treatment before he was able to return to his usual occupation. I believe that he worked in a nearby city while under treatment.

To those who are studying the question of sex hygiene, sex education and the dissemination of information on prophylaxis, I would like to give the following information, purely from a medical, and not a moral, standpoint. We require all restaurant employers, grocerymen and druggists, if they are soda dispensers, to be examined. From a moral standpoint, I do not believe that the three groups vary widely. But among soda dispensers we found only one case of venereal disease, in a youth who had not been around a drug store long enough to learn the dangers of venereal diseases or about its prophylaxis. It is my opinion that the information these young fellows gather around the drug stores makes them fear venereal diseases, so that they live more continent lives, and that when they do break over, they use the knowledge that they have gathered on prophylaxis.

Of the three groups, grocery employees, restaurant employees and soda dispensers, the restaurant group stands out as most in need of attention. There is more shifting in that group than in any other. Less capital is required than in the other two lines. I have examined a number of persons who were in the restaurant business because they could not find anything else to do. They were entirely void of knowledge on sanitation. I believe that the next advance in improving the sanitation of our restaurants and other food establishments, and for seeing to it that food reaches the consumer in an uncontaminated condition, will be a mental test that will require the food handler to study certain sanitary principles before he tries to pass the physical examination. I have issued cards to a few persons of very low mentality. It was evident that they were not mentally capable of having the responsibility of preparing food for the public. Some of these I have stopped to talk to, and then questioned them after my little lecture. I found that my talk did not make the slightest impression. This group is composed, mainly, of men, beyond 60 or 65, who run some little place of business all by themselves. There have been two of these whose bodies were so dirty that I refused to issue a card to them until they went home and took a bath. It goes without saying that one who is so deficient mentally that he cannot take care of his own person is one that should not be trusted with handling the food of others.

While the examination of a large number of persons gives a somewhat monotonous task to the conscientious examiner, still the results obtained are well worth the amount of effort necessary to carry out the work, and I heartily recommend the adoption of this public health measure in any community in which it is not now applied.

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[2] Month. Bull. Dept. of Health, City of New York, September, 1921.

ACUTE STENOTIC LARYNGITIS SIMULATING LARYNGEAL DIPHTHERIA

CHARLES A. THOMSON, M.D.
Resident Physician, Willard Parker Hospital
NEW YORK

Under the diagnosis of laryngeal diphtheria, one may encounter in the admitting room of a diphtheria ward many forms of respiratory disease: acute stenotic laryngitis, bronchopneumonia, retropharyngeal abscess, foreign bodies, stenosis of upper respiratory tract due to various causes, postdiphtheritic paralysis, edema of the glottis, and even poliomyelitis (bulbar type). None of these, however, with the exception of acute stenotic laryngitis, present much difficulty in diagnosis. There is nothing particularly suggestive in such a history: The child has had some fever, a persistent "croupy" cough and some dyspnea. Perhaps antitoxin has been given; then, as the condition has not improved but grown worse, the patient is brought to the hospital in case intubation should be necessary.

In the milder forms of stenotic laryngitis, a differentiation is usually not difficult; yet even here one occasionally finds that the ordinary clinical methods are not sufficient. The barking cough, lack of aphonia and higher temperature are suggestive of stenotic laryngitis, but these may be present in diphtheria. If the pseudomembrane is confined to the aryepiglottic folds with but little extension of the inflammation downward, the voice may be perfectly good. In a series of 136 cases in which this point was carefully noted, aphonia was lacking in twenty-eight (20 per cent.). Again, in the severer forms of stenotic laryngitis, the voice may be as completely lost as in diphtheria. Of course, when there is evidence of diphtheritic exudate in the throat, the diagnosis is clear. It is well to note that a follicular exudate on the tonsils and a laryngitis may be due to the scarlet fever virus and not to the diphtheria bacillus. But it is in those cases in which no exudate s seen above the larynx that the difficulty lies. Pharyngeal cultures are not to be relied on. In a series of 697 cases of laryngeal diphtheria, 245 (38 per cent.) showed nothing in the throat. Although the primary cultures taken directly from the larynx were positive for the Klebs-Loeffler bacillus in 85 per cent. of these cases, cultures taken from the throat were positive in only 50 per cent. It may be worth noting in this connection that a positive culture does not necessarily denote diphtheria. We have seen patients with laryngitis who gave several positive cultures from the larynx; the majority of these gave the negative Schick test, and none were given antitoxin. The positive cultures meant simply that the patients were carriers. In fact, one of these carriers was sent to us as such from a city hospital, two months later.

Cases of acute stenotic laryngitis as seen in the hospital may be divided usually into (1) those preceding a measles rash; (2) those preceding a scarlet fever rash; (3) those accompanying influenza, and (4) those arising from some infection of unknown origin.

It will be seen from this classification how important it is that acute stenotic laryngitis be differentiated at the outset from laryngeal diphtheria in order to prevent the possibility of mixed infections. In a series of 113 cases of laryngitis, five patients developed a measles rash in forty-eight hours, although at the time of admission no symptoms suggestive of measles, apart from the laryngitis, were present. During the winter of 1921 we saw several cases of laryngitis in which a scarlet fever rash developed in twenty-four hours. Some of these patients required intubation.

Direct laryngoscopy offers the best means of diagnosis in these cases and, while not infallible, reduces the limit of error to a small margin. Direct inspection of the larynx shows congestion and swelling of the aryepiglottic folds and arytenoids, swelling of the ventricular bands, reddened cords, and a greater or less degree of subglottic stenosis. In the severer forms, this subglottic stenosis is more marked than that usually encountered in diphtheria. The local inflammatory reaction is also more intense usually. The pseudomembrane is, of course, absent. It is the cases in which the membrane is so low down that it cannot be seen that present the greatest difficulty, but these are few. The passing of a culture swab into the larynx will frequently demonstrate the membrane.

AGE AND SEX

	Stenotic Laryngitis	Laryngeal Diphtheria
Ages:		
Under 6 months	2	6
From 7 to 12 months	12	60
From 1 to 2 years	46	263
From 3 to 5 years	36	289
From 6 to 10 years	16	75
From 11 to 15 years	1	1
From 16 to 20 years	0	3
	113	697
Sex.		
Males	76	403
Females	37	294

Of 810 patients sent to the Willard Parker Hospital as having laryngeal diphtheria, 697 proved by direct examination to have diphtheritic laryngitis and 113, acute stenotic laryngitis. A membrane was demonstrated in all of the 697. Of the 113, none had a membrane; all had several negative cultures taken direct from the larynx; the greater number received from ,000 to 2,000 units of antitoxin subcutaneously; ten were given no antitoxin, but the Schick test instead; all ten proved negative. Of these ten, two required intubation, one on the fourteenth day, the other on the twelfth day after admission. The former recovered; the latter died of pneumonia.

The age incidence of stenotic laryngitis is much the same as in diphtheria; this is shown in the accompanying tabulation. In both series, males predominated.

The number of intubations in the 113 cases was fourteen; of these patients, nine died of bronchopneumonia. Of the ninety-nine not intubated, five died of bronchopneumonia; in the remaining ninety-four in whom bronchopneumonia did not occur, there were no deaths.

Although many of these patients recovered in a few days, with some the dyspnea lasted from a week to ten days, in marked contrast to diphtheria; the croupy cough persisted from fourteen to eighteen days longer.

Recurrences of stenotic laryngitis are not infrequent. Some of these patients were brought to the hospital several times in the year. One in particular was known to have had six attacks in eighteen months, four being in the hospital; each attack lasted from two to three weeks.

Clinical Notes, Suggestions, and New Instruments

DOWNWARD DISLOCATION OF THE PATELLA

Guy Aud, M.D., Louisville, Ky.

This case is reported because of the relative rarity of downward dislocation of the patella and the paucity of literature on the subject, rather than because of any particular difficulty encountered in reducing the dislocation.

REPORT OF CASE

G. W., a boy, aged 17, who had been hopping trains for years and had become expert at it, attempted to board a train said to have been moving at a rate of 25 or 30 miles an hour. He secured a firm grip with both hands, but missed his footing and was being dragged along with his legs flexed under him. Realizing that he could not get aboard and that the train was steadily gaining speed, he attempted to save himself by letting go and throwing his body free of the car-wheels. As he fell, severe pain was experienced in the left knee and he was unable to arise. He was immediately carried to the office of Dr. H. R. Nusz, Cecilia, Ky., who diagnosed the dislocation. An anesthetic was administered by Dr. Nusz and attempt made to reduce the dislocation, but this was found impossible without assistance.

On examination at St. Joseph's Infirmary four hours after injury, the leg was in a position of almost complete extension with inability to flex or extend it. There was a slight abrasion of the skin about 2 inches above the patella. The knee was greatly swollen and the patient complained of considerable pain, especially when the leg was moved. The patella was firmly fixed and formed an unusual prominence between the femur and the tibia. A roentgenogram revealed that the patella had been turned vertically through a right angle, the upper border being engaged between the femur and the tibia. There was no fracture of the patella, but the taut patellar tendon had partially torn loose the tuberosity of the tibia.

Under general anesthesia the dislocation was readily reduced by manipulation. With the thigh over the right shoulder of the operator, the leg was forcibly flexed, and at the same time traction was made on the leg. The patella readily snapped into position, the whole procedure requiring only two or three minutes. A posterior splint was applied. Because of the great amount of swelling and effusion into the joint, extension was applied twelve hours after operation. This was removed at the end of one week, and passive motion was started. Three weeks after the injury there was only slight swelling, and, with the knee strapped, the patient was able to walk with no discomfort. Examination six weeks later disclosed complete recovery with no limitation of motion.

COMMENT

Since operation was not resorted to in this case, we can only speculate as to the character and extent of injury sustained by the joint structures. We know that such a dislocation occurs only when great force has been exerted downward and backward on the patella with the knee flexed. The patella cannot rotate through an axis of 90 degrees and engage its upper border under the condyles of the femur without either rupturing the powerful quadraceps extensor tendon or herniating through its posterior surface. The rapid and extensive swelling and effusion would indicate serious injury of the joint structures.

Careful search has failed to reveal an adequate description of this unusual dislocation. Most of the textbooks on surgery make no mention of it, while some merely state that such a dislocation of the patella is possible, but is secondary to serious injury of the quadriceps tendon and other joint structures. Perkin's[1] case is the only one reported in the journals of this country in recent years. Rutherfurd[2] of Glasgow reports three cases of his own and four other cases previously reported by Reichel. In all of these cases the leg was held rigid in a position of almost complete extension, probably owing to the tense patellar ligament. Open operation was the method employed in reducing all but two, in which cases the patella was dislodged by means of spikes driven into it for traction. In this case we were fortunate in being able to reduce the dislocated patella by manipulation, as described, but one can readily understand that this is not always possible.

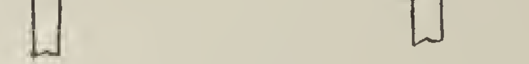
Atherton Building.

A NEW COLON TUBE

J. J. Brownson, M.D., Dubuque, Iowa

It has always been regarded as very difficult, if not unusual, to be able to pass the ordinary rectal tube up through the sigmoid into the colon.

In 1917, I devised the tube here illustrated. As the rubber industry was rushed with war orders, I was unable to have the tubes made, so I was forced to improvise them myself by taking the finger of a fresh rubber glove, and fastening on the ordinary tube.



New colon tube.

A glance at the picture will show how it works. When passing, if the instrument becomes blocked by the curve of the bowel, the fluid runs into the bulb and distends it. This pushes the inner wall of the intestine to one side and permits the introduction of the tube up into the descending colon. The bowel may then be filled with fluid, and the tube left in situ. Allowing the solution to run out permits the free passage of flatus through the tube, which seems to relieve that annoyance of after-treatment, gas pains.

As soon as some of our instrument makers perfect these principles in making the tube, and by using air to inflate the bulb when necessary, I believe it will be possible to get fluid above the ileocecal valve, so as further to relieve many cases of obstruction, intussusception and paresis.

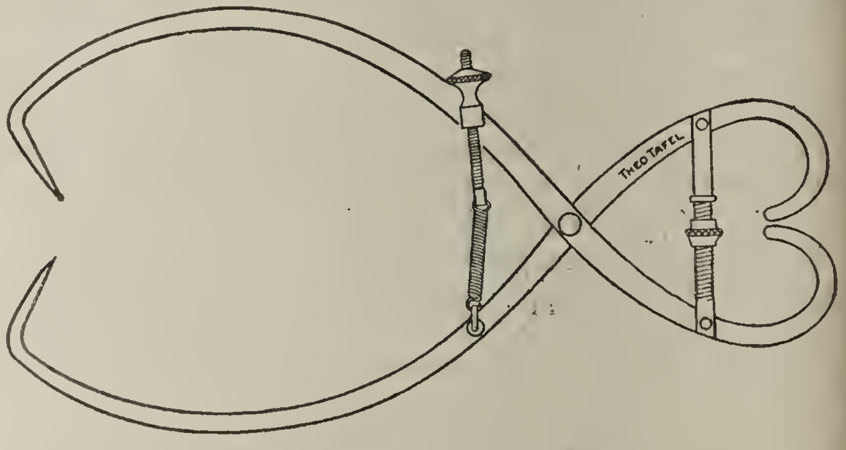
The clinical results with the tube have been excellent in the ten cases in which I have employed it, both in private practice and in consultation.

MODIFICATION OF KNEE EXTENSION APPARATUS

L. Ray Ellars, M.D., Louisville, Ky.

This modification of the ordinary knee extension apparatus has several advantages over the type ordinarily used:

1. The small tension spring keeps the points of the calipers in close contact with the bone at all times, thus eliminating the possibility of their slipping or creeping if for any reason the traction should be momentarily released, as by accidentally striking the weights.



Modification of knee extension apparatus.

2. The adjustment keeps the points from penetrating the bone too deeply, as it allows the same pair of calipers a wider latitude of adjustment.

3. By means of this small tension spring, the caliper points are kept in contact with the bone while the ropes are being attached, thus eliminating the necessity of having an assistant. This is especially true when the calipers are being applied under local anesthesia, which is certainly the method of choice.

DIPHTHERIA OF THE MIDDLE EAR AS A PRIMARY INFECTION

Robert M. Blanchard, M.D., Fort Sheridan, Ill.
Lieutenant Colonel, Medical Corps, United States Army

A private, aged 22, white, admitted to the hospital Feb. 9, 1922, had had a bad cold in the head and a congested nose for two days and, on the day of admission, a discharge from the left ear. This discharge was not preceded by any pain or discomfort. The day after admission, the right ear began to discharge without any previous discomfort except fulness. On admission, all other objective symptoms, including those of the throat and larynx, were negative. The subjective symptoms were not marked, but the patient complained of being light headed, and had no appetite. The temperature on admission was 102.

Both ears continued to discharge freely and were treated daily in the ear clinic, with routine treatment of warm boric acid irrigations, phenol (carbolic acid) and glycerin packs, and alcohol cleansing. The condition remained unchanged for five days, with the temperature ranging from 101 to 103, and the patient growing weaker and very deaf. The ear drum at this time seemed to be covered with a sort of exudate not typical of the ordinary otitis media, and I was led to take cultures of the discharge from both ears. February 17, these were both reported positive for diphtheria bacilli, and 10,000 units of antitoxin was given. On the 18th the temperature had dropped to 99 and on the 19th was normal and remained so. By the 22d there was no discharge from the ears, the hearing had improved, and the patient felt very much better. By the 27th there had been two negative ear cultures and a negative throat culture, and the patient was discharged to duty, cured.

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[1] Perkins, J. W.: Hitherto Undescribed Dislocation of the Patella Endwise, J. A. M. A. **74:** 388 (Feb. 7) 1920.

[2] Rutherfurd, H.: Downward Dislocation of the Patella, Brit. J. Surg. **8:** 524 (April) 1921.

AN APPARATUS FOR AIDING IN LUNG EXPANSION

Harry S. Irvine, M.D., and J. Earl Else, M.D., Portland, Ore.

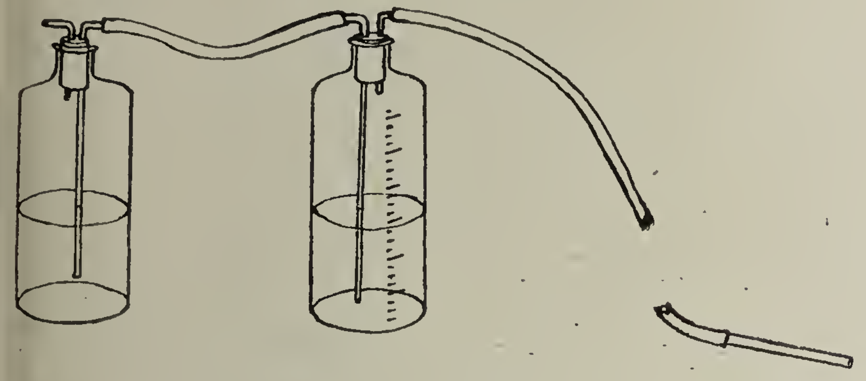
In the postoperative treatment of empyema, the securing of lung expansion is essential to ultimate cure. This is particularly difficult in those cases in which surgery has been so delayed as to allow collapse of the lung, thickening of its pleura, and the formation of adhesions.

The use of a closed system of drainage will at best only prevent pneumothorax. Even a successful negative pressure attachment to the drainage tube is not effective in expanding a collapsed lung which is bound by adhesions and thickened pleura.

Such a lung must be inflated by pressure from within. The Woulfe bottles are used to aid the patient in this inflating process. The modification here described has the advantages of (1) always being ready for use without refilling or changing by the nurse, and (2) providing a means by which the patient can note progress, in this way securing better cooperation.

The modification is, first, the use of a siphon between the two bottles, and second, the graduating of the first bottle.

The apparatus consists of two equal sized bottles fitted with two-hole stoppers. One short glass tube bent at right angles is fitted into each stopper. Each is also fitted with a right angle tube which is long enough to reach nearly to the bottom of the bottle, so that the siphon is not easily broken. The two long tubes are connected by rubber tubing One of the short tubes is connected with a glass tube for a mouthpiece by a longer piece of rubber tubing. The first bottle is then nearly filled with water. The patient blows until the level of the water is just above the end of the siphon tube, and the water siphons back while the apparatus is not in use.



Modification in use of Woulfe bottles in which the first bottle is refilled by a siphon from the second while the patient is resting.

If both bottles are kept at the same level, the siphon equalizes the amount of water in both bottles. If the second bottle is elevated to a level higher than that of the first bottle, the patient may blow nearly all of the water into the former, and it will return to the latter while the patient rests.

The first bottle is graduated at 25 c.c. intervals either by markings on the glass itself or on adhesive tape applied to the side of the bottle.

The patient, trying to find how few breaths will be required to blow a certain amount of water from the first to the second bottle, will cause a persistent stretching of the pleura and adhesive bands. The motion of the pleura prevents the plastic exudate from forming new adhesions. The definite visible signs of improvement in expansion encourages the patient to work with the apparatus as much as is consistent with his strength.

Stevens Building.

Horsehair for Hypodermic Needles.—I have found horsehair (suture clippings) to be more effective than either brass or steel wire for keeping open the lumen of all kinds of hypodermic needles. As they are black, they are readily seen and picked up when wanted for reinsertion into the needles. They never rust, seldom break, and may be sterilized inside and along with the needles.—Benjamin A. Daniels, M.D., Tampa, Fla.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

IOTHION. — Iopropane. — Di-Iodo-Hydroxy-Propane. — 1,3-di-iodo-propane-2-ol.—$CH_2I.CH(OH).CH_2I$. Iothion contains from 77 to 80 per cent. of iodine.

Actions and Uses.—Iothion is used when it is desired to obtain the systemic effect of iodides by external application. Iothion is absorbed from the intact skin. It is claimed to be practically unirritating to the skin in the concentrations ordinarily used, and to produce no discoloration.

Dosage.—Iothion is used in the form of iothion oil, in solution in alcohol or glycerin, or in the form of ointments containing from 5 to 20 per cent. of iothion. It is applied without friction, and the parts are not bandaged.

Manufactured by the Bayer Company, Inc., Rensselaer, N. Y. (Winthrop Chemical Company, New York, distributor).

Iothion Oil: Iothion, 10 parts; chloroform, 10 parts; olive oil, 80 parts.

Iothion is a yellowish, oily liquid having a faint but not unpleasant odor. It is insoluble in water; soluble in alcohol, ether, chloroform, carbon disulphide, glycerin and oils. It is volatile at body temperature. It is decomposed by alkalis and weakly alkaline solutions. The specific gravity is from 2.4 to 2.5 at 20 C.

Heat about 1 Gm. of Iothion, accurately weighed, on the water bath under a reflux condenser, with 25 Cc. of half normal alcoholic potassium hydroxide for from five to six hours. Dilute with water and evaporate the alcohol. Add a slight excess of dilute sulphuric acid and a few cubic centimeters of sodium nitrite solution, and extract with carbon disulphide until all of the iodine has been removed. Titrate the carbon disulphide solution with tenth-normal sodium thiosulphate in the usual way. The tenth normal sodium thiosulphate consumed indicates not less than 77 per cent. nor more than 80 per cent. of iodine.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1922, p. 310).

Parke, Davis & Co., Detroit, Mich.

Typhoid-Paratyphoid Vaccine (Prophylactic).—Marketed in packages of three 1 Cc. bulbs, the first dose containing 500 million killed typhoid bacteria, 375 million killed paratyphoid A and 375 million killed paratyphoid B bacteria, the second and third doses each containing 1,000 million killed typhoid bacteria, 750 million killed paratyphoid A and 750 million killed paratyphoid B bacteria, respectively, suspended in physiological solution of sodium chloride and preserved with cresol, 0.3 per cent.; also marketed in packages of three 1 Cc. syringes, the first dose containing 500 million killed typhoid bacteria, 375 million killed paratyphoid A and 375 million killed paratyphoid B bacteria, the second and third doses each containing 1,000 million killed typhoid bacteria, 750 million killed paratyphoid A and 750 million killed paratyphoid B bacteria, respectively, suspended in physiological solution of sodium chloride and preserved with cresol 0.3 per cent.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1922, p. 304).

Parke, Davis & Co., Detroit, Mich.

Pneumococcus Vaccine (4 Types).—A suspension of pneumococci, Type I, II, III and Group IV, in equal proportions in physiologic solution of sodium chloride, preserved with cresol 0.3 per cent.; each cubic centimeter contains 3,000 million killed bacteria. Marketed in packages of four 1 Cc. bulbs, four 1 Cc. syringes, 5 Cc. vials and 20 Cc. vials, respectively.

STREPTOCOCCUS VACCINE (See New and Nonofficial Remedies, 1922, p. 308).

Parke, Davis & Co., Detroit, Mich.

Streptococcus Vaccine Polyvalent (Scarlatina).—Marketed in packages of four 1 Cc. bulbs, each cubic centimeter containing 1,000 million killed streptococci isolated from scarlatina cases, suspended in physiological solution of sodium chloride and preserved with cresol, 0.3 per cent.; also marketed in packages of 4 Cc. syringes, in 5 Cc. vials and in 20 Cc. vials.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1922, p. 303).

Parke, Davis & Co., Detroit, Mich.

Pertussis Vaccine.—Marketed in packages of four 1 Cc. bulbs, each cubic centimeter containing 4,000 million killed pertussis bacilli (Bordet) suspended in physiological solution of sodium chloride and preserved with cresol, 0.3 per cent.; also marketed in packages of four 1 Cc. syringes, in 5 Cc. vials and 20 Cc. vials.

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SATURDAY, MAY 13, 1922

CALCIUM REQUIREMENT OF HUMAN FETUS

It is a physiologic platitude that calcium is an indispensable element for the construction of a normal body structure. In the composition of the adult there is more lime than any other inorganic element. If the body weight is estimated at 70 kg. (154 pounds), the content of calcium will approach 1.4 kg., or about 3 pounds, of which nearly all is present in the bones. Such figures serve to emphasize the importance of lime in the economy of the human organism. Sherman[1] has made careful estimates of the metabolism of calcium from the numerous experimental data now available in the literature, and has reached the conclusion that an average of 0.45 gm. represents the daily expenditure under conditions of closely restricted calcium intake. This is presumably a minimal figure on which an average man can maintain equilibrium; and if one allows a 50 per cent. increase to secure an optimal intake, it would seem, according to Sherman, that the food of a family should furnish at least 0.67 gm. of calcium "per man per day." It is important to know that half of the American dietaries which have been studied with respect to their inorganic constituents show figures below this proposed optimum, while 15 per cent. of the recorded dietaries indicate the allotted daily food to yield even less than the 0.45 gm. adjudged to be a minimal figure.

Pregnancy and lactation make additional demands for lime. The recognition of this is expressed in the adage that "every child costs a tooth." In order to appreciate the quantitative aspects of the withdrawal of calcium from maternal sources for the development of the fetus, statistics of the composition of the latter at different stages of its formation are obviously needed. The data heretofore available have been somewhat scanty. Recently, however, Givens and Macy[2] have reported investigations of twenty-five fetuses ranging from 90 to 400 mm. in length and consequently varying from 3 to 8 lunar months in age. The large and rapid increments in size occur after the fifth month of uterine existence. Up to the third month the total calcium requirement approximates somewhat more than 200 mg. in all. According to Givens and Macy, for the first third of pregnancy the fetal demand for calcium varies from 7 to 20 mg. a day, whereas for the total period it may average 70 mg. or more a day. During the latter days of rapid intra-uterine fetal growth, the daily requirement must be far above this average figure.

The practical problem concerns the possibility of supplying the normal needs plus this fetal demand out of the mother's food intake. Sherman has ventured the statement that the "ordinary mixed diet" of Americans and Europeans, at least among dwellers in cities and towns, is probably deficient in calcium more often than in any other chemical element. Bread and meat, the two most popular ingredients of the American dietary, are decidedly poor in calcium. Indeed, it would be virtually impossible to consume enough of these articles of food to supply the estimated quota of lime without intolerable demands on the metabolic capacities of the body. In the use of milk lies at present the foremost prospect of a successful solution of the lime problem as outlined. A pint of milk—representing 300 calories or more—will itself furnish at least half a gram (500 mg.) of lime. Whether the pregnant mother can actually "assimilate" from her food the relatively large quantities of calcium requisite remains to be more definitely determined. However, it should be noted that the higher requirement does not end with parturition. Lactation, involving the secretion of a fluid rich in lime, makes a continued demand for an augmented daily maternal supply. Furthermore, if the abundant body store has for some reason become partly depleted, the loss deserves to be made good in due season. It is gratifying to have some new, accurate facts on which to base further considerations of the lime problem in the diet of pregnancy.

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[1] Sherman, H. C.: Chemistry of Food and Nutrition, New York, the Macmillan Company, 1918, p. 264.

[2] Givens, M. H., and Macy, I. G.: The Calcium and Magnesium Content of the Human Fetus, J. Biol. Chem. **50**: 34 (Feb.) 1922.

THE CIRCULATORY COMPENSATION IN SEVERE ANEMIAS

There are many instances of anemias in man in which the oxygen-carrying capacity of the blood is enormously diminished. In some of the chronic forms of the disease, patients may continue to live with as little as one tenth of the normal amount of hemoglobin per unit of blood volume. With a somewhat larger content of hemoglobin they are likely to be comfortable and may sometimes be able to work to a slight extent. At any rate, signs of dyspnea are present only when there has been exertion. How the seemingly extreme degrees of reduction in the oxygen-carrying capacity of the blood—a decrease often far greater than is almost certain to bring symptoms of distress when the hemoglobin is exposed to carbon monoxid—are so well tolerated in anemias has been somewhat of a physiologic puzzle. How, for instance, is anoxemia avoided in persons showing a normal oxygen consumption and an oxygen content per cubic centimeter of arterial blood less than half the amount normally abstracted in the capillaries for the processes of oxidation? Actual measurements on severely anemic patients give no basis for the assumption that their metabolism is slowed so that they require less oxygen than the normal person of comparable size. There is no increased pulmonary ventilation in such cases when exertion is avoided. Hence, as Hewlett [1] has clearly pointed out, the respiratory compensation in chronic anemias must lie either in the blood itself or in the rapidity of the circulation.

All the more recent evidence contradicts the idea that the hemoglobin in the blood of patients with anemia has any increased potency for carrying oxygen. The compensation against decreased content of respiratory pigment is therefore not due to some unique chemical character developed in the oxygen-carrying substance. The researches by Fahr and Ronzone [2] at the University of Wisconsin demonstrate clearly, on the other hand, that in severe anemias increased minute volume is the outstanding compensatory mechanism for the loss of oxygen-carrying power of the blood. In a case of severe pernicious anemia, for example, the increase amounted to 250 per cent., and the systolic output of the heart was augmented in the same degree. The augmented blood velocity is, of course, greatly facilitated by the lowered viscosity of the circulating medium due, in turn, to the reduction in the number of red corpuscles, which play a significant part in the normal resistance to flow in the vessels. Another factor may be an increased "effective cross section of the vascular tubing," for microscopic examination of the skin capillaries by Fahr and Ronzone showed that these vessels were contracted down to half the normal diameter or less, thus determining a lessened blood flow through the skin and a larger flow through other organs. It was also shown that the lessened quantity of blood in the skin is certainly one factor in the degree of paling of the skin.

Researches on the anemias show that the coronary circulation is at the upper limit of the possible, being about as large as that found in very severe work. Obviously, then, if such patients are not at rest, and additional effort is thrown on the heart already close to the margin of oxygen sufficiency for its musculature, the latter may readily suffer from anoxemia. It has been alleged that the pathologic changes in the heart muscle in pernicious anemia may well be due to lack of oxygen. At all events, the necessity for the complete rest of persons exhibiting severe anemias is emphasized beyond question.

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[1] Hewlett, A. W.: Functional Pathology of Internal Diseases, New York, D. Appleton & Co., 1917, p. 369.

[2] Fahr, George, and Ronzone, Ethel: Circulatory Compensation for Deficient Oxygen Carrying Capacity of the Blood in Severe Anemias, Arch. Int. Med. **29**: 331 (March 15) 1922.

THE ANTISCORBUTIC PROPERTY OF FOODS

Sherman and Smith, in their recent competent review,[1] of the present status of the vitamins in science and practice, believe it safe to say, on the basis of our present knowledge, that a dietary selected to make the best use of our ordinary staple foods will give little occasion to purchase vitamins in any other form. Moreover, they indicate that it is not necessary to give any greater anxiety to the vitamins than to some other factors which enter into our present conception of nutritive requirements and food values.. "When research in this field," they say, "brings us quantitative knowledge as to the efficiency with which vitamin C can be preserved in our staple fruits and vegetables when canned or dried, comparable with our present knowledge of the good preservation of vitamins A and B in cooked, canned or dried milk, it will become possible to plan food supplies, even for conditions in which fresh food cannot be obtained, with a similar degree of definiteness with reference to vitamins as to other nutritional needs."

It has become common knowledge that not only the traditionally used fruit juices but also many greenstuffs have considerable antiscorbutic potency, that is, they contain the so-called vitamin C. Some of the highly potent antiscorbutic foods, such as cabbage, turnips and tomatoes, are usually so readily available and so well tolerated that one need not search among more expensive products for protective material. The efficacy of the citrus fruits is widely recognized.

So much misconception and confusion exist, in the minds of those not specially conversant with the subject, about the effect of heat and culinary or preservative processes on the antiscorbutic vitamin that it is important to consider the latest findings as they are reported. The decrease in antiscorbutic potency that milk experiences on heating under certain conditions has too often been translated without reservation to all antiscorbutic foods and finally to all vitamins. Vitamin C is, in truth, much more readily destroyed than is vitamin B by both oxidation and heating, but the rate of destruction depends on a variety of conditions, including the duration of the heating, the opportunity for oxidative changes, and the reaction of the medium. These facts are reflected in the statement of the better preservation of "freshness" and antiscorbutic value in cold storage than in storage at ordinary temperature, and the serious loss of this property when food is kept hot for a long time between cooking and serving.

Givens, McClugage and Van Horne [2] have demonstrated anew the antiscorbutic property of raw bananas and apples, two fruits finding widespread favor in many parts of the world. As bananas are almost invariably eaten raw in this country, no significant problem of deterioration of vitamin potency arises in connection with them. This is not equally the case with apples, which are consumed in a considerable variety of conditions. According to the latest evidence, such application of temperature as is ordinarily employed in preservation by desiccation or canning tends to reduce the amount of antiscorbutic vitamin of the original raw apple markedly. This is a practical fact of importance. We must learn not only where vitamins may be found in our common foods but also the conditions under which they are preserved intact.

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[1] Sherman, H. C., and Smith, S. L.: The Vitamins, New York, the Chemical Catalog Company, 1922.

[2] Givens, M. H.; McClugage, H. B., and Van Horne, E. G.: The Antiscorbutic Property of Fruits, II, An Experimental Study of Apples and Bananas, Am. J. Dis. Child. **23**: 210 (March) 1922.

PHYSIOLOGIC GLYCOSURIA

When the urine of healthy persons is examined by refined and delicate methods of analysis, the presence of a certain amount of carbohydrate substance is almost invariably indicated. It is not sufficient in quantity to be readily revealed by the usual tests which clinicians employ in their routine examinations; nevertheless, experience has led to a consensus among trained biochemists regarding the presence of what is generally designated by the somewhat indefinite term sugar. Regarding the actual quantities of such products which pass through the kidney, there is considerable divergence of opinion; but the inference has seemed clear that the renal mechanism is not absolutely impermeable to sugar, even in admitted conditions of perfect health. The presence of a "minute trace" of sugar would thus appear to be a physiologic or normal circumstance; and, accordingly, glycosuria is in a sense an ever-present phenomenon. In order to avoid this term, S. R. Benedict[1] has introduced the expression "glycuresis" to express an increase of sugar elimination above that commonly found in "normal" urine.

It is usually believed at present, at least by clinicians, that there is a definite renal "threshold" for sugar, particularly glucose which has formed the subject of primary concern because it is the sugar of both the blood and diabetic urine. This threshold represents the concentration of sugar in the blood above which glucose appears in the urine. Why the "permeability" of the kidneys for sugar should hinge upon a definite concentration of the carbohydrate in the blood has never been clearly explained except by fantastic analogies; nor has it been clear why the renal threshold should "shift" under varying physiologic or pathologic conditions. In current discussions of sugar metabolism, the authorities have been wont to speak glibly of sugar "assimilation," "tolerance," "thresholds" and the like, without offering any really clear explanation of precisely what is meant. Meanwhile a large number of important experimental facts have been accumulated; and despite whatever may become of the vague hypothesis and indefinite vocabulary, the facts will remain as a permanent basis for progress in understanding.

It is a fact that glycuresis of varying degrees may be encountered after the ingestion of foods of different sorts, particularly carbohydrates. It has been intimated that the quantitative increases in the sugar elimination, measured in milligrams and encountered in supposedly normal persons, is qualitatively or in origin of the same nature as is the clinical elimination of sugar in diabetes. In fact, it has been suggested that the difference between the normal and the diabetic individual may be wholly a quantitative one, just as is that between the mild and the severe case of diabetes. An elaborate study of the transportation, retention and excretion of carbohydrates in man by Folin and Berglund[2] has justified the belief that definite glycuresis, in the sense first indicated by Benedict, occurs after every ordinary carbohydrate meal. The novelty in these investigations lies in the conclusion that glycuresis is independent of the level of the blood sugar, and is not normally obtained from the ingestion of pure glucose, maltose, dextrin or starch. The transition from below to above the renal threshold appears to be so sharp and decisive that there is virtually no intermediate stage represented by glycuresis.

According to Folin and Berglund, glycuresis represents the absorption and excretion of foreign unusable carbohydrate materials present in grains, vegetables and fruits, and decomposition products due to the cooking, canning and baking of such food. If it shall prove to be correct that the sugar of "normal" urine consists of "a motley variety of carbohydrate products and carbohydrate derivatives," including disaccharids and polysaccharids, it seems justifiable to conclude, with the discoverers, that the escape of such miscellaneous unusable carbohydrate material into the urine has no connection with the main carbohydrate metabolism, and, therefore, none with the various problems of diabetes, except with reference to the correct interpretation of weak but positive tests for sugar in the urine.

These findings present certain problems of practical importance. If the foreign carbohydrates concerned in glycuresis may become sufficiently abundant to give positive clinical tests for sugar, how are they to be differentiated from true increments of glucose in the urine? The analytic solution remains to be offered, though the prospect of success does not seem to be imminent. Whether the "foreign" carbohydrates which are commonly eliminated by glycuresis have any physiologic or pathologic significance remains to be ascertained. Folin and Berglund assert that, although the absorption and excretion of foreign carbohydrates is to be sharply separated from the main carbohydrate metabolism, it does not necessarily follow that the precursors of the virtually inescapable sugar of normal urine can be dismissed as of no importance. There is no reason to doubt that these products are absorbed from the blood by the tissues as readily as galactose, lactose and "dextrin." And the constant harboring of such foreign products in all the tissues of the body may very well be the cause of at least some minor disorders. As long as the etiology of so many skin and joint troubles remains unknown, they continue, one cannot entirely dismiss the fact that the human organism is constantly charged with impurities of vegetable origin. Even if this tentative hypothesis seems somewhat gratuitous in the light of the available scanty information; the recognition of the lessons of anaphylactic sensitizations warns us to be prepared for novel findings in this field of study.

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[1] Glycuresis Versus Glycosuria, editorial, J. A. M. A. **72**: 1772 (June 14) 1919; Renal Glycosuria, ibid. **74**: 180 (Jan. 17) 1920.

[2] Folin, O., and Berglund, H.: Some New Observations and Interpretations with Reference to Transportation, Retention and Excretion of Carbohydrates, J. Biol. Chem. **51**: 213 (March) 1922.

Current Comment

UNUSUAL FEATURES OF THE ST. LOUIS SESSION

When the American Medical Association meets in St. Louis on May 22, it will have an opportunity to visit an exhibit of unique character. The Missouri Botanical Garden has reproduced the famous old Chelsea, England, physic garden established in 1673. There will be displayed seventy-two families, 160 genera and more than 200 species of plants, herbs and flowers from which various drugs are derived. The plan of planting was taken from the survey made in 1753 of the old English garden, and the work was done by vocational pupils of the War Veterans' Bureau in the school for gardening. Among other arrangements made by the Botanical Garden are exhibits of the pathology of plants and rare orchids and other flowers. The adaptation of the cinematograph to medical teaching will also have a thorough demonstration at St. Louis. A continuous motion picture and lecture program for the five days of the session will embrace all of the various medical subjects to which motion picture art has been adapted, including operative technic, and even the application of the slow motion camera to the recording of movements. The location of this session and the intense interest taken by the local profession assure a most successful meeting.

CLINICAL SPIROMETRY

Whenever accurate measurement can be applied to physiologic functions with ease under a variety of conditions, progress in clinical diagnosis is likely to ensue. Whether by the measurement of body temperature, the determination of the rate of the heart beat, the estimation of the urea or sugar content of the blood, the enumeration of its corpuscles, or the evaluation of the basal metabolic rate, in each case the establishment of something fairly definite instead of something conjectural about the organism has meant helpfulness in many instances of uncertainty regarding the existence of pathologic conditions. Recently the determination of vital capacity has gained new significance by the accumulation of evidence that healthy persons tend to conform in this respect closely to definite standards. Departures from these indicate the presence of pathologic conditions, as has long been known in the conspicuous cases of diminished lung capacity in patients with cardiac and pulmonary disease. The probability that clinical spirometry will gain increased significance in the near future is suggested by the recent work of Wilson and Edwards.[1] They conclude that the measurement of vital capacity is a fairly constant procedure in the case of children, that it should be recorded on routine physical examination, and that a reduction of 15 per cent. below the average normal should signal a child out for further physical and roentgenographic investigation. Somewhat the same inference may be drawn from the data secured by Hewlett and Jackson [2] from college students. The chief problem has resolved itself for the present into a determination of what norms or correlations of vital capacity with other bodily factors shall be selected to express the results. Before long we may expect to find the procedures of spirometry carefully standardized, as they now are in many other fields of clinical diagnosis.

WAS THE CENTURY COMPANY NAPPING?

On another page [3] we publish a criticism of a book recently issued by a high-grade and old-established house, the Century Company. The book is written by an individual connected with an organization that sells expert service in the general field of industrial chemistry and chemical and electrical engineering. The writer of the book seems to be in charge of that part of the organization that is devoted especially to the problems that arise in the "patent medicine" and allied industries. If the intent of the book is to let the "patent medicine" interests know that its author views the nostrum business from a tolerant, not to say sympathetic angle, it fulfils its mission excellently. If it is written as an expression of gratitude to the "patent medicine" business—some cynic has described gratitude as "a lively sense of benefits to come"—it again must be viewed as a good job well done. But the surprising thing is that the Century Company should have published it. The volume is the fourth of a series of "Books of Useful Science" published by this company. Much of the information it contains is valuable and interesting. Its view of the "patent medicine" business, however, a business which thoughtful students of the problem know to be fraught with harm to the health of the community, seems distorted and misleading, especially by the suppression of that which is true. The picture it gives seems drawn in the interest of the "patent medicine" industry rather than in the interests of the public. How did the Century Company come to put its O. K. on that part of "The Story of Drugs?"

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[1] Wilson, May G., and Edwards, D. J.: Diagnostic Value of Determining Vital Capacity of Lungs of Children, J. A. M. A. **78**: 1107 (April 15) 1922.

[2] Hewlett, A. W., and Jackson, N. R.: The Vital Capacity in a Group of College Students, Arch. Int. Med. **29**: 515 (April) 1922.

[3] "AnApologist for 'Patent Medicines,'" page 1476.

Association News

ST. LOUIS SESSION

Identification Certificates Required

In order to purchase special rate round trip tickets to St. Louis it is necessary to deposit with the ticket agent at the point of purchase a special "identification certificate." A pocket card establishes the fact that the holder is a Fellow in good standing in the Scientific Assembly of the American Medical Association, but the ticket agent, in order that he may sell a special rate railroad ticket, must have deposited with him an order from the passenger associations authorizing him to sell the desired excursion ticket; consequently, those members of the organization who desire to avail themselves of the special railroad rate should write immediately to the secretary of the American Medical Association, 535 North Dearborn Street, Chicago, requesting that the necessary identification certificate be mailed to them. Each such request should be accompanied with a self-addressed, stamped envelop to facilitate the forwarding of the identification certificate.

Medical Historical Exhibits

LIBRARY OF ST. LOUIS MEDICAL SOCIETY

The physicians of St. Louis are arranging for a Medical Historical Exhibit, which will be displayed on the second floor of the Library of the St. Louis Medical Society, 3525 Pine Street. A similar exhibit was arranged at the time of the St. Louis meeting in 1910. That exhibit was visited by large numbers who evidenced great interest in it.

LIBRARY OF WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

There will also be an exhibit in the Library of the Washington University School of Medicine, Euclid and Kingshighway, of classics in anatomy and surgery, selected from a large collection of writings belonging to that library. In addition, there will be displayed the Beaumont collection of manuscripts which is in the possession of the school.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Physician Guilty of Murder.—It is reported that Dr. Joseph Valentine Studer, formerly of Peoria, Ill., was found guilty of manslaughter, April 5, in the superior court, Los Angeles, and sentenced to from one to ten years in the San Quentin prison. He was convicted on a charge of murdering his mother.

Pacific Coast Association of Anesthetists.—This association will hold its first scientific session as a joint meeting with the Section on anesthesiology of the California State Medical Society, at Yosemite, May 15-16, under the presidency of Dr. George P. Waller, Los Angeles. Dr. Albert J. Scholl, Jr., Rochester, Minn., will be one of the principal speakers.

CANAL ZONE

Cornerstone of Gorgas Memorial. — It was officially announced, April 18, that the cornerstone of the Gorgas Memorial Institute of Tropical and Preventive Medicine, Panama, will be laid, July 2, 1923.

COLORADO

Public Health Institute.—It has been announced that the public health institute which was to have been held in Denver this month, under the auspices of the U. S. Public Health Service and the state board of health, has been canceled.

Personal.—Dr. Harry A. Smith, Delta, president of the Colorado State Medical Society, recently underwent an operation in Cleveland.——Dr. Frank E. Palmer, Sterling, sailed from New York City, April 25, to attend clinics in Europe.

CONNECTICUT

Smallpox in the State.—The smallpox situation in Connecticut has become so serious that Dr. John T. Black, commissioner of public health, has requested the governor that a conference of all county health officials, the state council of health and the state board of education be called, to consider measures to be taken to arrest the course of the disease, which has become epidemic. It was announced that not one vaccinated child has had smallpox, but that ninety-four unvaccinated children contracted the disease.

DISTRICT OF COLUMBIA

Occupational Therapy.—The District of Columbia Occupational Therapy Association opened an exhibit in Washington, April 24-29, for the purpose of bringing before the public and medical profession the work of occupational therapy accomplished in the various hospitals and institutions throughout the city.

FLORIDA

Health News.—Resolutions have been adopted by the Duval County Medical Society for the inauguration of an annual week of clinics for physicians and surgeons of Florida and south Georgia. The first meeting under this arrangement will be held, June 7-10. These clinics will be conducted by the staffs of the local hospitals under the direction of the medical society.——A health campaign among employees of the Florida East Coast Railroad, through arrangement with the Flagler system and the U. S. Public Health Service, will be conducted this spring. The campaign will extend throughout the entire system and will consist of the distribution of pamphlets, posting of bulletins and placards, confidential interviews with employees, free lectures, examination and other forms of health protection.

ILLINOIS

Honor for Physician.—Dr. Tullie Van Boyd, East St. Louis, who served as a major during the World War at Castel Franco, Italy, has received the Italian Order of St. Marco and St. Lazarus.

New Public Health Nursing Services.—Definite arrangements have been completed for installing new or additional public health nursing services at Carbondale and Murphysboro in Jackson County, at Anna in Union County and at Harrisburg in Saline County. A similar service has been decided on for the rural territory in Jackson County, while Saline County has the proposition under serious consideration.

Mount Vernon Branch Laboratory Discontinued.—Dr. Wilbur H. Gilmore, who for a number of years has conducted a branch diagnostic laboratory for the state department of public health at Mount Vernon, has removed to Benton, where he will devote his entire time to roentgen-ray work. As a result, the branch laboratory at Mount Vernon is temporarily discontinued. Plans are under way, however, to reestablish a branch diagnostic laboratory for the southern part of the state at Mount Vernon, Centralia or Carbondale.

Drainage of Mosquito Breeding Territory Planned.—At a meeting in Chicago, May 2, between representatives of the state department of public health, the Illinois Central Railway Company, and the U. S. Public Health Service, it was agreed that the Illinois Central Railway Company would actively cooperate in the proposed plan for draining a large area of territory in the vicinity of Carbondale, for the purpose of destroying the breeding places of malaria carrying mosquitoes. Eight thousand dollars was the estimate of the probable cost of the undertaking made by the railway engineers, and provision was made that the state department of public health should handle all matters involved in obtaining ditching rights through private property.

County Medical Societies Meet.—The Jackson and Saline County Medical societies recently held special meetings at Carbondale and Harrisburg, respectively, for the purpose of discussing public health problems and policies with representatives of the state department of public health. Subjects brought up for consideration embraced the reporting of births, deaths and cases of communicable diseases, urban, school and rural public health nursing services and the public health duties of practicing physicians to individual families, to the community and to the state. Along with these topics, the subject of state medicine was brought up, and it was made clear to the physicians present that the state department of public health is definitely opposed to state medicine in any form. It was further pointed out that the policy of the department of health is to develop a mutual, positive cooperation with the practicing physician. As a result of the meetings, the policies of the state department of public health, as established by Dr. Isaac D. Rawlings, director, were unanimously endorsed by the two societies. Both meetings were well attended. Drs. Thomas H. Leonard, Peter S. Winner, Clarence W. East and Elizabeth B. Ball discussed public health from the point of view of the state department of health, while every member present had something to say from the standpoint of the medical profession.

Chicago

Illinois Historical Society.—Dr. Otto L. Schmidt was elected president of the Illinois Historical Society, May 5, at Springfield.

Physician Fined.—A newspaper item states that Dr. Isaac Albright, Chicago, was recently fined $250 and costs for violation of the Harrison Narcotic Law. It was charged that Dr. Albright had received nearly $2,000 from three persons during eighteen months, through illegal sales of drugs.

Medical Value of the Cinematograph.—The Commonwealth Fund of New York City has contributed $10,000 in order to obtain scientific data on the value of moving pictures for use in teaching, and for the systematic study of the educational value of various kinds of pictures, the data to be gathered by Prof. Frank N. Freeman, University of Chicago.

Institute of Medicine Holds Meetings. — On May 10 the Institute tendered an informal dinner to Sir Thomas Lewis. ——On May 12 the Institute and the Chicago Society of Medical History held a joint meeting at which Prof. James H. Breasted of the University of Chicago read a paper on "The Edwin Smith Medical Papyrus, the Oldest Medical Book in America." Dr. L. L. McArthur, representing the Fenger Memorial Association, delivered an address on "The Life and Works of Christian Fenger."

INDIANA

New Appointments.—At the reorganization meeting of the state board of medical examiners, Dr. Jesse W. Bowers, Fort Wayne, was elected treasurer of the board, to succeed Dr. Paul R. Tindall, Shelbyville; Dr. William T. Gott was reelected secretary.

LOUISIANA

State Association Purchases New Orleans Medical and Surgical Journal.—The Louisiana State Medical Association announces that it has purchased the *New Orleans Medical and Surgical Journal,* utilizing in part funds accumulated for the entertainment of the American Medical Association in 1920. At the annual meeting of the Mississippi State Medical Association it was voted to accept this publication as the official journal of that society.

MAINE

Personal.—Dr. Clarence C. Little, research associate in the station for experimental evolution of the Carnegie Institute, has been elected president of the University of Maine, Orono, to succeed Col. Frederick Hastings Strickland. Major Little was formerly assistant dean and research fellow in genetics for the cancer commission of Harvard University, Boston. ——Dr. Charles W. Bell, Strong, has been appointed medical examiner for Franklin County.——Dr. Edward H. Nichols, surgeon-in-chief, convalescent department of the Boston City Hospital, Boston, spoke on "Head Injuries and Fractures" at a recent meeting of the Androscoggin County Medical Association at Lewiston.

MARYLAND

Bureau of Child Hygiene.—The Bureau of Child Hygiene, to be organized in accordance with provisions of the Sheppard-Towner law and legislation passed by the last general assembly of Maryland, will start with a personnel consisting of a director and ten graduate nurses, under plans formulated by Dr. John S. Fulton, secretary of the state department of health. The plans are preliminary in character, and the plan for the permanent organization will be prepared with the advice of the man chosen to direct the work. Headquarters of the bureau will be in Baltimore. The nurses will be distributed through the state, rather than kept in groups.

Reunion of Medical Alumni Association.—A reunion of the Alumni Association of the Johns Hopkins Medical School was held, May 5-6, in Baltimore. Following business meetings, clinical demonstrations were conducted by Drs. William S. Halstead, Howard A. Kelly, John M. T. Finney and Hugh H. Young. The officers reelected were: Dr. Thomas R. Brown, president; Dr. Walter Steiner, secretary, and Dr. J. Albert Chatard, treasurer. Plans for a new club for graduates of the Johns Hopkins Medical School were discussed and arrangements made for the opening of a club on Broadway, near the hospital. This club is to be used as a gathering place for visiting physicians and alumni and will be opened in a few months.

MASSACHUSETTS

Hospital News.—The Carter Memorial Hospital, Clinton and Lancaster, will be altered for obstetric service.——A drive for $50,000 is being conducted to build an addition to the Metcalf Hospital, Winthrop, and convert it into a community hospital.——A hospital for disabled veterans will be erected at Boston.

Cardiac Clinics.—The Boston Association of Cardiac Clinics will hold a meeting at the Children's Hospital, May 18, at which Dr. Louis I. Dublin of the Metropolitan Life Insurance Company, New York City, will give an address on "Heart Disease in the Community," and Dr. Paul W. Emerson, Boston, will speak on "Heart Disease in the Schools."

Industry and Health.—The division of industrial hygiene of Harvard University, Boston, is making studies of the health hazards of industry to ascertain fundamental facts as to the relation between industrial jobs and ill health. The aim of the investigation is to discover how dangerous certain dusts are and whether they can possibly cause death.——The industrial hygiene department of the Massachusetts General Hospital has opened an industrial clinic where they will study cases of industrial toxications, poisoning from inhalation of dust, fatigue of special groups of muscles, etc., as the patients come into the hospital. This department has also lately conducted a study of the health of the employees of twenty-five department stores in Boston, New York and other cities.

Tuberculosis Investigation.—A report has recently been submitted by the committee of the National Tuberculosis Association giving the result of an experiment carried out in Framingham for the purpose of ascertaining the possibilities of controlling tuberculosis in an industrial district. This work was started in 1916 with the financial aid of the Metropolitan Life Insurance Company. In five years the death rate from tuberculosis alone in this community of 18,000 population has dropped 67 per cent. Public health clinics and school clinics were established, and infant mortality dropped 22 per cent. From 121 per 10,000, an average for ten years preceding the experiment, it dropped to 40 per 10,000, in 1921. During the first year of the work, examination of tuberculous persons revealed that 45 per cent. were in the earlier stages of the disease, and 55 per cent. were in advanced stages. At the end of the five years' work, investigation of suspected cases revealed that 83 per cent. of the patients examined were in the early stages of the disease.

Personal.—It is reported that Dr. Arthur V. Goss has resigned as superintendent of the state hospital at Taunton after twenty-eight years of service.——The governor has nominated Dr. Royal P. Watkins, Worcester, for the position of member of the board of registration in medicine for the vacancy made by the resignation of Dr. Michael F. Fallon. ——Dr. Neil A. Dayton, Westboro, has been appointed senior assistant physician at the Wrentham State School, Wrentham. ——Dr. Edwin A. Leavitt, Worcester, is at the City Hospital recovering from a severe attack of uremia.——Dr. Alfonse P. Gagnon has been appointed tuberculosis diagnostician of the board of health and chief of staff of the Bayview Hospital, to succeed the late Dr. Ambrose A. Keeley.——Dr. Lewis F. Baker, Fitchburg, was elected president of the Worcester North District Medical Society, April 26, to succeed Dr. Richard S. Ely, West Townsend.——Dr. William S. Quinland, assistant pathologist, Peter Bent Brigham Hospital, Boston, has been appointed professor of pathology at Meharry Medical College, Nashville, Tenn., the appointment to become effective, September 1.

MICHIGAN

University News.—Dr. Louis M. Warfield has been appointed to the chair of internal medicine at the University of Michigan Medical School, Ann Arbor. Dr. Warfield is a graduate of Johns Hopkins Medical School, and was formerly resident physician in the service of Sir William Osler.—— A loan fund of $10,000 has been presented to the regents of the University of Michigan, to be known as the J. B. and

Mary H. Davis Trust Fund, in memory of Prof. J. B. Davis and his wife.——A gift of twenty valuable paintings in oil and pastel has been received from Jean Augustus Wettmore of New York City.

Personal.—Dr. Willis A. Dewey, University of Michigan Medical School, Ann Arbor, will resign from the university in June, and will spend a year in France and Italy.——Dr. Charles McClelland, Detroit, gave a lecture recently in the Wayne County Medical Building on "Conservation of Vision."——Dr. Rudolph H. Lambert, Battle Creek, has been named tuberculosis expert of the Rehabilitation Division of the Eighth District, U. S. Veterans' Bureau, Chicago.——Dr. Ray S. Dixon, Detroit, has been appointed health officer of Flint, to succeed Dr. William De Kleine, who resigned recently.——Dr. Hugh Cabot, dean of the University of Michigan Medical School, Ann Arbor, spoke on "Surgery" before the annual clinic of St. Rita's Hospital, Lima, Ohio, recently.

MINNESOTA

Physicians Elected to Mayoralty.—Dr. Aaron E. Henslin has been reelected mayor of Leroy; Dr. Henry B. Grimes was recently elected mayor of Madelia, and Dr. Andrew J. Gilkinson, mayor of Osakis.

Death of Dr. Northrop.—Prof. Cyrus R. Northrop, president emeritus of the University of Minnesota Medical School, Minneapolis, died suddenly, April 4, from heart disease, while sitting in his chair at home.

Personal.—Dr. Paul I. Carman was recently elected an honorary member of the Röntgen Society of London.——Dr. Wilson A. Allen, Rochester, recently celebrated his eighty-eighth birthday and his fifty-seventh year of active practice.——Dr. George B. Weiser, New Ulm, was elected president of the state board of medical examiners, April 19, at St. Paul, to succeed Dr. Ida Mackeen.

Workman's Compensation Act.—The supreme court recently confirmed a decision of the county district court that, when a workman signs a release from benefits which he is entitled to under the Workman's Compensation Act, relying on the advice of a physician that recovery will soon be effected, and further trouble sets in as a result of the original injury, he is entitled to additional compensation.

University News.—Steps to create a new department of preventive medicine and public health and to institute a dormitory system for men at the University of Minnesota were taken, April 26, by the board of regents of the university. The new department will take over the present university health service and will offer elective courses, open to students in all the colleges, beginning in the autumn. The sum of $10,000 will be used to equip four frame houses recently purchased for $35,000 for housing forty men. This, it was announced, is the beginning of what eventually will be an extensive system of dormitories on the university campus.

MISSISSIPPI

Mississippi State Medical Society.—At the annual meeting, this week, Dr. S. W. Johnson, Vicksburg, was elected president, and Dr. Henry Boswell, Sanatorium, delegate to the American Medical Association. A committee of five was authorized to negotiate with the Louisiana State Medical Society with regard to the establishment of an official journal. There was an excellent attendance, and the entertainments at Brownswells were enjoyable. The meeting next year was awarded to Jackson.

MISSOURI

University News.—The following have been appointed instructors in the St. Louis University School of Medicine, St. Louis: Dr. George Gellhorn, professor of obstetrics and gynecology and director of the department; Dr. William Kerwin, instructor in gynecology; Dr. William E. Sauer, professor of ear, nose and throat diseases; Dr. John Green, Jr., associate professor of ophthalmology; Edward H. Higbee, assistant professor of ophthalmology; Drs. Harry S. Hughes, Edward C. Spitze, Harvey D. Lamb, instructors in ophthalmology; Drs. Otto V. Lieb, Roy E. Mason and Hugo Reim, assistants in ophthalmology; Dr. Richard Kring, assistant in dermatology; Dr. Harry Sandperl, assistant in surgery; Dr. Ulysses Eugene Hartley, assistant in genito-urinary diseases; Drs. Benjamin G. Haumesser and Louis W. Schreiber, assistants in medicine.——A new chemistry building will be erected at the University of Missouri, Columbia, at a cost of $125,000.——It is reported that Dr. George Dock has resigned his position as professor of medicine at Washington University Medical School, St. Louis.

MONTANA

Investigation of Tick Fever.—Dr. Roscoe R. Spencer, U. S. Public Health Service, has been assigned to the laboratory at Hamilton, to investigate the causes, mode of transmission, and prevention of Rocky Mountain spotted or tick fever, which has prevailed for some time in the Bitter Root Valley of the state.

NEBRASKA

Professor Resigns.—Dr. Arthur D. Dunn has resigned as professor of medicine and clinical medicine at the John A. Creighton Medical College, Omaha, and from the staff of St. Joseph's Hospital, effective June 1.

Physicians Elected to Mayoralty.—Dr. John P. Gilligan, O'Neill, former president of the Nebraska State Medical Association, has been elected mayor of O'Neill.——Dr. Frank L. Frink, Newman Grove, was reelected mayor of that city at the April election.

NEW MEXICO

Health Officers Hold Session.—At the meeting of the New Mexico Health Officers' Association at Albuquerque, April 27, Dr. Samuel D. Swope, Deming, was reelected president of the association, and Dr. George S. Luckett, director of the state bureau of public health, was elected secretary.

State Medical Meeting.—At the fortieth annual session of the New Mexico Medical Society, held at Gallup, April 28-29, under the presidency of Dr. Chester Russell, Artesia, the following officers were elected for the ensuing year: Dr. Harry A. Miller, Clovis, president; Dr. George S. McLandress, Albuquerque, president-elect; Drs. T. E. Pressley, Roswell, Jesse G. Holmes, Alamogordo, and Samuel L. Wilkinson, Belen, vice presidents, and Dr. John W. Elder, Albuquerque, secretary-treasurer. Dr. John W. Elder was chosen as associate editor of *Southwestern Medicine.*

NEW YORK

Bogus Physician Sentenced.—It is reported that Joseph Gold, also known as "Doctor" Walker, was sentenced to five years in Sing Sing Prison, by Judge Bleakley, at White Plains recently, on a charge of grand larceny. It is stated that Gold deceived a number of women by posing as a specialist and asserting that he was a physician in search of a mansion suitable for a sanatorium.

Public Health Institute.—The U. S. Public Health Service, in cooperation with the New York State Department of Health, conducted a series of venereal disease clinics in Albany, April 18-21. These clinics were conducted by Dr. John A. Fordyce, New York City; Dr. Henry H. Hazen, Washington, D. C.; Dr. Grover W. Wende, Buffalo; Dr. Isadore Rosen, New York City; Dr. Edward L. Keyes, Jr., New York City, and Dr. Guy L. Hunner, Baltimore.

Physicians' Suit Dismissed.—It is reported that a $50,000 damage suit brought against Dr. Addison S. Boyce and Dr. Gertrude G. Mack, both of New York City, Dr. Cornelia Brant, Brooklyn, and Dr. Sara Smalley, Newark, N. J., by Dr. William Dieffenbach, president of the board of directors, Community Hospital, New York City, for alleged libel, was dismissed recently by a Nyack jury. The Community Hospital was formerly the New York Medical College and Hospital for Women.

Funds for Graduate Education.—The New York Association for Medical Education of New York City is endeavoring to raise $3,000 from the medical profession in order to establish a centralized control of the various graduate medical schools and individual graduate courses available in New York City. The raising of the $3,000 will bring an additional $12,000, which has been promised by the Carnegie Corporation. Members of the medical profession certainly cannot allow such an opportunity to pass.

Personal.—Dr. Stephen H. Curtis has been appointed director of the bacteriologic and pathologic laboratory at the Leonard Hospital, Troy.——Dr. Collie J. Robinson, Northville, has been appointed health officer of Benson. Dr. Robinson is also health officer of Northville and Northampton.——Dr. Edward T. Delehanty, Albany, has been appointed physician to the Albany jail.——Dr. Linsly R. Williams, director of the Rockefeller Commission on the Prevention of Tuberculosis, in France, has been appointed managing director of the National Tuberculosis Association.

Lack of Rural Physicians.—According to a recent issue of the *Health News,* the problem of finding physicians for rural communities is a matter of growing concern. In some parts of the state, particularly in the Adirondacks, there are no physicians within a radius of 25 or 30 miles. Within four years, ninety-two rural towns and villages in New York State have asked the state department of health to help them secure physicians, and, although every effort has been made, the vacancies have been filled in only sixty-two cases. The state health commissioner points out that, although $130,000 has been appropriated by the state for the protection of maternity and child life, it is useless to talk about child welfare in those regions where there are no doctors, nurses, or hospitals. It is suggested that any moderate sized town should be able to support a small hospital, with laboratory, clinics and nurses, and consultation and diagnostic facilities, as well as it supports a community high school.

New York City

Eyesight Tests.—On health day in the public schools of New York City, the Eyesight Conservation Council of America tested the eyes of nearly a million children, and distributed 50,000 copies of a pamphlet on the conservation of vision.

NORTH CAROLINA

Public Health Association.—At the annual meeting of the North Carolina Public Health Association, in Winston-Salem, April 24, Dr. Alexander C. Bulla, Winston-Salem, was elected president, and Dr. Frank M. Register, Raleigh, secretary.

Personal.—At the annual meeting of the Rutherford County Medical Society, held at Rutherfordton, Dr. Frank W. H. Logan, Rutherfordton, was elected president.——Drs. Foy Roberson and Baird U. Brooks have been elected members of the board of health of Durham.——Dr. Kemp P. B. Bonner, Morehead City, secretary of the state board of medical examiners, has been appointed director of the bureau of maternity and infant hygiene of the state board of health.

State Medical Meeting.—At the annual meeting of the Medical Society of the State of North Carolina, held in Winston-Salem, April 25-27, under the presidency of Dr. Hubert A. Royster, Raleigh, the following officers were elected for the ensuing year: president, Dr. John Wesley Long; vice presidents, Drs. Frederic M. Hanes, Greensboro, Thomas C. Johnson, Wilmington, and Benjamin L. Long, Hamilton, and secretary-treasurer, Dr. Lewis B. McBrayer. Asheville was selected as the meeting place for the 1923 convention.

OKLAHOMA

Hospital News.—Additions to cost $150,000 will be erected at the Okmulgee City Hospital, including an institution for negro patients.——A new hospital will be erected at Watonga, at a cost of $20,000.——The Clinton State Hospital for tuberculous patients, Clinton, was opened to the public, April 3.

Personal.—Dr. Fred S. Watson, Okmulgee, has been appointed city and county physician, to succeed Dr. John E. Bercaw.——Dr. Milton K. Thompson, Muskogee, will leave for Europe, May 28, to represent the state medical association at the Tenth International Congress of Otology in Paris.——Dr. LeRoy Sante, St. Louis University School of Medicine, St. Louis, read a paper before the Tulsa County Medical Society, April 24.

OREGON

Hospital News.—An addition will be erected at the Sellwood Hospital, Portland, to increase its capacity to ninety-two beds.——A new Catholic hospital was recently dedicated at Bend.——The Western Oklahoma State Tuberculosis Sanatorium, Clinton, was opened to the public, April 3, and twenty patients have already been admitted.

PENNSYLVANIA

New Antituberculosis Association.—The McKean County Antituberculosis Association was organized at Smethport, April 20.

Practitioner for Seventy Years.—The Lebanon County Medical Society tendered a complimentary dinner to Dr. William M. Guildford, April 26, in celebration of his seventieth year of continuous practice in the city of Lebanon.

Philadelphia

Nathan Lewis Hatfield Lectures.—Sir Thomas Lewis, London, England, delivered the fourth Nathan Lewis Hatfield lecture at the College of Physicians of Philadelphia, May 5, on "The Action of Digitalis in Cases of Auricular Fibrillation and Flutter."

Personal.—Dr. Charles J. Hatfield has resigned as managing director of the National Tuberculosis Association, Washington, D. C., so that he can devote more time to the Henry Phipps Institute, of which he is director.——Dr. Robert P. Sturr has been appointed assistant radiologist to the Philadelphia Polyclinic Hospital.——Dr. Earl D. Bond has been appointed head of the Kirkbrides (Pennsylvania Hospital), to succeed Dr. Owen Copp, who will retire in October.

Gifts to Phipps Institute.—At a meeting of the advisory council of the Phipps Institute, Philadelphia, April 29, gifts totaling $150,000 were announced. The sum of $25,000 will be given yearly for five years by the Carnegie Corporation, for research purposes. Josiah H. Penniman, Ph.D., acting provost of the University of Pennsylvania, stated that the board of trustees had voted $25,000 to be given during the next two years to the institute. The family of Henry Phipps announced that they pledged $500,000 to the endowment fund, provided an additional $2,500,00 be raised.

Society Meetings.—At the annual meeting of the Obstetrical Society of Philadelphia, Dr. Stephen E. Tracy was elected president and Dr. Charles S. Barnes, secretary.——The Pathological Society of Philadelphia elected Dr. Frederick D. Weidman president, and Dr. Frank B. Lynch recorder.——The Section on Industrial Medicine and Public Health of the College of Physicians elected Dr. William S. Higbee chairman, and Dr. Ralph E. Getelman clerk.——At the annual meeting of the Samaritan Hospital Medical Society, the following officers were elected: president, Dr. Gustavus C. Bird; vice president, Dr. Hugh Cotter Boyle, and secretary-treasurer, Dr. James Norman Coombs.

Hospital Survey.—The Welfare Federation will make a comprehensive survey of the hospital situation in Philadelphia, in order to place the hospitals on something approximating a cooperative basis. Hospital enlargement plans contemplated for the city call for an expenditure of $20,000,000. These plans have been made tentatively by the individual hospitals, without reference to the need of the city as a whole, or the relation of one hospital to another with respect to public service. The chairman on the committee of charities voices the need for a central registry office to which any one can apply to learn of vacant beds available in the various hospitals.

SOUTH CAROLINA

Hospital News.—Work will be started immediately on a new wing to be erected at the Baptist Hospital, Columbia, at a cost of $50,000.——A new infirmary will be built at State Park at a cost of $10,000.——Through the generosity of an anonymous donor, a hospital will be erected on the site of the Citadel Military College of South Carolina, Charleston, at a cost of $60,000.

Child Welfare Service.—The state board of health is furnishing toxin-antitoxin free of charge. All county health departments are establishing free clinics at rural schools for the inoculation of children. In Charleston County alone, 2,500 toxin-antitoxin inoculations have been given since January.——A series of twenty child welfare conferences are being held in various rural sections of Greenville County Department of Health for the purpose of giving the mothers in the rural districts an opportunity to inform themselves of the problems of child hygiene.

Personal.—Dr. Barton Cooke Hirst, professor of obstetrics, University of Pennsylvania, Philadelphia, gave an address on "Surgical Treatment of the Commonest Diseases of Women" before a meeting of the Richmond Surgical Society, recently.——Dr. Walter Boone, health officer of Cherokee County, is convalescing from an operation for appendicitis.——Dr. B. R. Brown has been appointed city physician of Gaffney.——Dr. Thomas O. Kirkpatrick, Lowndesville, was elected president of the Abbeville County Medical Society, April 13.

TEXAS

Physician Convicted of Manslaughter.—We are informed that Dr. Emery H. Boaz, formerly of Memphis, is serving a term of from two to five years in the Texas State Penitentiary following conviction on the charge of manslaughter.

Hospital News.—A new city hospital will be erected at Houston, at a cost of $200,000.——Local physicians and business men will incorporate and establish a hospital at Mercedes.——A new city hospital will be erected in Ranger at a cost of $30,000.——A new building will be constructed at the

Mercy Hospital, Evansville, at a cost of $73,000. This addition will be operated by the Sisters of Mercy of Laredo.

WEST VIRGINIA

Personal.—Dr. Floyd F. Farnsworth has resigned as director of the bureau of venereal diseases, Charleston.

CANADA

Memorial to Osler.—Osler Hall, erected in Queens Park, Toronto, as an auditorium for the Toronto Academy of Medicine, was dedicated in April. In connection with the ceremonies, Sir Edmund Osler presented to the academy a portrait of his brother, Sir William Osler.

Western Ontario Academy of Medicine.—At a meeting of the academy held in London recently, Dr. Robert D. Rudolf, Toronto University, read a paper on the "Use of Cardiac Stimulants in the Treatment of Disease," and Dr. Clifford G. Grulee, Rush Medical College, Chicago, gave an address on "The Institution and Termination of Breast Feeding."

Canadian National Council for Combating Venereal Disease.—This council recently organized a business management committee which will have general supervision of the business affairs of the council. It is expected that eventually it will include outstanding business men in each province in Canada.

Canadian Red Cross.—The Nova Scotia division of the Canadian Red Cross has placed a public health nurse in every county in the province, who will be maintained by the Red Cross for one year in order that they may demonstrate their usefulness to the municipal authorities during that time; so that thereafter the latter will see the advantage of providing for and retaining a public health nurse. The same project is being carried out in New Brunswick.

Sigma Xi at McGill University.—The thirty-sixth chapter of Sigma Xi (scientific fraternity) was installed at McGill University, Montreal, April 13. This is the first chapter to be established outside the United States. The new chapter has a charter membership of forty-one, including representatives of science and of medicine. Dr. Walter W. Chipman was elected president of the chapter and Prof. R. DeL. French, secretary-treasurer. Sir Arthur Currie, principal of the university, was one of the guests at the installation dinner.

Personal.—Dr. Fred W. Routley, Maple, Ont., has been appointed director of the Ontario Division of the Canadian Red Cross Society.——Mrs. A. M. Huestis was elected president of the Toronto Social Hygiene Council recently to succeed Rabbi B. R. Brickner.——Dr. George E. Armstrong, professor of surgery at McGill University, Montreal, has received the honorary degree of master of surgery from the University of Dublin, Ireland.——The Order de Leopold has been conferred by the king of the Belgians on Col. C. A. Hodgetts, C. M. G., late city health officer of Ontario.

Society News.—The forty-second annual meeting of the Ontario Medical Association will be held in Toronto, May 30-31 and June 1-2, under the presidency of Dr. Frank J. Farley.——At a meeting of the physicians of Renfrew County, held recently, Dr. Thomas C. Routley, secretary of the Ontario Medical Association, organized the Renfrew County Medical Society, which will be in active affiliation with the provincial association.——The District Medical Society No. 6 was recently organized in British Columbia as a local subsidiary of the British Columbia Medical Association, with headquarters at Nanaimo. Dr. W. Fred Drysdale was elected president, and Dr. T. J. McPhee, secretary-treasurer.——At a meeting of the Vancouver Medical Association the following resolutions were passed: 1. Physicians should refuse to write prescriptions for known drug addicts, unless they were confined in a hospital for treatment. 2. The Pharmaceutical Association should be communicated with and every druggist be requested to telephone the physician for a corroboration of any prescription containing a narcotic. The druggists at a later meeting willingly consented to cooperate with the medical men in carrying out this resolution.

GENERAL

Association of American Teachers of the Diseases of Children.—The annual meeting of the association will be held at St. Louis, May 23, under the presidency of Dr. Edgar P. Copeland, Washington, D. C.

American Dermatological Association Elects.—At the annual meeting of the American Dematological Association, held in Washington, May 2-4, Dr. Howard Morrow, San Francisco, was elected president, and Dr. Udo J. Wile, Ann Arbor, Mich., secretary-treasurer.

Tuberculous Cows.—The deficiency appropriation bill now in conference in the United States Senate carries an appropriation of $2,578,800 for the eradication of tuberculosis among cattle. This assignment will be available to the states that appropriate an equal amount for use in their own territory.

National Anaesthesia Research Society.—It is announced that the monthly bulletin on "Current Research in Anaesthesia and Analgesia" will be issued in regular magazine form, following the May edition. Plans for the new arrangement will take some time for completion, and there may be some delay before the appearance of the next issue.

Air Service Medical Association.—The annual meeting of the Air Service Medical Association will be held at the Washington University Medical School, St. Louis, May 23, under the presidency of Brig.-Gen. William H. Wilmer, Washington, D. C. Drs. Newell C. Gilbert, Chicago, and Carl H. Greene, Rochester, Minn., will be among the speakers.

Reunion of Officers of Base Hospital No. 53.—Officers of Base Hospital No. 53, Laugres, Haute Marne, France, who attend the meeting of the American Medical Association in St. Louis, are invited to a reunion and dinner at the Hotel Jefferson, May 23, at 6 p. m. Dr. O. P. Bennett, Washington, Ill., is chairman of the committee to make arrangements.

American Gynecological Society Elects.—At the annual session of the American Gynecological Society, held in Washington, May 1-3, the following officers were elected for the ensuing year: president, Dr. John A. Sampson, Albany, N. Y.; vice presidents, Dr. Brooke M. Anspach, Philadelphia, and Dr. Frank W. Lynch, San Francisco; secretary, Dr. Arthur H. Curtis, Chicago, and treasurer, Dr. Charles C. Norris, Philadelphia.

Association of American Physicians Elects.—At the thirty-seventh annual meeting of the Association of American Physicians, held in Washington, May 4, the following officers were elected for the ensuing year: Dr. James B. Herrick, Chicago, president; Dr. Charles F. Martin, Montreal, vice president; Dr. Thomas McCrae, Philadelphia, secretary; Dr. Thomas R. Boggs, Baltimore, recorder, and Dr. Joseph A. Capps, Chicago, treasurer.

American Pediatric Society Elects.—The American Pediatric Society, at its thirty-fourth annual meeting in Washington, D. C., May 1-3, elected the following officers for the ensuing year: president, Dr. L. Emmett Holt, New York; vice president, Dr. William W. Butterworth, New Orleans; secretary and treasurer, Dr. Howard Childs Carpenter, Philadelphia; recorder and editor, Dr. Henry L. K. Shaw, Albany, N. Y.; member of the council, Dr. W. McKim Marriott, St. Louis.

American Society for the Control of Cancer.—This society called a meeting in Washington, D. C., under the auspices of the Medical Society of the District of Columbia, April 25. Dr. Hubert Work, President of the American Medical Association, and Dr. Charles A. Powers, Denver, president of the American Society for the Control of Cancer, gave addresses at the meeting, which was held to lay before the organization the preliminary plans for the campaign of education on cancer prevention which will be held in the autumn.

A Meeting of Cardiologists.—A meeting under the auspices of the Philadelphia Society for the Prevention and Relief of Heart Diseases will be convened at 3 p. m. on Tuesday, May 23, in the lecture room in the department of chemistry of the Washington University Medical School, St. Louis. Dr. S. Calvin Smith, Philadelphia, has been delegated by the society to convene this meeting at which time it is proposed to organize an association through which rules may be evolved which will establish, on a firm basis, the art of making and interpreting electrocardiographic records. An invitation is extended to all physicians especially interested in the study of heart affections to attend this meeting.

Dinner to Colonel Garrison.—On May 1 a number of the friends of Col. Fielding H. Garrison gave a dinner in his honor in Washington, D. C. Dr. Harvey Cushing presided. Following the dinner Dr. Welch gave an account of Dr. Garrison's work in medical history and bibliography. He pointed out the great debt which the medical profession of all civilized countries owes Dr. Garrison for his work in medical history, placing him in a group with Sudhoff, Neuberger and Singer, among the great medical historians of the world. Among the forty physicians who attended were representatives from practically the whole United States. Dr.

Garrison will leave shortly to take up new duties in the Philippines.

American Academy of Ophthalmology and Oto-Laryngology.—The twenty-seventh annual meeting of the academy will be held in the Twin Cities, St. Paul and Minneapolis, September 19-23, under the presidency of Dr. Walter R. Parker, Detroit. Papers of fellows who desire a place on the program, and abstracts of papers should be in the hands of the secretary not later than July 1. The headquarters are at Hotel Radisson, Minneapolis. Fellows who have any gross or microscopic specimens, old or new instruments, charts, manuscripts, or anything of scientific, educational or historical interest along the lines of ophthalmology and otolaryngology suitable for exhibition, are requested to communicate with Dr. Walter E. Camp, 910 Donaldson Building, Minneapolis.

New Prescription Blanks for Alcoholic Liquors.—A new physician's prescription blank, to assist in the enforcement of the prohibition laws, has been designed by Commissioner Haynes of the Treasury Department. The new forms are printed on specially sensitized, watermarked paper, from an engraved plate bearing a special watermarked seal with the word "Prohibition" in large letters. For still further protection, an ingenious machine manufactured to resemble a check protector will be used on each withdrawal permit from a warehouse. The new form of prescription blanks to be issued to physicians makes it incumbent on the physician to indicate the name and address of the druggist who is to fill the prescription. While these changes will cause a halt in the counterfeiting of withdrawal permits on distilleries for liquor and likewise on physicians' prescription blanks for intoxicants, yet an agitation has been started to make it a penitentiary offense to manufacture counterfeit or forged permits, physicians' prescription blanks or letterheads, envelops or any other stationery used in connection with the enforcement of the prohibition law.

Bill Proposes Hygiene Board Transfer to Department of Justice.—Transfer of the Interdepartmental Social Hygiene Board, an independent governmental bureau, to the Department of Justice is contemplated in a bill introduced in Congress by Representative Julius Kahn of California, chairman of the House Committee on Military Affairs. The proposed act enlarges the powers of the agents of the Department of Justice, including in their duties the investigation of commercialized vice conditions in the vicinity of army and naval stations and posts in the United States or insular possessions, or any place under the authority of the United States where armed forces, ex-soldiers and sailors may be located under the care and authority of the government. Introduction of the bill is largely due to agitation on the part of the League of Women Voters, who take the stand that the repression of prostitution and the elimination of venereal disease is vital to the health of the nation. An appropriation of $325,000 is included in the measure to cover the cost of the work by the Department of Justice.

Narcotic Drugs Act Passes Lower House.—The Miller-Jones narcotic bill passed the House of Representatives, May 4. This bill, which is an amendment to the import and export narcotic drugs act of 1909, as amended by the act of 1914, contemplates further restraint on the importation, exportation and in-transit shipments of narcotic drugs. All manufactures of coca leaves and opium, as well as of smoking opium are prohibited importation, but crude opium and coca leaves are admitted in such amounts as necessary for medical and legitimate uses. The Federal Narcotics Control Board, created by this bill, and comprising the Secretary of State, Secretary of the Treasury and the Secretary of Commerce, determine the amounts of the drugs necessary for legitimate purposes, and controls the granting of permits for exports, imports and in-transit shipments. Such narcotic drugs as may be exported will go only to those countries which are parties to the international opium treaty, and only to those countries when the board has proof that adequate control exists to insure the drugs being used for medicinal and legitimate purposes. Existing law makes it difficult to ship opium into this country except for legitimate uses, but there is no law to prevent shipping it across this country for transshipment to China or Japan for example. England recently enacted laws to control shipments from a foreign country through Canada or by Canadian railroads or British vessels, thus leaving our own ports open for in-transit shipments to the Orient. Thus our country is allowing transshipment of great quantities of commodities marked pharmaceutical in character. These commodities reach China and Japan, and thence about half of them are smuggled back to our own country to supply the army of underworld pedlers engaged in this illicit trade. It is said that smuggled goods that have once been exported from or through United States constitute the only source of supply of the underworld traffickers, and this the law which has just passed the House aims to destroy.

Annual Meeting of the National Tuberculosis Association.—The National Tuberculosis Association held its eighteenth annual meeting, May 4, 5 and 6, in Washington, D. C. The address of welcome was made by the Honorable Charles Evans Hughes, Secretary of State. Secretary Hughes said that those who have labored in the antituberculosis campaign have put the nation under a lasting obligation, and that through this campaign 100,000 lives would be saved in the present year. In his opening address, the president, Dr. J. A. Miller, made a special plea for the training of medical students and general practitioners in the cause, prevention and treatment of tuberculosis. He said that an urgent responsibility rests up physicians connected with medical colleges, who should recognize the importance of the special study of tuberculosis in their curriculums. Dr. Miller further said that voluntary organizations such as the National Tuberculosis Association should not attempt to dominate the field of disease prevention, as such work is the primary responsibility of the public health authorities, with whom it is their duty and privilege to work side by side. The managing director of the association, Dr. C. J. Hatfield, summarized the important developments of the year as follows: the cooperative arrangements of the association with six other national health organizations under the auspices of the National Health Council; continued assistance to the United States government in providing treatment for tuberculous ex-service men; a study of health hazards in industry; and the introduction of the modern health crusade into the curriculum of schools in fifteen states. Although the crusade is only 5 years old, 8,000,000 children are already enrolled. At a luncheon at the City Club, "The Modern Health Crusade at Home and Abroad" was discussed by the French ambassador, the Chinese minister, and the Czechoslovakian envoy extraordinary to the United States. About 100 papers were scheduled for the various sections of the association. Officers elected for the coming year were: president, Dr. Lawrence Brown, Saranac Lake, N. Y.; vice presidents, Dr. C. J. Hatfield, Philadelphia, Dr. J. W. Pettit, Ottawa, Ill.; secretary, Dr. G. M. Kober, Washington, D. C.; treasurer, Dr. H. V. Platt, New York City; executive committee, Drs. J. H. Peck, Des Moines, Iowa; D. R. Lyman, Wallingford, Conn.; C. C. Browning, Los Angeles; W. L. Dunn, Asheville, N. C.; A. M. Forster, Colorado Springs, Colo.; J. A. Kingsbury, New York City, and J. A. Miller, New York City. A reception to the delegates was held by President Harding at the White House, May 6.

LATIN AMERICA

Health Statistics.—The health department of the Municipality of Recife and the Rockefeller Foundation Commission in Rio de Janeiro state that the mortality of Recife during the year 1921 was 7,614 deaths, giving a coefficient of mortality for the municipality of 29.3 per thousand for the 260,000 population.

The Preston Hospital.—This hospital, which was recently opened, is operated by the United Fruit Company in Oriente Province, Cuba, and was built at a cost of $300,000. It has a capacity of 150 beds, which in an emergency can be increased to 250. The grounds contain an isolation hospital which will accommodate twenty persons, and a convalescent pavilion with a seventy-five bed capacity.

Pathologist Wanted in Panama.—Major Edgar Bocock, superintendent of the 500 bed Santo Tomas Hospital, Panama, the national government institution of the republic, states that the establishment is greatly in need of a capable pathologist to take charge of the laboratory. There is ample material for research work in all ordinary medical and surgical cases and tropical diseases.

Name of Street Changed to Honor Physician.—One of the streets that surround Finlay Park in Havana has recently had its name changed to Barnet Street, in honor of the memory of one of the leaders in organized hygiene and sanitation in Cuba, Dr. Enrique B. Barnet. He was chief of the public health service at one time and served in various capacities before, during and after the American occupation.

The Rijo Monument in Cuba.—The *Crónica Médica-Quirúrgica* brings an illustration of the imposing monument recently unveiled at Sancti Spiritus, a more than life size figure of Dr. Rudesindo García Rijo, assassinated in 1912. He was the leading figure in his district in all medical, organization and welfare movements of all kinds, and often for the state at large, and was the representative in various international congresses, etc.

Pasteur Celebration in Venezuela.—The National Academy of Medicine of Venezuela has decided to hold a celebration of Pasteur's centenary. A prize, consisting of a gold medal and 2,000 bolívares, will be granted to the author of the best work presented. A portrait of Pasteur will be placed in the assembly room of the academy. A special medal will also be engraved to commemorate the occasion. In addition, a public session will be held, Dec. 27, 1923. The expenses will be paid from a fund created by public subscriptions.

Research in Uncinaria.—An expedition from the department of medical zoology of the School of Hygiene and Public Health of Johns Hopkins University will go to Porto Rico this summer to investigate hookworm disease. The expenses of this expedition will be paid by the International Health Board of the Rockefeller Foundation. The party will include Mr. D. L. Augustine, Mr. N. R. Stoll and Prof. W. W. Cort, Ph.D., from Johns Hopkins University, Prof. William A. Riley, Ph.D., of the University of Minnesota, and Dr. and Mrs. G. C. Payne of the International Health Board. The expedition will be under the direction of Prof. W. W. Cort. The party will leave the United States in June and will return about October 1. The headquarters in Porto Rico will be Utuado, where a small hospital has been furnished by the Porto Rican Department of Sanitation for laboratory and living quarters. The expedition will work in cooperation with Dr. R. B. Hill, director of Porto Rico for the International Health Board, and Dr. William F. Lippitt, commissioner of health of Porto Rico. The work of the expedition will include a continuation of the researches on the life of hookworm eggs and larvae in the soil which were begun in Trinidad during the summer of 1921. Field studies will also be made of the sources of human infestation under the conditions existent in Porto Rico.

Personal.—Dr. J. M. Fiallos of Tegucigalpa, Honduras, has arrived in this country to take a graduate course.——Dr. I. Barraquer, in charge of the eye department of the Clinical Hospital of Barcelona, and Dr. F. Poyales, official Spanish delegate to the International Congress of Ophthalmology, held recently in Washington, have returned home after delivering several lectures in New York.——The recent ophthalmologic congress in Washington was attended by Drs. F. M. Fernández, editor of the *Revista Cubana de Oftalmología,* C. E. Finlay, director of public health of Cuba, and J. M. Penichet, as representatives of the Cuban government. Dr. Fernández was appointed secretary of the general committee which will make arrangements for the next congress at London.——A banquet was tendered, March 30, to Prof. A. Buzzo to celebrate his appointment to the chair of toxicology in the University of Buenos Aires.——The *Revista de Medicina y Cirugía* of Havana states that Dr. F. Leza has been appointed assistant professor of surgery, and Dr. Martinez Cañas to another assistant post in the faculty.——Dr. Barbosa Vianna has obtained by competitive examination the chair of anatomy at the University of Rio de Janeiro.——Dr. A. Lindenberg is the president of the newly organized Sociedade de Biologia at S. Paulo, Brazil.——Dr. R. J. Fosalba, who was long minister from Uruguay in Cuba, is now minister to Peru. The National Academy of Medicine at Lima recently elected him to membership. He has long been a member of the Havana Academy, with the title "académico de mérito." The *Crónica Médico-Quirúrgica* remarks that in Cuba Dr. Fosalba was considered almost one of the national luminaries, as is also the case with Dr. R. Gutiérrez Lee, the minister from Colombia, who has practiced medicine in Havana now for more than forty years.

FOREIGN

Investigation of Milk Supply.—Prof. John Robertson, medical officer of health for Birmingham, England, has sailed with a party of experts to investigate methods of milk production and distribution in the United States.

The Two Hundred Thousandth Microscope.—The "jubilee instrument," bearing the number 200,000, recently turned out by a German firm, was presented by the firm to Prof. M. Heidenhain, director of the anatomy institute at the University of Tübingen.

Centennial of Thiersch.—The name of Thiersch is connected especially with his skin flaps, but he was one of the leading surgeons of the nineteenth century. The centennial of his birth, April 20, was celebrated by the publication of his biography by his son.

The Galligo Prize.—*Pediatria* brings the conditions governing the triennial Dr. I. Galligo prize of 500 liras which the Accademia Medico-fisico of Florence is to award Jan. 31, 1923, for the best work presented anonymously in competition on any subject bearing on syphilis or children's diseases. The article must be in Italian.

Health Insurance in Germany.—The *Medizinische Klinik* quotes some recent statistics to the effect that there were 9,000 *krankenkassen* in Germany in 1919, and that their total expenditures were 1,125 thousand million marks. Of this amount, only 182 millions was paid to physicians, and 147 millions for drugs, trusses, spectacles, etc.

Price of Bread as Base for Physician's Fees.—The *Münchener medizinische Wochenschrift* states that the physicians at Leisnig have posted in their offices a notice to the effect that the prewar fees are to be multiplied by the figure that represents the present price of a loaf of bread, divided by the prewar price of the same, namely, 15 pfennige.

The Seven Hundredth Anniversary of the Founding of the University of Padua.—This week marks the septicentennial of this Italian university, and festivities for three days are planned, closing with further festivities at Venice. A souvenir medal has been struck off which can be obtained in bronze, silver or gold. A scientific exhibit forms part of the program.

German Medical Society for Sexual Ethics.—Our German exchanges mention that the Deutsche Aerztebund für Sexualethik now has 900 members, and has begun the publication of a periodical entitled *Ethik, Pädagogik und Hygiene des Geschlechtlebens* (Sexual Life). Subscription for nonmembers is 25 marks, to be sent to the Physiologisches Institut of the University of Halle.

Jansen Returns His Prize.—The Journal mentioned recently that the Umberto I prize was recently awarded by the Rizzoli Institute at Milan to Dr. Murk Jansen of Holland for his works on orthopedics and his propaganda for orthopedics in Holland. The prize had been previously awarded to Vulpius, Schulthess and Vanghetti. Jansen delivered an address on receiving the prize and then presented the sum, 3,500 liras, to the Rizzoli Institute to be used to help poor patients requiring orthopedic care.

British Committee at Pasteur Celebration.—At the time of the celebration of the centennial of Pasteur's birth, in Strasbourg, a congress of hygiene and bacteriology will be held for discussion of questions relating to disease. In order to show the sympathy of Great Britain with the projects of the French committee, a British committee composed of the following members has been formed: Sir Charles Sherrington, chairman, A. Chaston, H. E. Field, Prof. Percy R. Frankland, Sir John M'Fadyean, Prof. C. J. Martin, Sir W. J. Pope, Sir James Walker and Sir Almroth Wright.

The Italian Eugenics Society.—The Società Italiana di Genetica ed Eugenica has its headquarters at the well equipped Instituto Italiano di Igiene, Previdenza ed Asistenza Sociale, founded by Prof. E. Levi. The proceedings are to appear in the review published by the institute, *Difesa Sociale.* The members of the Eugenics Society can obtain this review at reduced rates, 15 liras instead of the usual price, 25 liras. The dues of the society are 5 liras. The society is appealing for more members and for scientific contributions on topics connected with eugenics. The appeal is signed by Professors Loria, Gini and Artom, Via Condotti 33, Rome.

Medical Literature in Russia.—The American Relief Administration announces that ten of the leading medical colleges of Russia have received a large shipment of medical journals furnished by the medical division of the administration and the Rockefeller Institute. Further shipments are reaching Russia and will be distributed as rapidly as possible. Russian physicians requested that some medical literature be sent to them, as they have been cut off from all medical progress for the last five years. During March, eighty-three hospitals and public institutions in Petrograd were supplied by the American Relief Administration with medicines and other necessities.

Personal.—Professor Casagrandi was recently given an ovation on his resuming charge of the Hygiene Institute at ie University of Padua which had been taken for military urposes during the war.——Prof. A. Regnoli of Rome ecently ordered a collyrium of 20 per cent. silver nitrate for se in prevention of ophthalmia neonatorum, and four chil- ren are blind or nearly blind in consequence. He has long een instructor in obstetrics and gynecology at the University f Rome.

The New Science of Metapsychics.—Prof. Charles Richet f Paris, of anaphylaxis fame and noted for other scientific chievements, recipient of the Nobel prize in 1913, has turned o the study of occult phenomena. In his recent work, "Traité e Métapsychique," he discusses subjective metapsychics as chapter of psychology, saying that there are certainly other outes to our consciousness than the five senses. Some per- ons are more accessible to them than others. This special aculty or cryptesthesia, as he calls it, explains certain henomena which we now are inclined to regard as super- atural. Cryptesthesia may be of the same order as the oming instinct which guides birds in their migrations.

Deaths in Other Countries

Dr. **Francisco Soca,** professor of clinical medicine at the 'niversity of Montevideo, senator, member of the cabinet nd of the board of the Asistencia Pública, foreign associate f the Academy of Medicine at Paris, noted especially for is skill in diagnosis, aged 64.——Dr. **E. Bovone,** at Bulwayo, on an official mission to the Congo from the Belgian overnment.——The *Medicina Ibera* reports the deaths of Dr. . **Acero García** of Madrid and also of Dr. **L. Fatas,** senator 'om Huesca, who succumbed to typhus contracted from a atient.——Dr. **L. Purgotti,** chief of the public health service t Perugia, Italy, for thirty years, aged 63.——Dr. **M. Urosa Sánchez** of Madrid.——Dr. **E. Berthold,** formerly professor f otology at the University of Königsberg, aged 85.——Dr. . **Wieting,** chief of the Hamburg marine hospital. He was alled to Turkey in 1902 to reorganize medical teaching and 'as at the head of the Gülhane Hospital at Constantinople ntil his return to Germany in 1915. He published a number f works on surgery.——Dr. **A. Merzweiler** of Freiburg, chief f the German Hospital at Tiflis, has succumbed to typhus, ged 43.

CORRECTIONS

Physiologic and Therapeutic Action of Light.—In the edi- orial on this subject which appeared in THE JOURNAL last 'eek, the wave lengths given in microns should have been iicro-microns.

Applicants Received Passing Grades.—In the report of the xamination held in Missouri in October, 1921, through a lerical error the final grades of six applicants were given as ss than 75 per cent. A report received later states that all iese applicants received at least the passing grade of 75 er cent.

Government Services

Appropriation Bill Awaits Action on New Pay Measure

Annual appropriation bills of the Army and Navy will be elayed by both houses of Congress until action is taken on ie McKenzie-Wadsworth pay bill for officers of the Army, 'avy and U. S. Public Health Service. The new schedules f pay in this measure, it is claimed by Senate and House aders, will result in a considerable saving to both the Army nd the Navy, and appropriation bills cannot be passed until is known whether the commissioned personnel are to be aid on a new schedule or on the pay basis of 1908. The ar time pay schedule expires in July, 1922.

Board of Maternity and Infancy Hygiene Meets

At the first meeting of the Board of Maternity and Infancy Iygiene, held as a result of the recent act passed by Con- ress, Miss Grace Abbott, chief of the children's bureau of ie Department of Labor, was chosen as chairman. The ther members of the board are Surg.-Gen. Hugh S. Cum- ing, U. S. Public Health Service, and John J. Tigert, U. S. ommissioner of education. Forty-one states, it was nnounced, have accepted the terms of the Maternity and nfancy law and agreed to duplicate the appropriations of ie federal government for the protection of maternity and ıfancy. For the fiscal year ending June 30, 1922, $490,000 was appropriated by Congress, and for the full fiscal year ending June 30, 1922, $1,240,000, which will be distributed by the board among the states of Alabama, Arizona, Arkansas, Connecticut, Delaware, Florida, Georgia, Idaho, Indiana, Kansas, Kentucky, Mississippi, Missouri, Montana, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Virginia and Wyoming. Information was received by the board that the attorney general of the state of Massachusetts had stated to the legislature of that state that in his opinion the Sheppard-Towner act was unconstitutional, inasmuch as Congress exceeded its authority in the legislation by assuming police powers that are reserved exclusively to the states. A test will probably be made by the state of Massachusetts in the Supreme Court of the United States.

Distribution of Funds for Government Hospitals

A bill providing for the construction of twelve government hospitals at a cost of $17,000,000 has been introduced and favorably reported to the House of Representatives by Chairman Madden of Illinois, of the House Appropriations Committee. The measure makes a direct appropriation of $12,000,000 to be used at once, with a $5,000,000 additional amount to be used later, at the discretion of the director of the U. S. Veterans' Bureau. The facilities to be acquired as proposed by the bill are as follows:

District No. 1.—New England area: neuropsychiatric cases, 500 beds, $1,500,000.

District No. 2.—New York, New Jersey and Connecticut: tuberculosis cases, 500 beds; general cases, 150 beds; total 650 beds. $2,100,000.

District No. 5.—North Carolina, South Carolina, Georgia, Florida, Tennessee: general cases, 200 beds, $600,000.

District No. 6.—Louisiana, Alabama and Mississippi: neuropsychiatric, 350 beds, $1,050,000.

District No. 7.—Ohio, Indiana and Kentucky: neuropsychiatric cases, 500 beds, $1,500,000.

District No. 8.—Illinois, Michigan and Wisconsin: neuropsychiatric cases, 1,000 beds, $3,000,000.

District No. 9.—Missouri, Kansas, Iowa and Nebraska: neuropsychiatric cases, 500 beds, $1,500,000.

District No. 10.—Minnesota, North Dakota, South Dakota and Montana: neuropsychiatric cases, 500 beds, $1,500,000.

District No. 12.—California, Arizona and Nevada: tuberculosis cases, 500 beds, $1,500,000.

District No. 13.—Washington, Idaho and Oregon: neuropsychiatric cases, 250 beds, $750,000.

District No. 14.—Oklahoma, Texas and Arkansas: neuropsychiatric cases, 200 beds, $600,000.

No provision was made for additional hospital facilities for the states of Pennsylvania, Delaware, New Mexico, Colorado, Utah and Wyoming, the facilities for the care and treatment of disabled ex-service men being deemed sufficient in these localities. Plans are under way by the Committee on Appropriations to pass the bill through the House of Representatives at an early date.

Award of Distinguished Service Medals

Distinguished service medals have been conferred on the following officers, who served in the medical corps of the Army during the World War:

Col. Donald Macrae.
Col. Louis B. Wilson.
Col. Raymond Turck.
Lieut.-Col. George de Tarnowsky.
Maj. Elliott C. Cutler.
Maj. William F. Vervi.

All of these officers were in the reserve corps of the Army during the war and retired after their discharge to private practice.

Special Unit at Chicago Office

A special unit has been established at the Chicago office of the U. S. Veterans' Bureau, with a consultant and an assistant to handle cases pertaining to public health, which not only includes physicians and dentists, but also students desiring to enter colleges of medicine, dentistry or pharmacy, hospital nurses, trainers desiring courses in roentgen-ray work, laboratory technicians, those desiring special courses in chemistry, biology or pathology, and similar branches including also osteopathy, optometry and physiotherapy. The consultant will select and arrange special courses in the various clinics and hospitals adapted for the individual trainee. A special card index has been instituted giving an outline of the course selected for each trainee, the progress made and all other facts bearing on the case.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 17, 1922.

The Etiology of Miners' Nystagmus

Some years ago, Dr. Lister Llewellyn, a physician of great experience in miners' diseases, propounded the view that defective lighting was the cause of miners' nystagmus, making a point that, in open workings, it did not occur. A committee consisting of Professor Haldane, Professor Collis, Drs. Llewellyn and Rivers, and Mr. Pooley was appointed by the medical research council to investigate the subject. The council has now presented a report of great importance, with these unanimous conclusions: 1. The essential factor in the production of miners' nystagmus is deficient illumination. Other factors, such as position during work, accidents, alcoholism, infections, malnutrition, hereditary predisposition and errors of refraction, are of secondary importance. 2. The deficient illumination is due to the illuminating power of the safety lamps, to the distance at which these lamps have to be placed from the objects at which the miner has to look, and to the great absorption of light by the coal. In addition, coal dust or dirt, obscuring the lamp glasses, the choking of the wire gauze chimneys, and moisture or low oxygen percentages in mine air all reduce the light given by oil lamps, while lack of attention has a similar effect on electric lamps. 3. Workers at the coal surface are more affected than other underground workers. This appears to be due to the unrelieved blackness of the coal, and the greater need for accurate vision. 4. Distinct signs of nystagmus are present in a large proportion of coal miners, although in only a small proportion do the symptoms ever become so severe as to cause temporary incapacity.

The committee recommends that, since incapacity due to nystagmus is rare among coal miners working with open lights, everything should be done to make the standard of illumination of the objects looked at equal to that of an open light pit. This can be effected either by greatly increasing (to about two or three candles) the illuminating power of safety lamps, or by the employment of an electric lamp, to be fixed on the miner's head or belt, or in any other convenient position, so that the light is automatically brought nearer the working area and does not impair clear vision by shining directly into the eyes. At parts of the pit other than the coal face, the visibility of objects can be greatly increased by whitewashing, as well as by the stone dusting now obligatory for the prevention of explosions. The committee believes that, by these measures, nystagmus of a severity sufficient to cause disablement may be entirely prevented. During its investigations the committee noted that among the miners there is a prevailing belief that nystagmus causes permanent damage to, or even total loss of, sight if underground work is continued. This belief, held to be entirely erroneous, leads, it is said, to the development of psychoneurotic symptoms.

Financial Stress in the Consulting World

The press is devoting columns day by day to what it terms "the Harley Street Crisis." Since the war ended, consultants have had to increase the fee for the first consultation to from $10 to $15, and for the subsequent ones to from $5 to $10. With this increase and a diminished capacity to pay, the natural result has been that they have seen a large portion of their clients disappear. But a downward movement in the cost of living has set in, though it has not affected many items such as rent, rates and taxes. The press, therefore, comes forward with the suggestion that the consultants reduce their fees to the old level, and thus increase their work and even their earnings. But, as the correspondence in the press shows, the problem is a difficult one. The rent of a consulting room (office) in Harley Street, including service, is now from $1,000 to $2,000 a year. A well known surgeon, replying to the charge of too high fees, points out, in a letter to the *Times,* that a hospital surgeon often works in London from 11 a. m. to 5 p. m. daily, for no direct financial reward. His income has to be made during the hours which many business men devote to recreation. His expenses are high: today it costs a married surgeon with a small family $20,000 a year to live in Harley Street. His fees, therefore, have to be correspondingly high. In spite of this, every hospital surgeon is willing to accept a reduced fee if he knows that the patient can afford but little. An operation is often performed at one third or one fourth of the full fee. But it frequently happens that, after pleading poverty, the patients pay for every luxury in the nursing home. Wealthy men will pay $10,000 for a motor car, and begrudge $750 for an operation that has saved life. Another trouble of the hospital surgeon is that a number of men yearly obtain the degree of F.R.C.S. after coaching for some months. They then, without hospital experience, set up as consulting surgeons, and the public, often unable to see the distinction, allows them to practice operations they have only seen performed. For many operations, their skill is sufficient; but if the case should present some unusual feature in diagnosis or treatment, then wide experience alone will make the difference between cure and disaster. After the war, a number of young men, on the strength of operative experience in the field, started practice as surgeons in the Harley Street neighborhood; but the present stress has driven them out, and they have had to return to general practice in the suburbs or elsewhere.

The Labor Party and the Hospitals

In a previous letter (The Journal, April 15, 1922, p. 1138), the proposals brought forward by the British Medical Association to meet the changed conditions of the voluntary hospitals were set forth. The Labor Party has also published a program in the form of a pamphlet, entitled "The Labor Movement and the Hospital Crisis." It begins with a general criticism of the present system. There is no organized cooperation between the hospitals supported by voluntary subscriptions, or between them and the various hospitals under public authorities. Arrangements should be made by which general practitioners can remain in close touch with their patients under hospital treatment or, still better, take a share in their treatment. "An appointment to a hospital staff carries a certain monetary value, and so the number of appointments is jealously guarded, with the result that all big hospitals are understaffed." The nurses are described as "underpaid, and consequently servile to the physicians." They faithfully follow medical instructions, but any needs outside these are ignored. More consideration for the patient as a person is needed.

These and other complaints are only exaggerations, and whatever truth they express is due to the fact that we are living in an imperfect world inhabited by imperfect persons—a fact which socialism, in bringing forward its visionary schemes, fails to take into account. It is strange to hear a party bent on reducing every one to a dead level complaining of want of consideration for the individual. A similar inconsistency occurs when it complains that workmen's subscriptions to a voluntary hospital are a "compulsory levy," for "individuals cannot hold back if the majority are willing to subscribe." But this is exactly the mechanism by which the party works. Again, "the evils and odium" of he present Poor Law institutions are referred to, as well as their inferiority to voluntary hospitals. Now state control and support constitute the important difference between the ormer and the latter. Yet the Labor Party puts forward tate control, complete or partial, of hospitals as the great eform, its program being that:

> All hospitals, special and general, should be so organized under one uthority as to form the foundation on which a complete hospital system or the nation can be built. Treatment centers should be established in outlying districts and cottage hospitals in smaller towns. Each public health area should have one or more "county" hospitals. The "national" hospitals would be in London and other university centers. Cooperation would be established between the units and also the medical staffs and general practitioners, participation of the latter to be an essential feature f the hospital scheme. Health authorities should have sufficient beds under their own control to deal with all patients for whom they have lready undertaken the responsibility, e. g., patients suffering from uberculosis or venereal disease, schoolchildren, mothers and infants from he maternity and child welfare centers, and adults coming under the national health insurance scheme. Legislation would be introduced for he transference of the Poor Law infirmaries from the guardians to the ocal health authorities.
>
> Voluntary hospitals should have the option of being taken over by he health authorities entirely, of remaining on a voluntary basis entirely, or of receiving grants from public funds, conditional on efficiency and he representation of the local health authority on the boards of management. Cooperation between those remaining entirely on a voluntary basis and the public hospitals should be secured. Pressure on hospital bed capacity in the cities and towns should be relieved by the acquiring f convalescent homes in the country. Free dental clinics must be connected with all hospitals.

PARIS

(From Our Regular Correspondent)

April 21, 1922.

The Distribution of Physicians in France

For a long time, the irregularity of the distribution of physicians in France has been a cause of surprise. The *Semaine médicale* used to publish maps showing the number of physicians in each department. The irregular distribution s due to the fact that, in many cases, watering or health esorts, for example, the Riviera, Nice, Cannes and Mentone, re overcrowded with physicians during the season; while in he mountainous region there is such a dearth of physicians hat the department authorities have been obliged to subsidize about fifty physicians in certain districts. This irregularity in the distribution of physicians is absolute, however, nd not relative. If Nice, for instance, has one physician for 30 inhabitants, this is explained by the fact that it is an mportant health resort, and, consequently, it attracts a considerable floating population. Medical centers also attract a arger number of physicians than other cities. Nancy, having faculty of medicine, has one physician for 830 inhabitants, while Toulon, with the same population, has one physician or 1,250 inhabitants. Montpellier has one physician for 530 nhabitants, and Limoges one for 1,000 inhabitants. These wo cities have the same population, but Montpellier is the eat of a faculty of medicine.

In large cities, the distribution of physicians in proportion o the population is far from being uniform. Paris has one hysician for 700 inhabitants, while Marseilles and Lyons, with more than 450,000 inhabitants each, have one physician or approximately 850 inhabitants. A greater difference still xists between Bordeaux and Lille. For a population of more han 200,000, the former has one physician for 830 inhabitants, nd the latter one physician for 1,000 inhabitants. Dr. J. Noir explains this difference by the fact that a city has fewer hysicians when it has an industrial character. For instance, Lille, with a faculty of medicine, has fewer physicians in roportion to its population than Bordeaux, which has also a aculty, because Lille is more of an industrial center than Bordeaux. The same conditions apply to Toulouse and Saint-Etienne, as Saint-Etienne, which is an industrial center, has ne physician for 1,600 inhabitants, while Toulouse, with Montpellier, holding in France the record for the number of hysicians, has one physician for 530 inhabitants; but Toulouse is also the seat of a faculty of medicine.

Dr. Noir makes an interesting statement concerning seaports. Navy ports especially do not seem to attract physicians, probably because their population is similar to that of industrial towns, and navy physicians give treatment to the civilian population while they remain in port. Toulon and Brest have one physician for 1,250 inhabitants; Lorient, one for 1,300; Cherbourg, one for 1,600, and Rochefort, one for 1,800. As regards commercial seaports, we find that Havre has one physician for more than 1,500 inhabitants, and Dunkirk and Cette one for 1,600 inhabitants. But, in this case the difference is not so important, as many towns of from 20,000 to 30,000 population have one physician for 1,200 or 1,300 inhabitants. As regards departments, excepting those with large cities and watering resorts, the number of physicians in proportion to the population is not always in proportion to the wealth of the region. Thus, we note that the department of Eure-et-Loir, which is the twenty-sixth department in the order of national wealth, has about one physician for 2,500 inhabitants, while Calvados, the sixteenth department, has one physician for 2,260. The Manche, the thirteenth department in the order of wealth, has one physician for 2,600 inhabitants, and the Gers, which is the fifty-second, has one physician for 1,370; while the Landes, which is eighty-third, has one physician for 1,800 inhabitants. In mountainous and poor districts, where population is scattered and means of communication are difficult, there are few physicians. In the department of Creuse, for instance, there is one physician for 2,900 inhabitants; in the Hautes-Alpes, one for 3,300; and, in the Haute-Loire, one physician for 4,000 inhabitants.

BELGIUM

(From Our Regular Correspondent)

LIÉGE, March 8, 1922.

The Law on Alcohol

Since the armistice, a law has been in effect in Belgium prohibiting the retailing of liquors. The minimal quantity that can be sold is 2 liters (quarts). As this law has been in effect three years, it was interesting to learn the results of its application. The Academy of Medicine made a report giving the law its full approval. It avers, notwithstanding the lack of complete data, that the law on alcohol has given favorable results as regards the repression of alcoholism. It holds that the law should be enforced more strictly, and that certain restrictions should be added to increase its efficiency. It attacks vigorously the idea of reestablishing, under the pretext of commercial liberty, the retail of spirituous beverages.

The National Federation of University Women

The National Federation of University Women has just been founded in Brussels. Its aim is to stimulate closer relations among women who have studied in universities, to safeguard their interests, to help and encourage the new students in the career they have chosen, and, finally, to form a national group, which will be affiliated later with the International Federation of University Women.

Anglo-Belgian Medical Agreement

The Academy of Medicine, requested by the minister of the interior to give its opinion on a proposition made by the British government in regard to an agreement between Belgium and England to allow reciprocal medical practice, has appointed a committee to make a report on the subject, composed of MM. Firket, Cousot, Putzeys, Fredericq, Bordet and Nolf.

Professor Arthus' Conference

During his recent sojourn in Belgium, Professor Arthus of Lausanne gave two lectures, in Brussels and Liége, at which leading physicians were present. His first lecture was, of course, devoted to anaphylaxis, as it is he who developed Richet's discovery. He gave the history of the progress made in our knowledge of humoral phenomena; and it was interesting to note the different stages it has gone through. Called on to prepare precipitant serums and having at his disposal only one species of experimental animal, the rabbit, and one kind of antigen, horse serum, Arthus observed what grave general and local disturbances repeated subcutaneous injections of the serum produced in the animal. Intravenous injections entailed almost immediate death. The syndrome was similar to the one observed by Richet: diminished arterial pressure, modification of coagulability of the blood and of the amount of leukocytes, and respiratory and intestinal disturbances. But as our knowledge increases, new problems are facing us, and Arthus concluded by saying that the purpose of his two lectures was to present the aims of the experimental method which the problems of anaphylaxis have followed.

Military Burial Places in Belgium

A bureau of information has been organized by the communal authorities of Ledeghem to answer all inquiries concerning the condition of soldiers' graves in Belgium, whatever may have been the nationality of the men. The bureau will send photographs of graves if asked to do so. Its field comprises all Belgium, and it will also give information concerning graves in France, without, however, guaranteeing as prompt an answer as to inquiries concerning those in Belgium.

BERLIN

(From Our Regular Correspondent)

April 15, 1922.

Decrease in Infant Mortality

The census bureau of the empire published recently in the journal *Wirtschaft und Statistik* a comparison of the statistics on infant mortality in the various German government districts for the periods 1904-1906, 1909-1911 and 1919-1920, from which it appeared that conditions, in general, have improved considerably. While it is true that the mortality in the districts that formerly presented the fewest deaths remained essentially the same, the districts that previously had the highest mortality rates show, as a rule, a remarkable decrease. The census reports of the various German cities, as they appear in the Vierteljahreshefte deutscher Städte, published by the union of German statisticians, present a surprisingly good showing. In the large cities of Germany, during the year 1921, 36,823 infants died during the first year of life, which amounts to 122 for every thousand born living during the same year. This mortality rate constitutes the lowest figure ever reached here, and is all the more surprising in view of the exceedingly hot summer weather, which gave reason to fear a summer peak of infant mortality.

Agreements Between Physicians and Health Insurance Societies

It is a matter of common knowledge that since the introduction of social legislation, that is, since the central government has undertaken to provide for workmen protection and compensation in disease, accident and disability, there have been frequent disagreements between health insurance societies and physicians on the score of medical fees. At the outset, the physicians of the health insurance societies received a monthly or annual per capita fee, the number of physicians connected with a health insurance society being very small and their selection depending on the action of the executive committee of the society. The continual and increasing misunderstandings that grew out of this relationship forced the physicians to seek some means whereby they could procure relief from their absolute dependence on the executive committees of the societies. Under the leadership of a Leipzig physician, the physicians combined and succeeded in gradually bringing into recognition the principle of free choice of physician in the health insurance societies, by which arrangement all physicians who agree to comply with certain conditions (especially as regards a certain control of their activities) are permitted to treat members of the health insurance societies. However, this change of administrative method did not put an end to all difficulties, for differences in regard to the size of the medical fees were continually springing up. The physicians could not be other than dissatisfied with the small fees they were receiving for individual treatment, and the societies refused to advance the schedule rates beyond a certain point, declaring that with the means at their disposal they were unable to grant higher fees. As a consequence of these differences, repeated clashes have resulted, which have led to temporary suspensions of the agreements between the physicians and the societies. On numerous occasions, the intervention of the government has been necessary in order to assure for the health insurance societies the continued services of the physicians. The old conflict broke forth afresh, a few weeks ago. As a consequence of the increased cost of living, it was inevitable that the conceptions of the two parties concerned, with respect to medical fees, would no longer accord. In order to ward off a threatened rupture of relations, the minister of labor of the empire fixed a date in March for a meeting of the representatives of the various medical organizations and of the executive committees of the health insurance societies, with a view to reaching a final understanding in regard to the questions at issue. Fortunately, an agreement was effected in regard to compensation for the performance of individual acts, it being established that for every office consultation the minimal fee of the new Prussian medical tariff, 10 marks, and that for a domiciliary visit the minimal fee of 20 marks shall be paid. For special service special fees may be charged, as set forth in the new medical tariff mentioned above. Provision is made for an automatic increase in the fees to correspond to an eventual increase in the cost of living. Unfortunately, no modifying agreement was reached with regard to the per capita fee which is still in vogue in a large number of societies, including those of Berlin with a membership of 1,500,000. It is to be hoped that before long, in the interest not only of the physicians but also of the patients, these societies also will succeed in establishing a schedule by which physicians will be recompensed in accordance with the individual services performed.

Marriages

Eveleth Wilson Bridgeman to Miss Mary Cushing Whitridge Williams, both of Baltimore, April 29.

Hugh O'Donnell, Omaha, to Miss Helen Foster, Plattsmouth, at Papillion, Neb., February 21.

Clarence A. Jacobson, Chicago, to Miss Vida Wheeler of Enid, Okla., at Kansas City, April 29.

Emile C. Underberg, Stanton, Neb., to Miss Bertha Hopper, at Council Bluffs, March 25.

James M. Robb, Detroit, to Miss Virginia R. Yerger of Memphis, Tenn., April 19.

Charles R. Gowen, Denver, to Miss Anita E. Raab of Belleville, Ill., April 15.

Willis Alonzo Dewey, Ann Arbor, Mich., to Mrs. Camille Roe of Boston, April 3.

Edward Tanner to Mrs. Mary Berry, both of Battle Creek, Neb., in March.

Deaths

Joseph Nathaniel McCormack ⊕ Louisville, Ky., died at his home of cerebral hemorrhage, May 4, aged 75. Dr. McCormack was born in Nelson County, Kentucky, Nov. 9, 847, the son of Thomas McCormack, merchant and farmer, and Elizabeth Brown McCormack; he was the fifth of sixteen children. Leaving school at 12 he continued his studies alone while living on a farm, becoming proficient in Latin and mathematics. At 20 he entered Miami Medical College, Cincinnati, graduating in 1870, at 23, as valedictorian of his class. In 1873 he was granted the degree of M.D. by the medical department of the University of Louisville, and two years later removed to Bowling Green, Ky., where he resided until 1910. He married Corinne Crenshaw of Glasgow, Ky., in 1871. During an epidemic of yellow fever in 1878 Dr. McCormack aided in stamping out the disease and when a board of health was created in 1879 to combat cholera and yellow fever, he was appointed a member by Governor Blackburn. In 1883 he became executive secretary of the board, serving continuously until 1913. He was elected president of the Kentucky State Medical Association in 1881. Beginning with the passage of an act for the prevenion of disease in live stock in 1885, Dr. McCormack was instrumental in securing important medical legislation in his state; a medical practice law in 1888, licensure laws in 1898 and in 1904; vital statistics law, 1908, and a bill combining health agencies in 1918. The life of Dr. McCormack is in fact the public health history of his native state. Moreover, it is said that he had not missed a session of the state legislature for forty-two years and that since 1888 he had written all the laws of the state dealing with public health, medical education and the practice of medicine. In 1912 he served one term as a member of the legislature.

Joseph N. McCormack, M.D., 1847-1922.

However, the services of Dr. McCormack in public health work were not limited to his native state. He aided in organizing the Conference of State and Provincial Health Officers; he was a member of he International Quarantine Commission in 1892; of the National Conference of State Boards of Health from 1886 to 894 and of the Confederation of State Licensing and Examning Boards. In 1888 he received official thanks of President Cleveland for his work in the cholera epidemic.

In the American Medical Association, Dr. McCormack erved in many important capacities. In 1900, at the annual session of the Association in Atlantic City, N. J., a committee of three was appointed, known as the Committee on Reorganzation, to study the then unsatisfactory conditions and to ubmit recommendations on the subject. On this committee, of which he was chairman, Dr. McCormack did most effective work. The report which was presented at the next session of he Association at St. Paul in 1901, was adopted unanimously. The committee was continued and, from 1901 to 1910, Dr. McCormack as chairman devoted much time and energy to establishing the form of organization adopted. In this work he traveled widely throughout the country, aiding in building up the constituent state and territorial associations. When the Council on Health and Public Instruction was organized in 1910 Dr. McCormack became a member as chairman of the committee on organization, and continued in this work until 1913. He was a member of the House of Delegates from 1902 to 1907, inclusive, and again in 1912.

Dr. McCormack's enthusiasm in the work to which he devoted his life was unabated to the end. He was actively engaged in his office on May 2. Soon after arising on May 3 he complained of dizziness and returned to bed. He fell asleep and gradually lapsed into coma from which he could not be roused. His death came May 4 at 7 a. m. The thousands of telegrams of condolence and eulogy received following announcement of his death bear witness to the esteem and honor in which he was held by the medical profession.

Many physicians live lives of usefulness in their communities, practicing their profession conscientiously and loved by all whom they serve. They find time amid the pressing cares of practice to consider the broader problems of medicine, of disease prevention, of health education and of the professional and social status of the medical profession. A few physicians, however, not only do all this for their own community, but also carry their work into the wider field of state and nation. Such a man was Joseph N. McCormack —a type, in his early days, of the early practitioner, but all his professional life a citizen, not alone of Kentucky, but of the whole country. He was a man of dignified and powerful personality, gifted in influencing for good those with whom he came in contact. In the history of the medical profession of America Joseph N. McCormack will have a permanent place and the medical profession of the whole country mourns his death.

Harry Oscar White ⊕ Los Angeles; Harvey Medical College, Chicago, 1896; Medical Department University of Illinois, Chicago, 1904; formerly professor of anatomy, embryology, and histology, College of Physicians and Surgeons, Los Angeles, Calif.; member of the American Association of Anatomists; died, April 23, aged 47, at the Florence Ward Sanitarium, San Francisco, from chronic nephritis.

George Alexander Fleming ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1884; formerly professor of ophthalmology and otology, Women's Medical College, Baltimore, and demonstrator of ophthalmology at the University of Maryland School of Medicine, Baltimore; surgeon at the Presbyterian Eye, Ear and Throat Charity Hospital; died, April 18, aged 59, from heart disease.

McDowell Botts, Mexico, Mo.; Missouri Medical College, St. Louis, 1899; member of the Missouri State Medical Association; served in the M. C., U. S. Army, with the rank of captain during the World War; died, April 24, aged 46, at Lake City, Fla., from carcinoma of the arm, resulting from burns received while experimenting with the roentgen ray.

Joseph Melville Finney, El Reno, Okla.; Fort Worth School of Medicine, Medical Department of Texas Christian University, Forth Worth, Tex., 1900; formerly junior professor at Epworth College of Medicine, Oklahoma City, and professor of anatomy and surgery at Southwest Postgraduate Medical College, Oklahoma City; died, April 26, aged 53.

William Robert D. Blackwood, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1862; served as Army surgeon during the Civil, Franco-Prussian and Spanish-American wars, for which service he was awarded the Medal of Honor by Congress, and was retired with the rank of Brigadier General; died, April 26, aged 83.

Perry Schoonmaker ⊕ New York City; University of Michigan Medical School, Ann Arbor, 1880; formerly assistant otologist at the Postgraduate Hospital and aural surgeon to the outpatient department of the Harlem Hospital; died, April 28, aged 67, from cerebral hemorrhage.

⊕ Indicates "Fellow" of the American Medical Association.

Claude A. Power, Pulaska, Ia.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1908; member of the Iowa State Medical Society; died, April 22, at the W. C. Graham Protestant Hospital, aged 41, from heart disease.

George Aitkin Stevenson, Rising Sun, Ind.; Rush Medical College, Chicago, 1865; member of the Indiana State Medical Association; county and city health officer; died suddenly, March 30, aged 84, from acute indigestion.

Charles William Miller ⊕ Peoria, Ill.; University of Michigan Medical School, Ann Arbor, 1908; formerly county physician; died, April 22, aged 41, at the Saint Francis Hospital, following an operation.

William Thomas Wallace, Kitchener, Ont.; University of Toronto Faculty of Medicine, Toronto, 1902; Fellow of the Academy of Medicine of Toronto; was found dead in bed, February 26, aged 44.

Edward Hudson Knight, New York City; Long Island College Hospital, Brooklyn, 1882; for ten years ship surgeon on the S. S. *Prima* of Quebec; died, April 26, aged 71, from chronic nephritis.

William F. Bayless, Los Angeles, State University of Iowa College of Homeopathic Medicine, Iowa City, 1883; died, March 14, from injuries received in an automobile accident, aged 70.

John Floyd Lockhart, Mount Sterling, Ky.; Kentucky School of Medicine, Louisville, 1889; member of the Kentucky State Medical Association; died recently, aged 66.

John Edward Curtan, Los Angeles; Denver and Gross College of Medicine, Medical Department, University of Denver, 1908; died, April 27, aged 39, following an operation.

Richard E. Vernor, Nashville, Ill.; Miami Medical College, Cincinnati, 1876; member of the Illinois State Medical Society; Civil War veteran; died, April 5, aged 75.

George Hunter Greenwell, Los Angeles; California Medical College, Los Angeles, 1905; member of the staff of the West End Hospital, where he died, April 22, aged 59.

William Newton Sneed, Sr., Fairfield, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1870; Confederate veteran; died, March 28, aged 77.

Purdy Leander Hitchcock ⊕ Crotan Falls, N. Y.; Medical Department of Columbia College, New York City, 1881; died, April 5, aged 72, from chronic nephritis.

Hugo C. Reich ⊕ Sheboygan, Wis.; Rush Medical College, Chicago, 1897; also a pharmacist; city health officer; died, April 26, aged 65, from heart disease.

Arthur J. Richer, Ste. Agatha des Montes, Que., Canada; University of Bishop College Faculty of Medicine, Montreal, 1892; died, February 26, aged 53.

Myron J. Whitford, Dunellen, N. J.; Chicago Homeopathic Medical College, Chicago, 1883; member of the state legislature; died, April 24, aged 63.

Roll N. Miller, Brookport, Ill.; University of Louisville Medical Department, Louisville, 1888; died, April 20, aged 53, from cerebral hemorrhage.

Robert Nathaniel Arthurton, Oakland, Calif.; Chicago Hospital College of Medicine, Chicago, 1915; died, January 30, aged 36, from tuberculosis.

Delia Estelle Howe, San Jose, Calif.; Woman's Medical College, Chicago, 1884; died, April 20, aged 64, following a long illness.

Gilbert Hartin, Nelson, B. C.; McGill University Faculty of Medicine, Montreal, 1896; died recently, aged 62, from carcinoma.

Marion Eleanor Leeper ⊕ Northampton, Mass.; University of Michigan Medical School, Ann Arbor, 1907; died recently, aged 38.

James P. Slaughter, Chrisman, Ill., Louisville Medical College, Louisville, 1887; Civil War veteran; died, April 19, aged 78.

Archibald Frederick Targette ⊕ Philadelphia; Jefferson Medical College, Philadelphia, 1893; died, April 25, aged 53.

Frank Thomas, San Francisco; California Medical College, Los Angeles, 1896; died, April 22, aged 68, from myocarditis.

John Golden, Fowler, Calif.; University of Michigan Medical School, Ann Arbor, 1869; died, April 26, aged 78.

Heber Robarts ⊕ Belleville, Ill.; Missouri Medical College, St. Louis, 1880; died, May 1, aged 69.

Benoni Sweet, Wakefield, R. I. (years of practice); died, April 21, aged 82.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

AN APOLOGIST FOR "PATENT MEDICINES"

Henry C. Fuller, in "The Story of Drugs," Whitewashes the "Patent Medicine" Business

The Century Company has recently published a book by Henry C. Fuller entitled "The Story of Drugs, a Popular Exposition of Their Origin, Preparation and Commercial Importance." Henry C. Fuller is connected with a commercial organization that undertakes, for a consideration, to work out various technical problems for different industries. Mr. Fuller, apparently, handles that phase of the work that deals with the drug business; at least he acted as expert adviser, a few years ago, for a "patent medicine" manufacturer whose product had been exposed in The Journal.

There are several chapters in "The Story of Drugs" that will be found interesting to the layman, as well as instructive. Among these chapters are "What Drugs Are and Where They Come From," "Farming for Medicine," "Nature's Gift to Mankind," and even that on "How Medicines Are Made," although one of the half-page illustrations in this chapter shows the automatic bottling of "S. S. S." The chapter on "Vaccines and Serum Therapy" is, in general, accurate and instructive, although the author makes the mistake of confusing antitoxins with serums. In the chapter on "Vitamins" Mr. Fuller refers to the richness in Vitamin "B" of brewers' yeast and suggests that the brewing industry missed a great opportunity when it failed to bring to the attention of the public the fact—alleged—that beer is "a ready means for supplying these all important nutritional substances." When Mr. Fuller has studied the literature on vitamins more he will learn that it has not yet been shown that beer contains any vitamins.

WHAT IS "DOPE"

In the chapter on "Dope and Not Dope," antipyrin, acetanilid and acetphenetidin are given what is essentially a clean bill of health and the habit-forming tendencies of these drugs are dismissed with the phrase that they "need cause little concern." In this chapter, too, Mr. Fuller devotes a good deal of space to Coca Cola and its active ingredient, caffein. He seems quite favorably disposed toward this "soft drink," giving more than a page to the testimony of one of the witnesses who appeared as an expert for the Coca Cola people. He does not, however, quote from the testimony of the government experts in the same case, which was unfavorable to Coca Cola—not even from his own testimony. For Mr. Fuller was, at that time, a government employee and appeared as one of the government witnesses in the Coca Cola case. His testimony was to the effect that he had examined samples of Coca Cola and found caffein, some legs of insects, part of a bumble-bee, a little straw and hay-like material and other extraneous matter. He testified further that, although, in his opinion, the words "coca" and "cola" mean, respectively, coca leaves and cola nuts, he was unable to find any coca or cola products in the samples analyzed. This was when he was testifying against Coca Cola for the government.

The chapter on "Beginnings and Accomplishments of the Medicine Industry" starts out well, but ends with a fulsome puff of the manufacturers of "S. S. S.," "Pinkham's Vegetable Compound," "Bromo Seltzer," "Carter's Little Liver Pills," "Pierce's Golden Medical Discovery," etc. As indicative of the perspective shown in this chapter, we find three and one-half lines devoted to the story of the founding and development of Sharp & Dohme, less than five lines to Parke, Davis & Co., a trifle over five lines to Squibb's, fourteen lines to Mulford, half a page to S. S. S., nearly a full page to Lydia E. Pinkham, a page and a quarter to Bromo Seltzer and three fourths of a page to Carter's Little Liver Pills!

WHY ARE THERE NO PATENT MEDICINES?

In the chapter on "Patent Medicines: Their Place in the Economy of the Nation," Mr. Fuller very properly points out hat the phrase "patent medicine" has become a misnomer, as here are very, very few true patent medicines on the market today. He states that many years ago patents were granted on such medicines, but that "this practice has long since ceased." He does not, however, tell why it has ceased. Yet, Mr. Fuller surely knows why. Practically no "patent medicines" of today could be patented by their manufacturers, and they would not be patented if they could. They could not be patented because they are not new and useful substances, which they must be to be patentable; they would not be patented because modern nostrum makers are unwilling to give the public the facts regarding the composition of their products (as required by the patent office), knowing that secrecy and mystery form the backbone of the business, and urther because they are not satisfied with the seventeen-year monopoly that a patent would give, but prefer the perpetual monopoly obtained by a trade-mark. These facts, not generally known to the public and important to a proper understanding of the "patent medicine" problem, are utterly gnored by Mr. Fuller. Why?

In this same chapter Mr. Fuller says that among retail druggists "there is a great deal of ignorance" respecting the "composition and character" of "patent medicines" and that he people "outside of the manufacturers themselves" who really know "what proprietary medicines are and what they will do are the people who use them." Yet, a page farther on he quotes what he describes as an able summary of the situation to the effect that "90 per cent. of the buyers of proprietary remedies do not know what they contain; neither do they care!"

THE ALCOHOLIC NOSTRUMS

In this same chapter Mr. Fuller decries the "mistaken popular notion" that liquid patent medicines "are composed chiefly of alcohol" and declares:

> "The actual facts are that the old line liquid remedies contained no more alcohol than is necessary to keep the medicinal agents in solution and prevent spoilage from bacteria and molds."

It is hard to believe that Mr. Fuller does not know the facts in the case: that "Peruna"—certainly an "old line liquid remedy"—originally contained 28 per cent. alcohol, which was later hammered down to 20 per cent. and now, in the "dry" period, carries 12 per cent.; that "Wine of Cardui" for years carried 20 per cent. until the advent of national prohibition when the percentage was cut in half; that "Vinol," which for years had 18 per cent. was reduced in alcoholic strength to 10 per cent.; that Hostetter's Bitters," which contained 39 per cent. ("being only sufficient to hold in solution the extracted medicinal properties," etc.) was later cut down to 25 per cent.; that "Pinkham's Vegetable Compound," when sold as "a cure for prolapsus uteri" contained 18 per cent. alcohol, which was later reduced to its present strength, 15 per cent. All of these facts are certainly of interest to the public, but none of them do we find in Mr. Fuller's book.

PANEGYRIZING THE PROPRIETARY ASSOCIATION

In this same chapter, Mr. Fuller compliments the "patent medicine" organization, the "Proprietary Association," and publishes the alleged "requirements for membership" in that organization. These requirements, as have been pointed out by The Jounral, mean little to the public, for the simple reason that no one, except the members of the Proprietary Association know who constitute the membership. In this same chapter, too, Mr. Fuller says that "the Peruna Company, the Swift Specific Company, and the Chattanooga Medicine Company, are among the best equipped of any factories manufacturing medicine in the world"!

In further defense of "patent medicines" he dwells on the farming communities—"the backbone of the nation"—and declares that the life of the farmer is such that "patent medicines" are a necessity to this class. Thus:

> ". . . they breed more profusely than does the urban population; their women are more prone to suffer the discomforts peculiar to their sex; and accidents with lacerations and liability to infection are common."

No wonder we find in the suggested "Family Medicine Chest" at the end of the book "Wine of Cardui" and "Pinkham's Vegetable Compound."

THE FAMILY MEDICINE CHEST

Then there is a chapter entitled "Self-Medication—the Family Medicine Chest." As a matter of fact, the "Family Medicine Chest" does not come in this chapter, but is given as an appendix to the book. While Mr. Fuller says that "the family medicine chest need not be a miniature drug store," yet, in his suggested "chest," he lists over one hundred and thirty preparations! In the list one finds among the many proprietary articles recommended, the following:

Bromo Seltzer
Capudine
Camphocene
Castoria
Foley's Honey & Tar
Wine of Cardui
Pinkham's Vegetable Compound
Laxative Bromo-Quinine
Lysol
Sal Hepatica
Scott's Emulsion
Vick's Vaporub

In this same "Family Medicine Chest" it is interesting to note the following:

Alcohol
Blackberry Cordial
Brandy
Whisky

The book might have been more practical if the author had told the lay reader how the alcoholic products just listed are to be obtained. One would also like to know how the layman, "in the isolated hamlets of the mountains and prairies," may obtain "Dover's Powder" and "Sun Cholera Mixture Tablets," both listed in the "Chest." These opium-containing preparations are, in the eyes of the federal authorities, so dangerous that even physicians can only prescribe them subject to the restrictions of the Harrison Narcotic Law.

After reading this book one wonders why the large amount of material in it dealing with the "patent medecine" industry was not published as a separate volume and issued, not by the Century Company, but by the "patent medicine" interests. The sandwiching of the eulogy of the "patent medicine" business among material that is meritorious gives the former a standing that it would otherwise not have. Possibly the nostrum interests should be pleased to have it published in its present form and under such respectable auspices as the Century Company. The purchasers, having paid $3.00 for the book doubtless feel that all the information it contains must be valuable and authoritative. It was Tom Sawyer, we believe, who persuaded his associates that whitewashing a fence is a privilege to be paid for rather than a duty to be grudgingly done. In our opinion, the "patent medicine" interests of the country could well have afforded to pay handsomely for the exclusive rights of this book and then to have distributed it gratis as a well-conceived piece of special pleading in their behalf. It is clear that Mr. Fuller has done the "patent medicine" industry a distinct service; what he has done for the public is not so clear.

Correspondence

POSTGRADUATE MEDICAL INSTRUCTION IN VIENNA

To the Editor:—It was with profound regret that I read the communication of the Committee of the American Students at Vienna, published The Journal, April 22.

My association with American physicians who have studied and visited in Vienna during the last thirty-five years has been one that has afforded me genuine pleasure, and I should regret any misunderstanding that might interfere with the successful work of the American student in our clinics.

In the particular matter under discussion, I cannot speak authoritatively, for I have been away from Vienna for almost eight months. But I have every reason to believe that every effort is being made to meet the desires particularly of American students. I received a few days ago the description of one complete course in ophthalmology that has been planned to meet a frequently expressed wish on the part of American students for a continuous full-time course that would cover the entire subject in a fairly comprehensive manner; I am therefore taking the liberty of bringing this to your attention. The course is in English; it includes about 280 hours of work in two months' time (October and November); the lectures and demonstrations are given by all the members of the First and Second Eye Clinics, including the heads of the clinics; the registration is limited to fifteen students, and the fee is $200.

While other courses are, of course, offered, this course and others similar in character have been planned to meet the particular wishes of American physicians.

I sincerely hope that the present difficulties can be adjusted to the satisfaction of the American students, for the pleasant association that has always existed between American and Austrian scientists has been of mutual benefit to the two nations. We do not readily forget the particularly sympathetic and whole-hearted aid which many Americans have rendered my stricken country since the war, aid that has saved many scientists and their families from actual starvation. I am certain, therefore, that the misunderstanding will be of passing moment and easily adjusted.

Prof. Ernst Fuchs, Vienna, Austria.

To the Editor:—Since deciding to send our memorandum of March 24, last, for publication in regard to conditions in Vienna for postgraduate medical work (The Journal, April 22, p. 1210), Prof. D. H. Neumann, head of the ear department, has signified his willingness to have all book courses in his department read at $3 an hour, in compliance with the wishes of the American Medical Association of Vienna.

F. O. Kettelkamp, M.D., Vienna, Austria.
Secretary, American Medical Association of Vienna.

"BULLETINS OF NEW YORK'S MEDICAL CLINICS"

To the Editor:—In an editorial comment (The Journal, April 22, p. 1205), it is stated that "the benefits will be further extended if a similar cooperation or centralized control can be secured of the graduate medical schools and individual graduate courses available in a great city." I am asking you to help bring to the attention of the medical profession that we are now trying to raise $3,000 just for this purpose. Already, members of the profession have contributed $1,500. As soon as the $3,000 is raised, the Carnegie Corporation will give $12,000 toward the expenses of the first year's work in organizing graduate courses. It is remarkable that the local profession is asked to contribute toward the organization of courses of instruction intended mostly for physicians and surgeons from outside the community. Representation on the board has been apportioned among the medical schools. Other institutions will be represented as soon as the work is under way.

Otto V. Huffman, M.D., New York.
Secretary, New York Association
for Medical Education.

IS CODEIN A HABIT-FORMING DRUG?

To the Editor:—My interest in this subject arises from the annoyance and inconvenience put upon physicians, patients and druggists by the inclusion of codein in the Harrison Narcotic Law, and my impression, after thirty years of its extensive use, that there is no inherent property of the drug and no practical reason to warrant its being so included.

My first realization of the important place which codein had achieved in therapeutics was in 1915. Thinking that perhaps I was getting into a rut and failing to give my patients the benefit of medicines found useful by other physicians, I employed a bookkeeper in a large centrally located drug store to tabulate the ingredients in 1,000 prescriptions—the prescriptions to be taken equally from spring, summer, autumn and winter. Codein headed the list, occurring once in every eleven prescriptions; nux vomica, calomel, quinin, sodium bicarbonate, phenacetin, aspirin (acetylsalicylic acid) and strychnin followed in the order named.

Mentioning this to Dr. Henry P. Hynson, I was furnished by him with analyses of prescriptions found in the drug trade journals. In one summary of 117,000 prescriptions from consecutive files during 1907 and 1908, representing fifty-seven cities and twenty-eight states, codein stood seventh in the list, being exceeded only by nux vomica, quinin, calomel, sodium bicarbonate, salol and strychnin.

I have made some inquiry as to whether the use of codein has increased or decreased since these statistics were gathered. The druggist from whose files my own tabulation was made believes it more used at the present time.

One Baltimore druggist states that, as regards the sale of narcotics in general, statistics show that a very marked decrease has taken place during the last five or six years, owing to the restrictions of the Harrison law. In respect to codein, he believes that its legitimate use has not greatly decreased, if at all.

Why this popularity of codein? Codein and morphin are about equally expensive grain for grain; but as the dosage of codein is about four times as great, the cost to the patient is correspondingly increased. This popularity of codein, in spite of the high cost and without any drug-house propaganda, is due to its clinically demonstrated power to alleviate pain, allay cough and induce sleep without disagreeable side effects. It is not strongly constipating, and does not check secretion in the respiratory tract.

Is codein habit-producing? From my personal experience I answer in the negative. I recently sought the experience of the physicians of Maryland. From 1,250 cards of inquiry sent to members of our state society, I received more than 700 answers. Replies came from all our insane asylums; from our leading sanatoriums for nervous and mental diseases; from Dr. Wilkins with eighteen years' jail experience; from Dr. Woltereck, with four years' prison experience, and from Dr. Oliver, medical officer to the supreme bench. No case of codein habit had ever been seen in Maryland.

Of information received personally from outside Maryland, I quote this significant item: Dr. M. W. Swords, secretary of the Louisiana State Board of Health, writes: "During my whole experience with narcotic addicts, I have yet to see an addict of codein. It appears that this drug does not cause addicts in the same sense as the other derivatives of opium."

I have consulted all the books in the Surgeon General's Library on materia medica, pharmacology and drug addiction, and found but one reference to actual cases of codein addiction, namely, by Bastedo, who mentions having seen two codein habitues who "were broken of the habit without trouble." Turning to the medical journals, I found but two cases reported in the ninety years over which the drug has been used: one by Pelz in 1905 and one by Sollier in 1914.

The case by Sollier (*Revue de médecine légale*, 1914) is briefly this: In more than 400 cases of drug addiction treated by Sollier, this is the only one of codein habituation:

> A physician, aged 72, had been taking codein for more than six years for supposed rheumatic pains. He thought that he still was affected by the disease for which codein was originally taken. Beginning with from 4 to 6 grains (0.25 to 0.4 gm.) a day, he finally attained a dosage of 30 grains (2 gm.) a day. He never took other narcotics or analgesics. The drug was withdrawn completely in eight days. The patient left in six weeks in excellent health.

The case of Pelz (*Deutsche medizinische Wochenschrift,* une 1, 1905) is of importance in that it seems to be at the oundation of a belief in the codein habit. Although codein ad been discovered seventy-three years before, and had been xtensively used for twenty years, prior to 1905, according o Pelz not a single case of chronic codein habit was found n the literature; and all authors agreed that acquired abituation was not to be feared. He then gives the detailed istory of a case of codein habituation, the salient features f which are as follows:

> A man, aged 26, whose father was a drunkard and who had one rother mentally defective, as a child isolated himself from others ecause he felt himself diseased and everywhere at a disadvantage; he as thrown into a rage if his wishes were not fulfilled; he was dull at chool and often thought of suicide. At 17 he was unhappy, and expeienced repugnance toward life. At 20, because of unrest, he rode often n the night express between Königsberg and Berlin. On one such ourney he shot himself in the temple because of disgust with himself. Ie seemed to hear some one say, "Shoot yourself dead!"
>
> After recovery from this attempted suicide, he was more wretched han ever. Because of psychic irritation, restlessness and dejection, a erve specialist prescribed 0.5 grain (0.03 gm.) of codein three times laily as a sedative. This availed little. One day he took 15 grains (1 m.) all at once. This allayed his anxiety and restlessness and gave a ense of well-being. He later increased the dose of codein up to 25 grains 1.6 gm.) a day. Without codein, he could not get along at all—was rritable and tired of life. At the end of six months he was taking 0 grains (2 gm.) daily. At the end of a year, three large doses ailed to relieve him. He was sensitive to noise, and filled his ears vith wax to protect himself from this. He bought a reservation on he railroad to East Prussia and spent his nights riding back and orth, driven by unrest and depression. He was treated for alcoholic xcess in an institution. He used opium, about 1 grain (0.065 gm.) laily, and developed a habit for "antimorphin," a nostrum containing norphin. He took codein in conjunction with this—from 35 to 50 rains (2.25 to 3.25 gm.) daily. He used barbital (veronal) from 7½ o 15 (0.5 gm. to 1 gm.) grains daily. Finally, he took cocain for short period.
>
> He entered the Königsberg Psychiatric Clinic, Feb. 25, 1905, where e was deprived of all drugs. He did not sleep for two nights. On he third and fourth nights he slept well with the aid of 15 grains f barbital. On the fifth night he slept well without any soporific, and vas psychically more easy and cheerful. March 23, he was transferred o a suburban sanatorium for treatment, presumably for his mental state.

The patient never had a sane hour as a boy or man. On ntering the clinic, all drugs were withheld, yet he lost but wo nights' sleep. Fifteen grains (1 gm.) of barbital gave good night's rest on the third and fourth nights. On the ifth night, he slept well without medicine and was mentally nore comfortable and cheerful. On succeeding nights he ontinued to sleep without aid.

To me the case goes to show what some insane and lesperate man might do when entrusted with any medicine. t shows the effects of insanity rather than the effects of odein. Incidentally, it shows that a dosage of 15 grains 1 gm.) of codein was not poisonous although taken without aving been preceded by gradually ascending doses, and also hat a man who is taking from 35 to 50 grains (2.25 to 3.25 m.) a day can sleep peacefully without drugs on the fifth ight after withdrawal.

This case is of such a doubtful character that I believe that t should not be referred to as a case of codein habituation.

Is codein dangerous? The question as to what is a fatal lose of codein has incidentally arisen. I cannot find the nswer. Cases of poisoning are on record from comparatively mall doses, but they are cases of idiosyncrasy. I find no atalities reported in medical literature. The only mention f death from codein that I have found is in a statistical able of the U. S. Census Bureau for 1909.

The Harrison law went into effect, March 1, six years ago. t applies to "opium or coca leaves or any compound, manuacture, salt, derivative or preparation thereof." It is lesigned to trace these preparations from the producer to he ultimate consumer, and is one of the most beneficent laws ver enacted. Its genesis goes back to the Spanish-American Var, which gave us the Philippines. The Philippines gave us the opium problem. To eliminate the opium evil, a series of international commissions and conventions were held which have culminated in world-wide legislation against it. The Harrison Narcotic Law is the fulfilment of part of America's pledge to the world to help stamp out illegal opium traffic. After six years of operation, the time has come to take stock of the Harrison law and modify it to meet present-day knowledge. We should now know which derivatives of opium are habit-producing and which not, and it should be feasible to particularize the former and omit the latter.

Codein is one of our most useful and most commonly prescribed drugs. It is not a dangerous drug. No detailed account of a death from it has been found. No textbook gives the lethal dose. It apparently is not habit-forming. Known for ninety years, and extensively used for more than thirty years, only four cases of habit are mentioned in the literature. One of these cases is questionable, and the other three so easily cured as to make them negligible. Codein was used on an enormous scale in the United States for twenty-five years without restrictive laws, with apparently no habit formation. To a large extent, it displaces the use of morphin and heroin, which are habit-forming. Its inclusion in the Harrison law seemingly misbrands the drug and the physician who prescribes it, and imposes an unnecessary hardship on the physician, patient and druggist and useless expense on the government. Unless some as yet unreported evidence of habit comes to light, codein should be eliminated from the Harrison law.

William T. Watson, M.D., Baltimore.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DESENSITIZING TO QUININ IDIOSYNCRASY

To the Editor:—In the *Archives of Internal Medicine* (**24**: 378 [Oct.] 1919) appeared an article by J. J. O'Malley and D. G. Richey on "Cutaneous Reaction and Desensitization in Quinin Idiosyncrasy." As this is not available to me, would you be kind enough to inform me, either by mail or in the columns of The Journal, as to the essential technic of desensitization in persons suffering from quinin idiosyncrasy? Here in the tropics where we use much quinin in malaria we often encounter persons who cannot take the drug because of idiosyncrasy, and it is often a serious problem to treat them. In Castellani and Chalmers' "Manual of Tropical Medicine," third edition, page 1192, it is stated that "Héran and Saint-Girons give quinin as follows: The first day a 'defensive dose,' or ⅛ grain of quinin sulphate mixed with 8 grains of sodium bicarbonate is given, and two hours later, 1½ grains. The second day, two hours after the 'defensive dose,' 3 grains are administered. The third day, two hours after the defensive dose, 6 grains are given, and so on, gradually increasing the amount of quinin." I have faithfully tried this method in fourteen persons suffering with quinin idiosyncrasy, and have never been able to establish any increased tolerance in any case. I mention this in the hope that you may be able to suggest some method essentially different. Please do not publish my name in this connection.

M. F. N., Colombia.

Answer.—The method consists of giving by mouth a "desensitizing dose" of 0.005 gm. of quinin sulphate with 0.5 gm. of sodium bicarbonate. In one hour and thirty minutes, 0.1 gm. of quinin sulphate and 0.5 gm. of sodium bicarbonate are ingested in cachets. The "desensitizing dose" remains constant each day, while in the second dose the amount of quinin is increased 0.1 gm. each day. The quantity of sodium bicarbonate remains the same. Only one dose is given during any one day. In one case cited, 2 gm. of quinin was being taken without any disagreeable symptoms. In the second case cited, two other methods of desensitization were instituted. One was the administration of quinin bisulphate, by mouth, in increasing doses, once a day. The initial dose was 0.03 gm., and it was increased by as much each day. The other method consisted in giving a "desensitizing dose" of 0.01 gm. of quinin bisulphate in 5 c.c. of sterile water, intravenously, and after from thirty to forty-five minutes, giving a second dose, starting with 0.2 gm. of the same drug and increasing 0.1 gm. a day. By both methods 0.7 gm. could be given with safety, but symptoms of cinchonism appeared if larger quantities were administered.

SHAMPOO AND TREATMENT FOR OILY HAIR

To the Editor:—1. What would you recommend for oily hair that is getting thin and falling out? 2. Is lemon juice bad to use in the water for shampooing? W. P. Wheeler, M.D., Oshkosh, Wis.

Answer.—1. This prescription may be of service: Salicylic acid, 2 drams (8 gm.), and ammoniated mercury ointment to make 1 ounce (30 gm.). Apply two or three times a week, and shampoo once a week with tar soap.

2. Lemon juice in water should not be harmful for shampooing, but it cannot be of any special service in the condition described.

ARGYRIA FOLLOWING THE USE OF SILVER ARSPHENAMIN

To the Editor:—Please advise me whether cases of argyria following the use of silver arsphenamin have been reported.

Edwin L. Mott, M.D., Fresno, Calif.

Answer.—Lochte (*Therap. Halbmonatsh.* **34**:792 [June 15] 1920) has reported a case in which, five days after the intramuscular injection of 0.2 gm. of silver arsphenamin, icterus appeared which lasted fourteen days. A few days later the patient noticed an ashen gray discoloration of the skin, which rapidly became more marked, finally assuming a steel gray color. Even the eyes showed the same color. Treatment was of no avail. Another case has been reported by Schlossberger (Supposed Case of Argyria After Silver Arsphenamin, *Therap. Halbmonatsh.* **34**:608 [Nov. 1] 1920.

OLIVER'S ELECTROLYTIC TREATMENT FOR LEAD POISONING

To the Editor:—What is Sir Thomas Oliver's electrolytic treatment for lead poisoning? Is it used in this country? What is its value? Please omit my name. C. E. K., California.

Answer.—Oliver claimed that, by means of an electrolytic bath, persons suffering from lead poisoning would eliminate the lead from the system. He experimented on rabbits that had been poisoned with lead nitrate. The front paws of the animal were placed in a bath connected with the negative pole, and the hind paws in a second bath connected with the positive pole. After repeated applications, the lead paralysis rapidly yielded, and the animal seemed to develop an immunity to further lead poisoning. Men who had been poisoned by lead were subjected to the same form of treatment. Their improvement was marked, and lead was found in the water. Oxley repeated these experiments (*Lancet* **2**:880 [Oct. 8] 1914), and stated that no practical good would result from the regular treatment of lead workers by electrolytic baths as described by Oliver. His experiments showed a consistently negative result. It is now believed that any benefit derived from these baths is hardly dependent on the elimination of lead by ionization, being due to the fact that improvement of the body metabolism results in the natural elimination of the lead.

Preventive Medicine and Public Health.—Preventive medicine in the popular mind has long been interpreted as restricted in large measure to such matters as general sanitation, a pure water supply, efficient drainage, removal of public nuisances and the spread of infectious diseases, in other words, to the prevention of certain diseases as they affect the general community as a whole. This definition of public health as applied to the functions of the sanitary committees in our system of local government has been largely responsible for retarding the progress of the prevention of disease in the individual man, woman, and child, which has been described as "the real focal point of the problem," namely, the application to the individual of the medical knowledge which we already possess for the preservation of health and the arrest of the beginnings of disease.—Sir Napier Burnett, *Nation's Health* **4**:191 (April) 1922.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Georgia: Augusta, May 31-June 2; Atlanta, June 7-9. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, May 22. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

Louisiana: New Orleans, June 8-10. Sec., Dr. Roy B. Harrison, Hibernia Bank Bldg., New Orleans.

Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 6-8. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

Vermont: Burlington, June 21-23. Sec., Dr. W. Scott May, Underhill.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

ADDITIONAL HOSPITALS APPROVED FOR INTERN TRAINING

Since the publication of the list of Hospitals Approved for Internships in the 1921 edition of the American Medical Directory and the supplementary lists in The Journal of Oct. 1, 1921, and Feb. 25, 1922, the following institutions have been added:

Section I: General Hospitals:
- The Hospital of the Good Samaritan, Los Angeles, Calif.
- Providence Hospital, Oakland, Calif.
- Battle Creek Sanitarium, Battle Creek, Mich.
- Clifton Springs Sanatorium, Clifton Springs, N. Y.
- St. Alexis Hospital, Cleveland, Ohio.
  - Affiliated with St. Anne's Infant Asylum and Maternity Hospital, Cleveland, for intern service in obstetrics and pediatrics.
- St. Elizabeth's Hospital, Youngstown, Ohio
- St. Vincent's Hospital, Toledo, Ohio.
- Emanuel Hospital, Portland, Ore.
- Mercy Hospital and School for Nurses, Philadelphia.
- Peking Union Medical College Hospital, Peking, China.

Section III: Special Hospitals:
- St. Anne's Infant Asylum and Maternity Hospital, Cleveland, Ohio.
  - Affiliated with St. Alexis Hospital, Cleveland, in nursing and intern service.
- Portland Eye, Ear, Nose and Throat Hospital, Portland, Ore.

Alabama January Examination

Dr. Samuel W. Welch, chairman, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 10-14, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Birmingham Medical College	(1915)	75.8
Tulane University	(1921)	88.1, 89.3

Columbia University	(1916)	91.9
Meharry Medical College	(1921)	79.7
Memphis Hospital Medical College	(1913)	78.3

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Emory University	(1917)	Georgia
Johns Hopkins University	(1903)	Georgia
Tennessee Medical College	(1907)	Tennessee
Vanderbilt University	(1918)	Tennessee

Utah January Examination

Mr. J. T. Hammond, director, Department of Registration of Utah, reports the written examination held at Salt Lake City, Jan. 3-5, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 4 candidates examined, 2 passed and 2 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Harvard University	(1921)	88
University of Pennsylvania	(1921)	80.7
FAILED		
Creighton University	(1921)	73.1
National University, Athens	(1891)*	63.5

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1910)	Illinois
University Medical College of Kansas City	(1907)	Missouri
Washington University	(1918)	Missouri

* Graduation not verified.

Book Notices

Epidemiology and Public Health. A Text and Reference Book for Physicians, Medical Students and Health Workers. In Three Volumes. Vol. I. Respiratory Infections. By Victor C. Vaughan, M.D., LL.D., Chairman of the Division on Medical Sciences of the National Research Council. Assisted by Henry F. Vaughan, M.S., Dr.P.H., Commissioner of Health of the City of Detroit, and George T. Palmer, M.S., Dr.P.H., Epidemiologist for the Department of Health of the City of Detroit. Cloth. Price, $9. Pp. 688, with 81 illustrations. St. Louis: C. V. Mosby Company, 1922.

When one who has been an active and successful worker for many years sits down to give to his fellow workers the fruit of his investigations and meditations, the whole world is the gainer. There are few students of public health in the United States who have had so rich an experience as Dr. Vaughan and have utilized so well the opportunities that have come to them. The first volume deals with the respiratory infections. In this book are discussed the epidemiologic and public health aspects of such diseases as tuberculosis, influenza, pneumonia, measles, diphtheria and other infections known or believed to enter through the respiratory tract. It is a little surprising to find leprosy included in this volume, since, as Vaughan himself states on page 521, "there is reason for believing that the leprosy bacillus finds its entrance through wounds on the surface," and not by way of the respiratory tract. The volume concludes with an interesting chapter on weather and disease in which, however, no mention is made of rheumatism. The preface to this volume contains ten vividly written pages which should be read and reread by every student of public health. This picturesque outline of Vaughan's own life experience will undoubtedly become a classic.

Most of the chapters on specific diseases contain a full and interesting historical survey. The histories of scarlet fever and of cerebrospinal meningitis are particularly complete and interesting. Throughout the book, Vaughan's own great store of personal information is freely drawn on, and the opinions that he expresses, based as they are on his matured judgment, will be of great value to all workers in this field. Occasionally there are instances of hasty proof reading which should be corrected in subsequent editions. On page 116 the statement is made that "as the matter stands today (1921) every case of pneumonia should be regarded as a possible source of danger to others, should be isolated and the sputum deposited in special containers which should be burned," while on page 142 this opinion is apparently contradicted in the words: "With proper precautions we do not believe that strict isolation is necessary in the care of pneumonia patients." Some readers may be left a little in doubt as to Vaughan's real opinion about the desirability of quarantine in pneumonia. There is more or less repetition in certain sections, some of it perhaps unavoidable. Occasionally the same phrase is repeated without change, as in the first sentence on page 298, "Pfeiffer's work was never accepted whole-heartedly." This phrase is exactly reproduced on page 383. It is an exaggeration to say (page 59) "The diphtheria bacillus is frequently found in the saliva of normal individuals," and again (page 223) "The [diphtheria] bacillus seems well-nigh ubiquitous. Thousands of people in health carry these deadly germs in their throats and mouths." We believe that it is a mistake to include, as Vaughan has done in certain chapters, so much elementary bacteriology of the sort that appears on page 118 and part of page 119. Irrelevant material of this sort swells the size of the book unduly, and is hardly complete or accurate enough to add much value to the treatise. On page 55, for example, the rather loose statement is made: "Of those bacteria which are pathogenic to man, only anthrax, symptomatic anthrax, botulinus, tetanus and malignant edema are known to be spore formers." The bacillus of symptomatic anthrax is not known to be pathogenic for man, and there are several other human pathogens besides those mentioned which should be added to the list of spore-formers.

On page 183, the date of the first printing of the London Bills of Mortality is stated to be 1629. While there is some uncertainty as to the exact date on which the parish clerks began the printing of weekly bills, it seems to be true that in one instance at least a weekly bill was printed as early as 1603, and in 1610 the printing of a blank form for the weekly bills appears to have been the custom. The parish clerks appear to have possessed no press of their own until 1625, which is the date usually given for the printing of these bills.

The book contains many excellent and original graphs and diagrams. The paper of the text is somewhat too highly glazed for comfortable reading by artificial light. The index is inadequate, and should be enlarged. No criticism of details, however, should or can detract from the great service that Vaughan has rendered all public health workers by the publication of this invaluable work. That it will have a great and lasting influence on public health practice and opinion in this country none can doubt. The appearance of the two additional volumes promised will be looked for eagerly.

American Frohse Anatomical Charts. Plate No. 10. Chart 10a. Male Genito-Urinary Organs (External and Internal). Chart 10b. Female Genito-Urinary Organs (External and Internal). From Original Drawings by Max Brodel, Professor of Medical Drawing Johns Hopkins Medical School. Price, $16.50. Chicago: A. J. Nystrom & Co.

This chart is typical of a series of anatomic charts in colors to be used in the teaching of anatomy and surgery. Chart 10 consists of two sections, and contains eight diagrams, which show the pelvic organs of the male and female from various points of view and at various stages of dissection. The quality of the work of Professor Brödel of the Department of Medical Art in Johns Hopkins University Medical School is sufficiently well known to require no further commendation. The charts are excellently printed on linen cloth and are equal to the best foreign charts, on which American schools were formerly dependent. A key in the B. N. A. nomenclature accompanies each chart.

Kystoskopischer Atlas. Ein Grundriss für Studierende und Aerzte. Von Dr. med. Erich Wossidlo. Second edition. Cloth. Price, 195 marks. Pp. 98, with 83 illustrations. Leipsic: Wilhelm Englemann, 1921.

The present edition of this valuable book deserves all the praise bestowed on the first edition, and more. The value of the atlas is increased by the addition of new pictures, aiming to show variations of the same disease, and the effect of treatment on the pathologic conditions diagnosed. The changes of cystitis under adequate treatment, and the visualizing of the various phases following electrocoagulation of vesical tumors, merit special mention. The theory of the cystoscopic technic is the subject of a new chapter, written by Dr. Hartinger, a physicist.

Social and Industrial Medicine

WISCONSIN INDUSTRIAL COMMISSION RULES ON CHRISTIAN SCIENCE TREATMENT

A far-reaching decision was recently rendered by the Wisconsin Industrial Commission, when it ruled that an injured employee submitting to Christian science treatment, and refusing to receive competent medical and surgical care, cannot collect compensation under the workmen's compensation act. The case was that of an employee who accidentally scraped his shin on a box while working for a manufacturing company. Infection, septicemia and death followed the injury. The widow claimed death benefits, and the case was heard before the state industrial commission. Investigation disclosed that the accident occurred Dec. 16, 1921; that the employer, when first notified, Jan. 3, 1922, tendered competent treatment by a duly licensed physician, and that the treatment was refused. Investigation further disclosed that a Christian science practitioner was engaged by the employee soon after the accident, and that this practitioner continued in attendance until death, which occurred, February 8.

The question presented to the commission was whether or not the widow, because of the refusal of her husband to accept surgical treatment, should be barred from obtaining a death benefit. The commission was of the opinion that, if the injured man had accepted surgical treatment when offered, he would not have died, and that he would have recovered with no permanent disability. It was also of the opinion that the employee died because of an unreasonable refusal to submit to reasonable treatment. The applicant offered evidence to show that, in the opinion of the Christian science practitioner, the application of such science and belief would cure the human body of all diseases; but there was no proof on the part of the applicant that the application of medical and surgical treatment would not have suppressed the infection and saved the life of the injured man. In fact, there was no contention on the part of the applicant that proper medical and surgical care would not have cured the disability and prevented death. In view of the evidence, the commission could reach no other conclusion than that expressed.

The Wisconsin compensation law was amended in 1919, making the employer liable for Christian science treatment in lieu of medical treatment in all cases in which the employer did not specifically state that he would not be subject to such provision. In this case, however, the employer received no notice until January 3 that the injured man elected Christian science treatment, and on that date the employer protested and offered medical treatment. The commission therefore was of the opinion that the employer was not only not responsible for the death of the employee, but was not liable for any expense incurred for Christian science treatment.

CONTROL OF VENEREAL DISEASE IN SWEDEN

Sweden has attacked the venereal disease problem in a comprehensive manner. A recent report by Sir Lindsey Smith (*Health and Empire* **1**:37 [April] 1922), points out that most of the present laws date from 1918, but that some measures have been in force since the close of the Napoleonic wars. Any person with venereal disease who needs hospital treatment may go to one of the eighty-five county hospitals free of charge. Free medical treatment, medicines and appliances are given to a person having venereal disease in an infectious stage. One medical officer at least in each of the ten larger towns has been appointed for this work, and one for each of the 334 medical county districts. This cost the state 822,000 kroner in 1920. The government is also authorized to prescribe measures for enlightening the public as to the dangers of venereal disease, and the most effective means of preventing its transmission.

No one but a qualified physician is allowed under penalty of fine or imprisonment to treat venereal disease. Every physician must inform his patient of the nature of the disease, give him written instructions as to treatment and the prevention of its transmission, and notify the authorities of the age, sex and address, but not the name of the patient. If the patient discontinues treatment prematurely, the physician then reports his name and address to the inspector of health, who orders him to consult a physician immediately and forward a certificate to that effect. Should the patient ignore the order, the board of health is notified and the patient ordered taken to a hospital, if necessary by the police.

When a public prosecutor proceeds against a person for offenses against the public morals, e. g., rape, procuring or soliciting, he must report the accused to the inspector of health, who may order him examined, and treated if diseased. The law requires, further, that every physician try to discover the name and address of the person by whom his patient was infected. If this information is obtained, he informs the inspector of health, who orders such person to send a certificate of immunity from disease. If the certificate is not received, the inspector can compel an examination, and hospitalization if necessary. Prostitution has never been licensed in Sweden. Prostitutes are treated as vagrants who, after due warning, may be sent to a special reformatory for a period up to three years. It is an offense punishable by imprisonment for any one who knows or suspects he has venereal disease to expose another by sexual intercourse, even if the disease is not transmitted. Should a physician hear that one of his patients still in the infectious stage contemplates marriage, he must inform the marriage authorities, and the bans are prohibited. Should a married person expose his partner to infection, the injured party can be divorced unless the risk was knowingly and willingly taken.

SUPERVISION OF MIDWIVES

Today approximately two million births occur annually in this country. Thirty-three per cent. of those in New York City and 1 per cent. of those in the state of Wyoming are attended by midwives. This country, according to Dr. William R. Nicholson in his Hatfield lecture before the Philadelphia College of Physicians, is not prepared to handle its births. There are too few hospitals and too few physicians to give every mother her due. He is inclined to admit, therefore, that the midwife under present circumstances is a necessary menace. But he would demand that she work no longer without medical supervision. Twenty states require midwives to be licensed at present, but in some the procedure is a farce. Following investigation, Illinois, Missouri, Wisconsin and Rhode Island admitted that the law is not enforceable; fifteen states confessed to having no laws relative to the midwife and no knowledge at all on the question; only four states really control this practice, New York, Pennsylvania, Connecticut and New Jersey. Dr. Nicholson reports good results for the last seven years in Philadelphia County. He says that the outstanding and unique features of the supervision enforced by the board of medical education in Philadelphia are: (1) the insistence on a report from the midwife to the inspector who has her in charge within forty-eight hours after delivery, announcing, on a card furnished by the state, facts concerning the delivery, together with the address of the patient and the name of the midwife, and (2) the inspection of each mother and baby by the inspector, a medical graduate with special training in obstetrics, within the first few days after delivery. In a series of 51,693 deliveries by registered midwives, there were sixty-two maternal deaths from all causes, some of which cannot justly be credited to the midwife. It goes without saying that in a series so large all the ordinary forms of dystocia were encountered: breech presentations numbered 265; shoulder, 125; face, 52; occiput, 212; placenta praevia, 20; prolapse of the cord, 60; eclampsia, 30; sapremia, 96 cases; phlebitis, 19; puerperal hemorrhage, 99, and so on. There were in the series 333 twins, two cases of triplets, and one quadruplet birth. The number of children dying from all causes in the first week was 1,306. Of these deaths, 103 were due to deformities at birth incompatible with life, such as spina bifida and anencephaly; ninety-nine were due to injuries at birth, including injuries from forceps and versions, all of course performed by physicians called in consultation. There were 325 stillbirths; how many of these were due to syphilis could not be learned; 399 deaths were due to premature birth, the causes of which could not be learned; but the hard work done by these women, the influence of unrepaired damage of previous labors, and syphilis were the chief factors. In the last four years there has been but one case of blindness among cases attended by registered midwives.

Medicolegal

Physician Not "Immediately" Disabled by Accident

(Herwig v. Business Men's Acc. Assn. of America (Mo.), 234 S. W. R. 853)

The St. Louis (Mo.) Court of Appeals, in reversing a judgment obtained by the plaintiff, says that he sought to recover on a policy of accident insurance issued to him by the defendant. The plaintiff testified that, in November, 1915, while he was driving through the woods, he was struck over the right eye by the limb of a tree, the blow making the eye sore. On the following day, while attempting to ford a stream, he was thrown into the water, which gave him a cold and a severe pain in the ear, followed by swelling and an abscess in the ear. Feb. 4, 1916, he got some dust in his left eye and then discovered that he could not see properly with the right eye. He continued the practice of medicine for from two to four days more, after which, during February, he was unable, he testified, to attend to about 5 or 6 per cent. of his cases; that in March he was unable to attend to a majority of his cases; and that he finally quit practicing medicine, April 1, 1917, owing to his defective eyesight. In short, the record in this case disclosed that the plaintiff made no contention that he suffered any disability after the accident, until Feb. 6, 1916. The uncontradicted evidence was that he was able to do, and did do, from the date of the accident up to Feb. 6, 1916, all the acts necessary in attending to the practice of his profession. The policy provided that the benefit was to be paid only in case the insured should be immediately, totally and continuously disabled solely as a result of accident. The word "immediately" was inserted in the contract of insurance to fix the time when the disability must occur. Can it be said that a man who was able to continue his practice of medicine as usual for a period of two months and a half directly after the accident, was immediately or totally disabled? The question does not admit of much discussion. The plaintiff's case, under the evidence and under a number of authorities, was clearly excluded from the provisions of the policy.

Abnormal and Unknown Conditions and Representations of Good Health

(Eastern District Piece Dye Works, Inc., v. Travelers Ins. Co. (N. Y.), 190 N. Y. Supp. 822)

The Supreme Court of New York, Appellate Division, Second Department, says that this was an action on a policy of insurance for $25,000, on the life of a Mrs. Klein, payable to the plaintiff corporation, of which she was president. Her application was dated July 14, and the policy was dated and issued, September 4. November 19, she was admitted to a hospital, where, following an operation, she died, November 26. A bill of particulars of the defenses which was ordered stated that the respects wherein the assured's representations were false in that she was not in good health were that she was said to have had chronic intestinal obstructions with a disease condition causing adhesions. The evidence showed that she was 54 years of age, and, until a few days before entering the hospital, had been engaged in active business. The intern who took her history gave as the substance of her statement that three years previous to that time she began to notice a mass protruding from the vagina the size of a hazelnut, which gave no pain or discomfort, and no urinary or rectal symptoms. The condition had remained practically the same; but three weeks previously the patient suddenly began to feel a sensation of pressure on the bladder and rectum; also as if something was giving way in the pelvis. This caused a frequency in micturition and painful defecation. The symptoms were not very severe, but the patient felt that the time had at last arrived when an operation should be performed. Her history revealed that she had had two children and no miscarriages. There was perineal tear, occurring thirty years before, which was never repaired. The bowels were in excellent condition; appetite fine. There was no nocturia or polyuria. The intern further testified that she told him that until about three weeks before she came to the hospital she felt perfectly well. The operating surgeon, discovering a congenital abnormal condition of the intestines which was puzzling to him and such as he had never seen in twenty-six or twenty-seven years' practice, passed beyond the minor operation for which the patient had come to the hospital and performed a serious major operation to correct or at least alter the condition, and the resulting shock caused death.

In other words, the bill of particulars, limiting the answer, alleged that the representations were false, in that the assured was said to have had chronic intestinal obstruction with adhesions. She went to the hospital for a minor operation, for laceration caused by childbirth thirty years previously, which, up to the time when the application for the policy was made, had no appreciable effect on her comfort, well-being, or general health. While there, apparently when she was under the influence of anesthetics, the physician discovered an intestinal abnormality; but this condition had continued for fifty-four years, from her birth, without any indication that it interfered with proper functioning. One may depart from the normal physically, and still be sound and have no infirmity, deformity or disease. The excuse for the major operation which resulted fatally was that one of the physicians present thought that the tissue looked malignant, but on subsequent examination it was found healthy and normal. Whether this condition was such as to render false the representations of the assurred that she was in a sound condition mentally and physically, had never had any bodily or mental infirmity or deformity, and had not been disabled, was a question of fact, when the purpose for which the representations were made was taken into consideration; namely, to induce the issuance of a life insurance policy. Certainly it could not be said as a matter of law that such representations were false. Yet, even if they were false, they were certainly not fraudulent.

Because the question of the falsity of the presentations was a question of fact for the jury, and the court could not dismiss the plaintiff's complaint by ruling as a matter of law that the assured was not in good health when the first premium was paid, a judgment dismissing the complaint, which was rendered by the court as a matter of law, is reversed, and a new trial granted.

Not All Communications Are Privileged

(Koskovich v. Rodestock (Neb.), 185 N. W. R. 343)

The Supreme Court of Nebraska reverses a judgment for $5,000 damages rendered in favor of the plaintiff for injuries arising out of an alleged assault and battery, because the court holds that it was error to exclude as privileged the testimony of the physician who treated the plaintiff for his injuries and, it was said, would testify that the plaintiff told him that he pulled his revolver and snapped it several times, but it would not go off. The court holds that, under the Nebraska statute, only such confidential communications are privileged as are necessary and proper to enable a physician to discharge the functions of his office according to the usual course of practice; and, while great latitude will be given to a physician in determining what facts should be disclosed, yet in its ultimate analysis it becomes a judicial question whether such communications were necessary and proper. It is difficult to imagine how the fact that the plaintiff had a revolver in his hand, and snapped it several times but that it would not go off, would throw any possible light on, or assist in any manner, the proper treatment of his injuries. The nature of the injury was self-evident, and the treatment would be the same regardless of what the plaintiff was doing when he received the injury. It is obvious that whether a communication was confidential and necessary and proper to be given must be determined in every case according to its peculiar facts.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.
American Association for the Study of the Feebleminded, St. Louis, May 18-20. Dr. R. W. Baker, Laconia, N. H., Secretary.
American Association of Anesthetists, St. Louis, May 22-24. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Association of Industrial Physicians and Surgeons, St. Louis, May 22-23. Dr. W. A. Sawyer, 343 State St., Rochester, N. Y. Sec'y.
American Proctologic Society, St. Louis, May 22. Dr. Ralph W. Jackson, 245 Cherry St., Fall River, Mass., Secretary.
American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Middletown, Conn., Secretary.
Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Association for the Study of Internal Secretions, St. Louis, May 22. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, Yosemite, May 15-18. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Medical Library Association, St. Louis, May 22-23. Dr. John Ruhräh, 1211 Cathedral St., Baltimore, Secretary.
Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.
New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
North Dakota State Medical Association, Jamestown, June 1-2. Dr. H. J. Rowe, Lisbon, Secretary.
Radiological Society of North America, St. Louis, May 19-20. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 1. Dr. J. W. Leech, 111 Broad St., Providence, Secretary.
South Dakota State Medical Association, Huron, May 16-18. Dr. R. D. Alway, 423 S. Lincoln St., Aberdeen, Secretary.
West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Sixteenth Annual Meeting, held in Albany, April 18-20, 1922

(Continued from page 1419)

Possible Clinical Significance of Thyroid-Suprarenal Cortex Relationship

Drs. Davis Marine and Emil J. Baumann, New York: The clinical manifestations of very acute cases of exophthalmic goiter are almost identical with the clinical manifestations produced in rabbits by sufficient suppression of the cortical function. This makes possible a new conception of exophthalmic goiter. If the cortex can accelerate and inhibit thyroid activity, one must suppose that it is interrelated with many other gland activities in a similar manner, and there is abundant evidence that this is the case. We have been feeding fresh and dried suprarenal cortex in selected typical cases of exophthalmic goiter. Very encouraging results have been obtained from fresh cortex, while little or no improvement has been noted from the administration of the dried commercial preparations or those prepared by themselves.

Acute Anaphylactic Reactions Following the Intravenous Injection of Arsphenamin

Dr. Burton P. Thom, New York: Hypersensitiveness to organic arsenic in some patients and its absence in others can be explained only on the ground of idiosyncrasy. The possibility of shock following the intravenous injection of arsphenamin or any of its congeners must always be considered. Arsenic in itself possesses hemolytic power, and this hemolytic power is enhanced by using plain water or a saline solution which is hypotonic, or by improper use of the neutralizing agent, sodium hydroxid. If arsenic is to be given, the solution should always be isotonic. The water from which this isotonic solution is prepared should be doubly distilled, and it should not be more than four hours old when used. The sodium hydroxid solution should be of known strength and also freshly prepared. Neutralization should be exact—not guessed at. When it is being prepared, the solution should not be shaken too vigorously for too long a time, since its toxicity is much increased thereby. A concentrated solution of arsphenamin should never be given. A dose of 0.6 gm. of arsphenamin should never be given in less than 180 c.c. of water. I prefer neo-arsphenamin to arsphenamin. It is simpler to prepare, and thus the chances of error are reduced to a minimum. It can be given in concentrated solution. My preference is to give 0.9 gm. in 30 c.c. of water—the dilution of Thibierge.

Changes in Virulence in Tubercle Bacilli

Dr. Edward R. Baldwin, Saranac Lake: Methods for determining differences in virulence of tubercle bacilli have been unsatisfactory. There is need of a dependable method for making these determinations. We have devised a method based on guinea-pig inoculation. A culture of human tubercle bacilli, isolated thirty years ago, retains but slight pathogenicity at present. A culture isolated seventeen years ago is still quite pathogenic. A culture of bovine tubercle twenty years old is still very virulent for rabbits. A reliable method of estimating the presence or absence of virulent strains of tubercle bacilli would provide a valuable aid in prognosis. It must be remembered, however, that pathogenicity for rabbits and guinea-pigs may not be a measure applicable to man.

Improved Method of Applying Radium Through the Cystoscope

Dr. Leo Buerger, New York: Certain improvements in the cystoscopic armamentarium enhance the accuracy and increase the potency of intravesical radium therapy. In a certain field of carcinoma of the bladder, as good end-results are obtainable in the use of the cystoscopic method as with the combination of radium and surgery. The field for cystoscopic radium therapy is threefold: (1) for treatment of carcinoma alone without surgery; (2) for the treatment as a preliminary step to surgery, and (3) for the treatment of metastases. There are distinct circumstances that might lead one to adopt the cystoscopic methods of radium work, as (1) when the patient, by reason of his age, habits, special prejudices, knowledge of physical mediocrity, or what not, would refuse any operative interference, and (2) when we ourselves would deem surgical intervention contraindicated for one reason or another. We give cystoscopic radium applications preference (1) when the growth is small and appears amenable to radiation, but is so situated that an extensive operation compromising one ureter and requiring ureteral implantation would be the only correct surgical procedure; (2) when dealing with that type of small carcinoma hitherto successfully treated with snare and fulguration alone, but which is occasionally followed by local recurrence or invasion of the bladder wall; (3) because the growth is, in the main, a papillomatous one with evidences of carcinomatous change, and is small and readily accessible, but because of its potentialities for deep infiltration needs more intensive treatment than fulguration and the snare.

Open Air School for Children

Dr. Clarence A. Greenleaf, Olean: In Olean, a city of about 21,000, with the usual charitable institutions but no open air nutritional work, an active and well financed antituberculosis society was willing to build, equip and maintain an open air school. The interior is open to the roof, allowing ample air space. The color of the interior is light French gray. One half of the east roof is of wire glass; the southern exposure is of ribbed glass to the peak. The south and east sides below the plate line have double sash, clear glass with center swivel hinges. No shades are necessary. Each pupil has a locker. The desks are adjustable. There is a complete kitchenette and lavatory. Since this school was opened, last September, the pupils have been given a morning and afternoon diet (milk with crackers or bread and butter) and a well balanced noon meal. Statistics furnish abundant evidence of the value of this plan in combating undernutrition among schoolchildren.

SECTION ON SURGERY

DR. GEORGE W. COTTIS, Jamestown, in the Chair

Cholecystitis; Its Relation to Infection of the Liver and Pancreas

DR. W. HOWARD BARBER, New York: Good clinical histories remain the most valuable means of interpreting gallbladder cases, but correlation of the histories with reliable experimental observations should increase our knowledge of the liver and pancreas. Experimental workers have found microorganisms in the gallbladder, liver and pancreas, and other healthy organs, while the presence of bacteria in the blood stream does not seem of itself to indicate a pathologic condition. Bacteria may remain latent in the gallbladder walls and become a source of reinfection of other tissues. Portal-carried infection is the most common, and explains the coincidence of cholecystitis with appendicitis, duodenal ulcer, splenic disease and other infections within the portal field. The spleen strains out many organisms, sending them to the liver for destruction. Infection of the gallbladder probably occurs by lymphatic extension. In every case of cholecystitis there is probably coincident hepatitis. The pancreas is infected from the liver, by way of the regional lymphatics. Associated pancreatitis probably exists in 25 per cent. of the cases of hepatic cirrhosis. Acute pancreatitis may be caused by bile-carried infection. From the standpoint of practical treatment, cholecystectomy is the operation of choice in cholecystitis. Drainage is preferably through the cystic duct.

Intestinal Obstruction

DR. ARTHUR M. DICKINSON, Albany: The decrease in mortality figures is small, chiefly owing to delay in diagnosis of the condition until after advanced toxemia has occurred. If the cases are treated in the first twelve hours, the mortality is only 5 per cent.; this increases to 12 per cent. in twelve hours, and 30 per cent. after twenty-four hours. Excluding paralytic ileus, the contributing causes may be volvulus, intussusception, bands, kinks, gallstones, malignancy, adhesions and the like. The symptomatology includes vomiting, first of gastric contents, then duodenal, then fecal material; pain, cramplike, aggravated by catharsis; and inability to pass flatus, the latter sign being of diagnostic importance. The higher the obstruction, the less the distention, and the more fulminating the case. In regard to treatment, it is better to perform a few useless laparotomies on live patients, than many operations on moribund ones.

DISCUSSION

DR. E. A. VANDER VEER, Albany: After diagnosis is made, operation is comparatively simple. Often the finding of the abdomen full of adhesions is due to unrecognized appendicitis. We do not see so many of these cases as formerly because of earlier diagnosis. We can sum up by saying, "When in doubt, go for the appendix."

DR. W. L. WALLACE, Syracuse: One diagnostic aid is the roentgen ray, which shows enormous coils of distended intestine, and absence of gas distention where the abscess exists. Another help is rectal examination in all cases of doubt. In many cases of obstruction with pus, the abscess can be opened through the rectum.

DR. J. E. SADLER, Poughkeepsie: I take exception to Dr. Wallace's statement that the roentgen ray is necessary. The history of the case, carefully considered, and careful physical examination tell the story. The trouble arises with the men who insist on giving the patient catharsis and watching the case. We must be responsible for a good deal more education of the men who bring cases to us before we can hope to lower the terrific mortality of this disease at the present time.

DR. T. L. DEAVOR, Syracuse: The more we refine our methods of diagnosis, the more we get away from the real condition. Instead of using laboratory facilities and the roentgen ray, let us operate at once for an acute surgical abdominal condition and save the patient.

DR. ARTHUR M. DICKINSON, Albany: I think that Dr. Wallace is right about the roentgen-ray diagnosis, but at present we see the patients so late that it is not fair to them to give a barium enema. In regard to diagnosis: the question is one for, or against, operation. We recognize a certain train of symptoms and make an exploratory operation at once.

DR. W. L. WALLACE, Syracuse: I want to correct a misapprehension: I do not give a barium enema. It is merely a matter of seeing the coils of intestine filled with gas. This can be done with a bedside unit in about a minute.

Causation of Symptoms Simulating Chronic Appendicitis

DR. HOWARD L. PRINCE, Rochester: There are many symptoms in chronic appendicitis outside the appendix itself. If headache, backache, nausea, dragging sensation on the right side, constipation and the like are not due to chronic appendicitis, what is the cause? The appendix to cause symptoms must suffer obstruction as a hollow viscus, or must have inflammation. A good barium examination is a great aid in diagnosis, taken with other findings, but one should not operate on this evidence alone. When urinary symptoms are supposed to be the result of appendicitis, one should look first for trouble in the urinary tract. Indigestion and flatulence may be due to poor habits or to organic or mental disease. A neuropsychiatrist can often cure these patients.

DISCUSSION

DR. W. D. JOHNSON, Batavia: We say "normal appendix," and then wait and see what happens to the patient. My rule is in an abdominal condition to look at the appendix last, and all the other organs first, so as to be sure not to miss anything. I open the abdomen in the midline to look for things that may be forgotten.

DR. JOHNSON, Albany: I had a history of chronic appendicitis when young, with right-sided pain in the lower abdomen. Later I had the appendix removed, but six months after the symptoms returned. I had a dizzy attack and fell, afterward vomiting pinkish material. I thought it was a matter of food infection. Examination revealed 3,000,000 red blood cells. How was it possible to diagnose duodenal ulcer, which proved to be the condition from which I was suffering?

DR. THOMAS JAMESON, Rochester: There are many appendix cases which are merely mental. In many cases of gastric crises of tabes, operation is performed as for appendicitis. It is important that a general exploration of the abdomen be made. I never do an appendectomy per se. I look over the whole abdominal condition. Many duodenal ulcers clear up after the appendix is removed. No man should operate with his mind fixed on only one thing. Every surgeon should approach the case with a judicial mind. This would insure fewer bad results following operation for chronic appendicitis.

Limitations of Roentgen Diagnosis

DR. RUSSELL D. CARMAN, Rochester, Minn.: Chemists and roentgenologists have made important contributions to diagnosis, but mistakes are still being made. The reasons are that the clinician relies on laboratory diagnoses without checking up by clinical findings. Reliance on roentgen-ray diagnosis sometimes leads to error. It is necessary to determine abnormality of shadows and to know normal variants. Roentgenography can exclude many conditions, but it cannot replace a proper clinical examination. The physician must retain his seat at the head of the council table, while bringing laboratory aids into a coherent unit. Of these, the roentgen ray, the test tube and the microscope constitute a powerful trinity.

Some Phases of Gallbladder Surgery

DR. WILLIAM D. JOHNSON, Batavia: Drainage of the gallbladder in the early toxemia of pregnancy relieves the vomiting. The bile was as thick as "jackwax" in the seven cases in which this operation was applied. One death occurred two weeks after operation with acidosis, although in this case the vomiting stopped within forty-eight hours. Toxemia may be due to an incompatibility of fetus and mother. If the mother belongs to Group II, and the father to Group III, the case can be followed to see whether it is from such a union that toxemia occurs. Various important points are suggested in the surgery of deep jaundice: If it is desired to do cholecystogastrostomy or cholecystoduodenostomy, suture anastomoses should be avoided, as they run the risk of later oozing from stitch holes. A button anastomosis should be perferred, both the gallbladder and the stomach being perforated with the cautery. The pressure of the button will check hemorrhage. Use of the cautery along the edges of the incision will check oozing. In drainage of the gallbladder, the button is used, the drainage tube being attached to one part, the other part in the gallbladder, and the two parts being clamped together. This is used for the first stage operation. The outflow can be controlled by clamping the tube.

Should Gastro-Enterostomy Be Performed in Presence of Ruptured Duodenal or Gastric Ulcer?

Dr. Donald Guthrie, Sayre, Pa.: I sent out a questionnaire to 150 leading surgeons, asking: 1. Do you do gastro-enterostomy? 2. What are your postoperative results; do you have to reoperate later? 3. If you do gastro-enterostomy, what is the mortality? 4. Do you employ drainage; how long do you leave it in? To Question 1 there were four classes of replies: Twenty-two men do gastro-enterostomy as a routine; sixty-four men do not perform it; thirty-four men gave a qualified affirmative; twenty-nine men gave a qualified negative. The last two groups were very conservative in tone. To Question 2, fifty-seven reported that it was not necessary to reoperate; fifty said that it was necessary to reoperate. To Question 3, various mortality rates were given —from 0 to 60 per cent.—some believing that gastro-enterostomy increases the mortality. To Question 4, 137 answers were received; 101 men use drainage; twenty-three men mention suprapubic drainage. Drainage periods are from twelve hours to twelve days. Deaver says that he does gastro-enterostomy, but states that it should be done only by a skilled surgeon. The difficulty with this statement is that few men will admit they are not skilled surgeons, and try, therefore, to follow the dictates of the master. The Mayos believe that gastro-enterostomy is simply an emergency operation. Their postmortem studies show ten cases in which gastro-enterostomy would not have saved the patient. Most surgeons think it is not wise to do gastro-enterostomy at the same time as the closure, but that it may be done later, when there will be two safe operations, instead of one risky one.

DISCUSSION

Dr. W. D. Johnson, Batavia: There are always some men who "always do some one thing," or "always do not do something." Some fellows say they always give nitrous oxid anesthesia; the only time they do not is in the operating room. This does not make the question more simple. I asked one surgeon what he did in late cases. He said, "I do not operate in late cases." The man who explores the abdomen with the dictum of some one else to guide him will go astray. One word about drainage: In early cases there is chemical peritonitis; in later cases the patients have bacteriologic peritonitis, so that after twelve hours they need drainage. Morrison's pouch is a fairly safe place to drain. You can get a soft tube down over the brim of the pelvis and turn the patient over on his right side and get postural drainage.

Dr. Thomas Jameson, Rochester: What about different types of ulcers? If we deal with old, chronic, scar tissue ulcer, which suddenly perforates, I believe that gastro-enterostomy should be done. With the embolic type, in which the patient suddenly collapses without previous symptoms, which is due to sudden embolic blocking, that certainly does not need gastro-enterostomy, but simple closure. I don't believe that there is a routine measure. We must use individual judgment and save the patient. We must remember that the ascending colon acts as a temporary dam and shuts off the abdomen from the irritating fluid. If a drain is inserted at once into the flank, the fluid can be got rid of without the use of sponges. In old calloused ulcers, after closing the perforation, one can change clothes and use clean instruments and do a gastro-enterostomy. With the drainage from the stomach the patient begins to improve.

Dr. Eugene Pool, New York: In considering the mortality in these cases, of fifty-seven patients operated on last year, thirty-six had been operated on within six hours, and nine had a gastro-enterostomy done in addition to closure. There were no deaths. In the cases in which operation was performed from twelve to twenty-two hours after, the mortality was 10 per cent. The type of operation made no difference in the early cases. The late cases have a high mortality anyway, and one cannot do a gastro-enterostomy. The cases were followed for seven years, and in ten we found some barium retention, and a second operation was needed. Seven were operated on again and did well; the others refused reoperation. The others needed no further operation. Thus it would seem that if we perform gastro-enterostomy, we shall subject two thirds of the patients to unnecessary operation. The one third who need it later can have a secondary operation at some future time. It is very difficult to say on which side of the pylorus the ulcer lies. In regard to drainage, the early cases do not need draining of the peritoneal cavity. In all cases, one should drain to the peritoneum because of the irritant action of the extravasated gastric fluid, which causes the superficial wounds to break down.

Dr. T. L. Deavor, Syracuse: It would be a delicate thing to suggest to some men that they are not skilful, but they should be warned against attempting to do as much as Deavor does at one sitting. There is one symptom of ulcer that is never seen in appendicitis, which is the tendency of the patient to rest his stomach against a bureau or table if he can. We do not do a routine gastro-enterostomy. In several cases I did not do a closure, but applied an omental graft. The patients did well and had no symptoms after. There was too much induration for closure. I would rather take a chance with suprapubic drainage than not drain at all. A suction apparatus is useful. One can draw out the pus and leave the cavity dry.

Dr. Donald Guthrie, Sayre, Pa.: This paper deals with duodenal perforations and not with gastric ulcer. In regard to closure, we often see Nature's work in closing with omentum, and feel almost ashamed to pull and tug at the closure. In our series we had thirty-one cases with simple closure, which did well. We had seven deaths and four recurrences. In regard to the type of operation: The self-preservation instinct is a strong one, and I do not believe I should allow any man to do a Finney operation on me, unless it were Finney himself. With gastro-enterostomy, there are two or three hundred good surgeons to whom I should submit; but, if I were yelling with pain, I should want the ulcer closed as quickly as possible and get it over. I cannot bring myself to do a gastro-enterostomy as a routine. If the patient died, I should never forgive myself. Radical procedures are followed by occasional operators, but we must not believe it a good routine practice to do gastro-enterostomy at the time of closure.

Mixed Tumors of the Parotid and Their Treatment by Radium

Dr. F. McN. Johnson, New York: These tumors are of three types: benign adenoma, malignant adenocarcinoma and mixed tumors. The first grows slowly, is encapsulated in the gland, and arises from acini or glandular ducts. Occasionally, malignant changes are seen. The second type develops rapidly; sometimes they metastasize; sometimes they contain cysts; if very malignant, they are solid. The third type probably arises from embryonal remnants. In treatment, radium has not been used very constantly. Radium always acts on the same tissues in the same way; therefore, they probably behave as do other tumors of the same types. In these tumors, deep penetration can be used without destroying the skin and without injury to the cranial nerves. Radium may be used to get good results in cases very unfavorable for surgery.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Chicago

April, 1922, **12**, No. 4

Symposium on Motion Pictures. E. G. Routzahn, C. E. Turner, S. Osborn, E. Stuart, C. Ellis, E. C. Meyer, H. E. Kleinschmidt and P. P. Jacobs.—p. 269.
Symposium on How to Further Progress in Health Education and Publicity. E. G. Routzahn, W. F. Snow, C. Dinwiddie, W. L. Dealey, M. S. Routzahn, B. R. Rickards, M. L. Rose, L. Marcus and W. A. Evans.—p. 279.
Food and Health. H. C. Sherman, New York.—p. 294.
Healthful Home. I. S. Wile, New York.—p. 295.
Chemical and Biologic Reactions in Dorr-Peck Tank. A. M. Buswell, A. A. Brensky and S. L. Neave, Urbana, Ill.—p. 299.
Community Organization in Antituberculosis Campaign. G. J. Drolet, New York.—p. 311.
Objectionable Forms of Penny Candies. C. H. LaWall.—p. 318.
Treatment of Swimming Pool Water with Ultraviolet Rays. W. F. Walker, Detroit.—p. 320.
Dental Work as Prophylactic Measure in Improving Physical Condition of Employees. T. P. Hyatt, New York.—p. 325.
Diphtheria Control. B. E. Roberts.—p. 328.

Archives of Occupational Therapy, Baltimore

April, 1922, **1**, No. 2

Psychiatry and Occupation. E. B. Saunders, Towson, Md.—p. 99.
Diversional Occupation Always Therapeutic. L. J. Haas, White Plains, N. Y.—p. 115.
Occupational Therapy as Applied at Eudowood Sanatorium. M. F. Sloan.—p. 121.

California State Journal of Medicine, San Francisco

April, 1922, **20**, No. 4

*Suprapubic Versus Perineal Prostatectomy. F. Hinman, San Francisco.—p. 113.
Differential Diagnosis of Eczematoid Diseases. S. Ayres, Los Angeles. —p. 116.
Oral Foci of Infection, Their Diagnosis, Differentiation and Systemic Manifestations. R. Burns, Jr., San Francisco.—p. 120.
Clinical Aspects of Pneumonia. H. H. Lissner, Los Angeles.—p. 124.
*Unusual Complications in Case of Middle Ear Infection. I. H. Jones, Los Angeles.—p. 126.
Treatment of Hunner's Ulcer of Bladder by Fulguration. H. A. R. Kreutzmann, San Francisco.—p. 128.
Radical Mastoid Operation Under Local Anesthesia. H. B. Graham, San Francisco.—p. 130.
Pyelonephritis: Review of 100 Cases. O. C. Foote, San Pedro.—p. 131.
Unusual Forms of Acute Poliomyelitic Paralysis. W. F. Schaller, San Francisco.—p. 133.

Suprapubic Versus Perineal Prostatectomy.—A comparative study of 134 cases made by Hinman shows that Young's perineal prostatectomy excels the suprapubic operation in every respect. It has given a lower mortality, 2.2 per cent., as against 15 per cent.; and a higher percentage of cures, 83 per cent. as against 38 per cent., even in spite of the handicap of less promising material. Recto-urethral fistula, persistent perineal fistula and incontinence have been absent in all later cases and at no time troublesome. The generally poor results that have been reported for Young's perineal prostatectomy are, in Hinman's opinion, directly blamable to the inexperience of the operator rather than the fault of the operation. Properly performed, Young's is an ideal surgical procedure, but presents two types of technical difficulty —the anatomic approach and the acual glandular enucleation. Errors in the first lead to injuries of the rectum or external sphincter; in the second, to structural defects, with either persistence of prostatism or its recurrence. Prevention of surgical errors in the anatomic approach comes by experience and a knowledge of the anatomy of the perineum; prevention of the structural defects is best secured by a complete, clean removal of the hyperplasia. This is simpler and more certain by the modified method of enucleation whereby the hyperplastic mass can be accurately dissected out intact under direct control of the eye. In the twenty-five cases in which this perineal *en masse* enucleation has been used, the immediate and later results have been most gratifying, 100 per cent. functional cures.

Unusual Complications in Middle Ear Infection.—Jones' case presented an apparently mild otitis media, violent labyrinth irritation and a very large postauricular abscess.

Canadian Medical Association Journal, Toronto

April, 1922, **12**: No. 4

Embryology and Physiology of Colonic Stasis. G. E. Armstrong, Montreal.—p. 197.
Next Great Advance in Medicine. A. B. Macallum.—p. 202.
Glimpses into Endocrinology. W. F. Hamilton, Montreal.—p. 209.
History in Tuberculosis. H. C. Parsons, Toronto.—p. 216.
*Toxic Goiter; Effect of Thyroidectomy on Basal Rate, Pulse Rate and General Nutrition. E. M. Eberts, Montreal.—p. 219.
Cancer Problem. H. A. Bruce, Toronto.—p. 225.
Thyroid Function from Chemical Viewpoint. A. T. Cameron, Winnipeg. —p. 229.
Acute Appendix. W. Jamieson, Hamilton, Ontario.—p. 232.
Favus: Seventeen Cases. H. A. Dixon and A. H. Rolph, Toronto.—p. 235.
Intubation vs. Tracheotomy. J. M. Rogers, Ingersoll, Ont.—p. 238.
Uterine Hemorrhage from Viewpoint of General Practitioner. F. A. L. Lockhart.—p. 240.
Nephrolithiasis, Pyonephrosis and Impacted Urethral Calculus in Boy Four Years of Age. H. C. Cassidy.—p. 246.
*Case of Anus Vestibularis; Reconstruction with Successful Result. R. O'Callaghan, Calgary.—p. 246.

Effect of Thyroidectomy on General Nutrition and Pulse Rate.—In none of fifty consecutive cases of thyroidectomy analyzed by Eberts has the procedure failed to eliminate hyperthyroidism, reduce the pulse rate to normal limits, and restore body weight. To secure this uniformity in results, it is essential that all hyperplastic cases should remain at rest for three months after operation. To maintain these results, a much longer period may be essential in those cases in which the inital toxemia has been severe and accompanied by profound nutritional disturbances, or where the intoxication, though comparatively mild, has persisted for several years. Permanency in results in hyperplastic goiter is dependent, apart from postoperative rest, on the performance of a radical operation. Approximately from three fourths to four fifths of the total bulk of the gland should be removed. When an insufficient amount of tissue from both lobes and isthmus is removed, hypertrophy of the residue may take place. Ligation and lobectomy should be considered as "stage" operations, and as having but temporary effect. They may be indicated in high rate cases as a means of bringing the rate within safe bounds, and also serve as tests of the patient's stability. With the broadening of experience and improvements in technic, however, "stage" operations in hyperplastic goiter are less frequently indicated. Having the various clinical features accurately assessed in each case, the time chosen for operation is the most important single factor in the conduct of the case. The best results are to be secured by early operation, before toxic saturation has been reached; that is, before exophthalmos is pronounced, before grave nutritional changes have developed (loss of weight and strength), and before the myocardium has been seriously damaged. Of the residual symptoms, exophthalmos and myocarditis are the most pernicious. Clinical observations suggest that a carbohydrate-fat dietary promotes nutritional repair more rapidly than a diet in which proteins are freely allowed, and that this may be explained on the basis that proteins favor the perpetuation of hyperthyroidism, by supplying the necessary elements for the synthesis of thyroxin. This theory, while at first applied in the treatment of convalescent patients, is now being tested as a means of lowering the basal metabolic rate before operation is undertaken.

Anus Vestibularis Operated for After Nine Years.—O'Callaghan reports the case of a girl, aged 9, who was born with an imperforate anus. Examination revealed a small fistulous opening in the lower end of the vestibule. After consultation, it was thought advisable to wait until later if no serious symptoms arose. The mother changed her residence and since that time, nine years ago, the child has had no attention. The bowels have never moved normally. About once a month she would have a desire to defecate and would roll on the floor in great pain and straining the girl would pass hard pencil-shaped feces. The abdomen increased in size and the attacks of pain became more frequent; while the passing of fecal matter took place at longer intervals and with greater pain. Symptoms of partial obstruction, vomiting, pain and fever developed. The condition was one of anus vestibularis, the opening so small that it would not admit a lead pencil. Splitting the perineum from posterior wall well down toward the coccyx and dissecting free this wall it was brought down and fixed to the skin margin. The child six months later was in excellent health, her bowel movements daily with complete control indicating that colon was evidently getting back its lost tone.

Colorado Medicine, Denver

April, 1922, **19**, No. 3

Anatomic and Functional Differences of Germ and Somatic Cell. G. A. Boyd, Colorado Springs.—p. 75.
Coincidence of Gallstones and Kidney Stones in Same Patient. L. Freeman, Denver.—p. 81.
*Early Diagnosis and Treatment of Cancer of Uterus. R. T. Frank.—p. 83.
*Trichomonas Vaginalis Vaginitis. J. B. Hartwell, Colorado Springs.—p. 86.

Radiotherapy in Cancer of Uterus.—Two points are emphasized by Frank, one is the growing tendency to reckless radicalism for "suspected malignancy." This tendency is strongly condemned. The other is radiotherapy. Hitherto hopeless cases can now be cured in some instances. Frank suggests that perhaps in the near future operation for uterine cancer may become unnecessary and obsolete. Early recognition and early treatment will, however, continue to be as essential as ever.

Trichomonas Vaginalis Vaginitis.—Most satisfactory results have been obtained by Hartwell in the treatment of these cases by placing sodium bicarbonate powder in the vaginal vault. The following morning the patient takes a douche of plain water. In the afternoon the treatment is repeated. Daily treatments are required for about two weeks and every second day for another four weeks before the vagina is free from trichomonades. The principle of treatment is to maintain the reaction of the vagina strongly alkaline, which alkalinity seems to be inimical to the life and growth of *Trichomonas vaginalis.*

Georgia Medical Association Journal, Atlanta

April, 1922, **11**, No. 4

Gallbladder Affections. F. K. Boland, Atlanta.—p. 127.
Recurrent Inguinal Hernia. C. H. Watt, Thomasville.—p. 131
Treatment of Amebic Dysentery G. M. Niles and H. N. Kraft, Atlanta.—p. 134.
Eclampsia. A. B. Patton, Athens.—p. 136.
Routine Examination of Chest. W. W. Jarrell, Thomasville.—p. 138.

Iowa State Medical Society Journal, Des Moines

April, 1922, **12**, No. 4

Diseases of Blood-Vessels as Seen in Eye. E. Jackson, Denver.—p. 131.
Retinal Changes in Cardiovascular and Renal Diseases. J. E. Reeder, Sioux City.—p. 136.
Pneumococcus Peritonitis. V. F. Marshall, Appleton, Wis.—p. 138.
Diagnosis and Treatment of Infantile Paralysis. A. F. O'Donoghue, Sioux City.—p. 141.
Acute Infections of Abdomen. D. W. Ward, Oelwein.—p. 143.
Significance of Sacrococcygeal Dermoids in Relation to Rectal Diseases. A. P. Stoner, Des Moines.—p. 145.

Johns Hopkins Hospital Bulletin, Baltimore

April, 1922, **33**, No. 374

Immunologic Reactions of Bence-Jones Proteins. II. Differences Between Bence-Jones Proteins from Various Sources. S. Bayne-Jones and D. W. Wilson, Baltimore.—p. 119.
*Study on Experimental Rickets. XIX. Prevention of Rickets in Rat by Means of Radiation with Mercury Vapor Quartz Lamp. G. F. Powers and E. A. Park, New Haven, Conn., P. G. Shipley, E. V. McCollum and N. Simmonds, Baltimore.—p. 125.
Graphic Method for Calculation of Diabetic Diets in Proper Ketogenic-Antiketogenic Ratio. R. R. Hannon and W. S. McCann, Baltimore.—p. 128.
Alveolar and Blood Gas Changes Following Pneumectomy. G. J. Heuer and W. D. W. Andrus, Baltimore.—p. 130.
Posterior Resection of Rectum and Rectosigmoid (Kraske or Modified) under Regional Anesthesia. G. L. Labat, Paris.—p. 134.
*Use of Bone Graft in Treatment of Pott's Disease. W. S. Baer, Baltimore.—p. 140.
Suggested Modification of Wright Opsonic Technic Based on Differential White Blood Count. H. B. Cross, Baltimore.—p. 142.
*Dissemination of Bacteria in Upper Air Passages. II. Circulation of Bacteria in Mouth. A. L. Bloomfield, Baltimore.—p. 145.
Bacterial Nutrition. Growth of a Hemophilic Bacillus on Medium Containing Only an Autoclave-Stable Substance as an Accessory Factor. T. M. Rivers, Baltimore.—p. 149.
S. Bayne-Jones, Baltimore.—p. 151.
Rôle of Situation in Psychopathologic Conditions. E. L. Richards, Baltimore.—p. 152.
Presence of Nucleic Acid in Bacteria. A. J. Schaffer, C. Folkoff and

Prevention of Rickets by Exposure to Mercury Vapor Quartz Lamp.—Ten rats exposed to the radiations from the mercury vapor quartz lamp were killed after sixty-four days and were free from rickets both grossly and histologically. The beneficial effects of the radiations from the mercury vapor quartz lamp were not limited to the skeleton, since the condition of the rayed animals underwent a general improvement. The effects of the radiations of the mercury vapor quartz lamp on the growth and calcification of the skeleton of the rat and on the animal, as a whole, seem to be similar to, if not identical with, those brought about by direct sunlight and by cod liver oil.

Use of Bone Graft in Pott's Disease Not a Routine Procedure.—In Pott's disease Baer would resort to operative procedures only in selected cases, and simply as one of the aids in making a cure, but not as the chief means. Pott's disease is a pathologic condition which must necessarily run a very chronic course and its cure is accomplished only when amalgamation of the vertebral bodies is assured. This necessarily takes time. Mechanical means, therefore, particularly in infancy and in the growing child, must be the main method for stabilization of the vertebrae, and when the graft is used it is to be regarded only as an aid and must not be relied on alone. In infancy the operation is questionable owing to its magnitude and to the tendency which it has to weaken the system and thus favor the incidence of general tuberculosis and other infectious diseases. In this class of cases the ultimate, if not the immediate, mortality is high. In the growing period, from 6 to 16 years of age, in carefully selected cases the bone graft may be used, but must be considered only as an aid, and proper mechanical treatment must be kept up until the period of growth is over or amalgamation of the vertebrae has taken place. In adults the bone graft is indicated in the majority of cases, but even here mechanical support should be used for at least six months.

Circulation of Bacteria in Mouth.—The experiments described by Bloomfield show clearly that there is a definite mechanism whereby foreign organisms which enter the mouth are removed. Its essential feature is a direct and rapid transport of the bacteria toward the esophagus. It appears probable that the organisms are swallowed after reaching this point.

Journal of Biological Chemistry, Baltimore

April, 1922, **51**, No. 2

*Metabolism of Diabetes. R. M. Wilder, W. M. Boothby and C. Beeler, Rochester, Minn.—p. 311.
Interactions of Oxygen, Acid and Carbon Dioxid in Blood. A. V. Hill, Manchester, Eng.—p. 359.
Micromethod for Estimation of Ammonia in Blood and in Organic Fluids. K. L. Gad-Andresen, Copenhagen, Denmark.—p. 367.
Micro-Urease Method for Estimation of Urea in Blood, Secretions and Tissues. K. L. Gad-Andresen, Copenhagen, Denmark.—p. 373.
System of Blood Analysis. III. New Colorimetric Method for Determination of Amino-Acid Nitrogen in Blood. O. Folin, Boston.—p. 377.
Colorimetric Determination of Amino-Acid Nitrogen in Normal Urine. O. Folin, Boston.—p. 393.
Retention and Distribution of Amino-Acids with Especial Reference to Urea Formation. O. Folin and H. Berglund, Boston.—p. 395.
Necessity of Checking up Quality of Sodium Tungstate Used in System of Blood Analysis. O. Folin, Boston.—p. 419.
Colorimetric Methods for Separate Determination of Tyrosin, Tryptophane and Cystin in Proteins. O. Folin and J. M. Looney, Boston.—p. 421.
Free and Bound Water in Blood. B. S. Neuhausen, Baltimore.—p. 435.
*Proteins of Tomato Seed (Solanum Esculentum). C. O. Johns and C. E. F. Gersdorff, Washington, D. C.—p. 439.
Colorimetric Method for Determination of Homogentisic Acid in Urine. A. P. Briggs, St. Louis.—p. 453.
Relation of Photosynthesis to Production of Vitamin A in Plants. J. W. Wilson, Providence, R. I.—p. 455.
Interaction Between Blood Serum and Tissue Extract in Coagulation of Blood. I. Combined Action of Serum and Tissue Extract on Fluorid, Hirudin and Peptone Plasma; Effect of Heating on Serum. L. Loeb, M. S. Fleisher and L. Tuttle, St. Louis.—p. 461.
Id. II. Comparison Between Effects of Stroma of Erythrocytes and of Tissue Extracts, Unheated and Heated, on Coagulation of Blood and on Mechanism of Interaction of These Substances with Blood Serum. L. Loeb, M. S. Fleisher and L. Tuttle, St. Louis.—p. 485.
Unsaturated Fatty Acids of Egg Lecithin. P. A. Levene and I. P. Rolf, New York.—p. 507.

Metabolism of Diabetes.—The complete metabolism of a patient with severe diabetes is reported by Wilder et al. for a period of seventy-four days. The basal respiratory quotients averaged 0.693, the highest quotient being 0.74, and the lowest 0.65. Nine experiments are reported on the immediate effect of food on the metabolic rate and respiratory quotient. The glucose tolerance varied inversely with the basal metabolic level, rising as the rate fell and vice versa. This behavior seems to indicate a definite interrelationship of the two. Diets high in fat, but low in protein and planned so that they contained nearly 2 gm. molecules of fatty acid to 1 of glucose, on two occasions, checked a dangerous and rising acidosis. The metabolism data of two days when the acidosis was minimal indicated actual ketogenic antiketogenic ratios in the metabolism mixtures of 1.53 and 1.78. It is suggested that the proportion of fatty acid which will completely burn with a limited amount of metabolizing glucose is not the same at all metabolic levels but may be increased by measures designed to depress the basal metabolic rate.

Proteins of Tomato Seed.—Analyses made by Johns and Gersdorff of five samples of tomato seed and press cake showed an average content of 36.91 per cent. protein. From seed of high germinating quality two globulins, a and B, have been isolated and analyzed. Analyses by the Van Slyke method show that the nutritionally essential basic amino-acids are well represented in these globulins. They are high both in arginin and lysin. The B-globulin contains also an unusually large percentage of histidin, but in the a-globulin the histidin content is low. Both globulins respond to the qualitative tests for tryptophan and tyrosin. Tests failed to disclose the presence of albumin and glutelin.

Journal of Industrial Hygiene, Boston

April, 1922, **3**, No. 12

Adequate Industrial Medical Service for Small Plant. C. P. McCord and D. K. Minster, Cincinnati—p. 363.
Metatarsophalangeal Fractures; Report of Twenty-Seven Cases. A. G. Bolduc, Bayonne, N. J.—p. 371.
Establishment of Dental Clinic. L. E. Hastings, Philadelphia.—p. 376.
Report on Investigation to Determine Hazard to Health of Operators Using Spraying Machine for Painting: Risk of Lead Poisoning. N. C. Sharpe, Toronto.—p. 378.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1922, **19**, No. 3

*Action of Salicylates on Uterus. J. W. C. Gunn and M. Goldberg.—p. 207.
Note on Adrenalin Hyperglycemia in Man. H. L. Ulrich and H. Rypins, Minneapolis.—p. 215.
Determination of Circulation Time in Rabbits and Dogs and Its Relation to Reaction Time of Respiration to Sodium Cyanide. A. S. Lovenhart, B. H. Schlomovitz and E. G. Seybold, Madison, Wis.—p. 221.
*Action of Potassium Salts on Medulla as Shown by Perfusion of Medulla of Terrapin (Pseudomys Troosti) with Potassium Salts. W. J. R. Heinekamp, Urbana, Ill.—p. 239.

Action of Salicylates on Uterus.—The action of sodium salicylate on the uterus was investigated by Gunn and Goldberg with a view to determining its possible influence in abortion. It was found to have a stimulating action in the uterus, but usually only in concentrations higher than those found in the blood during the treatment of rheumatic fever. It is suggested that abortion occurring in rheumatic fever is the result of the fever, and that salicylates have probably little effect unless the uterus is specially sensitive.

Action of Potassium Salts on Medulla.—Heinekamp found that potassium influences the cardio-inhibitory center of the terrapin, producing inhibition of the heart. Sodium salts and magnesium iodid were without effect.

Journal of Urology, Baltimore

April, 1922, **7**, No. 4

Atrophic Pyelonephritis. W. F. Braasch, Rochester, Minn.—p. 247.
*Physiology and Pathology of Ureter. W. C. Quinby, Boston.—p. 259.
*Effect of Saline Purgatives on Absorption and Excretion of Phenolsulphonephthalein. D. I. Macht.—p. 271.
*Pneumopyelography: Advantages and Technic. S. A. Thompson, New York.—p. 285.
Dissolution of Calculi in Renal Pelvis and Ureter. R. C. Bryan and R. D. Caldwell.—p. 295.
*Surgical Infections of Kidney. J. N. Baker, Montgomery, Ala.—p. 307.
Toxicity of Potassium Chlorid in Experimental Nephritis. F. P. Underhill and R. C. Ferguson.—p. 311.
Unilateral Fused Kidneys. A. Hyman, New York.—p. 321.
*Saligenin as Local Anesthetic for Cystoscopy in Men. A. D. Hirschfelder, A. G. Wethall and G. J. Thomas, Minneapolis.—p. 329.
Test Tube Holder for Collection of Ureteral Specimens. C. S. Levy, Baltimore.—p. 333.
Inexpensive Carrier and Receptacle for Ureteral Catheters. E. C. Schroeder.—p. 335.
Urologic Irrigator Sterilizer. A. B. Cecil, Los Angeles.—p. 337.

Physiology and Pathology of Ureter.—Quinby cites cases illustrative of the fact that an obstruction may be caused by the prostate which is accompanied by extreme degrees of renal damage and still the ureters remain normal. Such evidence leads strongly to the conclusion that whatever may be the fate of the ureter or of its valvular opening after infection has supervened, there is either no change in its histology or at most only moderate hypertrophy in clean cases. As regards the infected cases, evidence also exists that in some of these, too, there is but little change in the ureters. But in some instances of longer duration or of greater severity of infection, profound alteration with dilatation of the tube and destruction of its valvular opening are well known to occur. How can there by any "back pressure," in a physical sense, on a kidney whose ureter is normal anatomically, and the ureterovesical valve of which is apparently competent? asks Quinby. He sees no way of explaining these conditions other than by assuming the existence in man of the reflux of urine from the bladder upward into the ureters which happens experimentally in animals.

Effect of Saline Purgatives on Excretion of Phenolsulphonephthalein.—The excretion of phenolsulphonephthalein by the kidneys after its administration through the stomach tube in animals, Macht asserts, is delayed by the previous administration of saline purgatives in the same animal. The administration of saline purgatives through the stomach tube in animals produces also a delay in the excretion of phenolsulphonephthalein even after injections of that drug. The observations on animals have been confirmed also on a few human subjects and therefore invite a more extensive clinical investigation concerning the influence of saline purgatives on the excretion of phenolsulphonephthalein.

Pneumopyelography.—Pneumopyelography is endorsed by Thompson as being a simple, though uncommon, procedure, one which deserves a greater popularity. Its procedure is attended by apparently no reaction and causes the patient less discomfort than the injection of an opaque solution. In certain cases it is a greater aid in roentgenographic diagnosis, than the opaque solution.

Mistaking an Acute Pyelitis for Acute Appendicitis.—Close observation of more than seventy-five cases of pyelitis and ureteral stricture has convinced Baker not only of their frequent occurrence, but also, by reason of the close mimicry of other lesions, of the fruitlessness of many abdominal operations undertaken for their relief. In an analytical study made of fifty cases of pyelitis and ureteral stricture, it was found that seven patients had been operated on during an acute exacerbation for acute appendicitis. The pathology present in the appendix and remainder of the peritoneal cavity in no way accounted for the acuteness of the clinical symptoms; later postoperative studies revealed the true condition to be in the ureter and kidney pelvis. The similarity of the symptoms presented by an acute pyelitis or stricture to those of an acute appendicitis is striking. Yet by carefully considering, always, the possibility or probability of the retroperitoneal lesion, and by insisting on such a study of the upper urinary tract as the urgency of the case will justify, Baker says, the operator will, sooner or later, spare himself both chagrin and embarrassment.

Saligenin Anesthesia in Cystoscopy.—In ten cases in which 4 per cent. solutions of saligenin were instilled into the male urethra anesthesia satisfactory for cystoscopy was obtained, as was likewise the case in twenty cases in which 8 per cent. solutions were used. No unpleasant results were experienced in these cases. Hirschfelder et al. maintain that saligenin is a local anesthetic of very low toxicity which can be used satisfactorily for local anesthesia for cystoscopy in the male.

Kansas Medical Society Journal, Topeka

April, 1922, **22**, No. 4

Infant Feeding. E. G. Padfield, Salina.—p. 97.
Oidiomycosis: Coccidioidal Granuloma: Cutaneous Blastomycosis. C. R. Burkhead, Wichita.—p. 101.

Kentucky Medical Journal, Bowling Green

April, 1922, **20**, No. 4

Significance of Wassermann Reaction. L. K. Baldauf, Louisville.—p. 225.
Present Treatment of Syphilis with Especial Reference to Efficacy of Modern Methods. W. M. Brunet, Brooklyn.—p. 229.
Treatment of Neuro-Syphilis. H. J. Farbach, Louisville.—p. 235.
Treatment of Hernia. G. P. Grigsby, Louisville.—p 246
Some Considerations of Pyelitis E. O. Grant, Louisville.—p. 253.
*Toxemia of Pregnancy with Eye Symptoms. S. G. Dabney, Louisville.—p. 260.
Carcinoma of Rectum: Case Report. S. C. McCoy, Louisville.—p. 263.
Mucous Colitis Due to Partial Intestinal Obstruction. H. N. Leavell, Louisville.—p. 265.
Diagnosis and Treatment of Some of Cardiac Arrhythmias. J. R. Morrison, Louisville.—p. 268.
*Torsion of Omentum: Case Report. F. Ritter, Louisville.—p. 276.
Placenta Praevia: Report of Two Cases. E. Speidel, Louisville.—p. 277.
Puerperal Eclampsia; Report of Case. T. J. Marshall, Bardwell.—p. 280.
Sarcoma of Eye. C. C. Maupin, Louisville.—p. 283.
Fibrosarcoma of Upper Jaw: Carcinoma of Cheek. J. G. Sherrill, Louisville.—p. 284.
Some Indications for Intravenous Use of Sodium Iodid. R. R. Elmore, Louisville.—p. 285.
Arsphenamin Dermatitis Exfoliativa: Case Report. W. J. Young, Louisville.—p. 288.
Psychasthenia: Case Reports. H. B. Scott, Louisville.—p. 289.

Toxemia of Pregnancy with Optic Neuritis.—Dabney reports what he believes was a case of optic neuritis with slight atrophy, due to the toxemia of pregnancy. Sight had become impaired during pregnancy, but at just what period the patient could not state. She had suffered from headache, nausea, swelling of the ankles, etc. She was delivered of a living child at about term; she had no convulsions, and made an uneventful recovery. Her urine was examined several times after delivery and found normal. Her vision at last examination was: right eye, 20/50; left eye, 20/70.

Torsion of Omentum.—For thirty-six hours Ritter's patient suffered from excruciating pain throughout the abdomen, especially in lower portion. There was nausea but no vomiting. At operation the omentum was found with its free end twisted by four or five complete corkscrew turns into a cylindrical tapering mass about 6 inches long and 1½ inches in diameter. Efforts to untwist same were unsuccessful. It was covered with inflammatory exudate, and on separating the corkscrew turns beginning gangrene and necrosis were noted. The mass was amputated after ligating the healthy omentum proximal thereto. The patient made an uneventful recovery.

Maine Medical Association Journal, Portland

April, 1922, **12**, No. 9

Radiotherapy and Electrocoagulation in Treatment of Malignant Disease. G. E. Pfahler and B. P. Widmann, Philadelphia.—p. 245.

Medical Record, New York

April 15, 1922, **101**, No. 15

Reeducational Treatment of Confirmed Stammerers. L. P. Clark, New York.—p. 609.
Neurasthenia: Its Treatment by Massage and Kinesitherapy. D. Graham, Boston.—p. 613.
Physical Treatment of Forms of Arthritis. W. B. Snow, New York.—p. 617.
Heretofore Unknown Menace Inherent to Therapeutic Serums. F. Herb, Chicago.—p. 620.
Successful Treatment of Pulmonary Tuberculosis in First and Second Stages. J. Z. Taylor, Baltimore.—p. 622.
Real Danger in Present-Day Cases of Blennorrhea of New-Born. W. Mehl, Buffalo.—p. 623.
Pedicled Flaps Aided by Free Fat Transplantation. W. Van Hook, Chicago.—p. 625.
New Ideas on Causation of Varicose Veins, Leg Ulcers and Pruritus Ani. G. E. Barnes, Herkimer, N. Y.—p. 626.
Homigrade Thermometer. F. E. Aspinwall, Wilseyville, N. Y.—p. 627.

April 22, 1922, **101**: No. 16

Present Day Tuberculosis Problem in Europe and in United States. S. A. Knopf, New York City.—p. 651.
Arsenical Pigmentation of Skin. D. W. Montgomery and G. D. Culver, San Francisco.—p. 655.
Dislocation of Semilunar Bone of Wrist. Report of Case. I. Cohen, New York.—p. 656.
Case of Multiple Osteomyelitis. J. T. Newman, New Haven, Conn.—p. 659.
Critic of Modern Roentgen-Ray Therapy in Cancer. M. J. Sittenfield, New York.—p. 660.
Résumé of Vaccine Therapeutics. E. C. Laverty, Louisville.—p. 663.
Modern Healing of Mastoid Wounds: Its Relation to Mastoidectomy and Postoperative Dressings. H. B. Blackwell, New York.—p. 666.
Reports of Seven Cesarean Sections: Five for Eclampsia and Two for Contracted Pelvis. W. L. Dunning, Newburgh, N. Y.—p. 667.
Diagnosis of Hernia of Ovary and Tube. L. F. Watson, Chicago.—p. 668.
Case of Stone in Posterior Urethra. L. Michel, New York.—p. 669.

Military Surgeon, Washington, D. C.

March, 1922, **50**, No. 3

Surgeon and Operator. A. P. C. Ashhurst, Philadelphia.—p. 237.
Prevalence of Syphilis in China Expedition, 15th U. S. Infantry. R. E. Houke.—p. 251.
Prevention of Extragenital Chancres in Army, Based on Study of Syphilitic Registers on File at Army Medical Schools. J. S. Lambie.—p. 261.
Modification of Wassermann Test. R. E. Houke.—p. 278.
Milk Borne Epidemic of Typhoid at Fort McPherson, Ga. A. T. Cooper, N. F. Curtis and R. Skelton.—p. 283.
Theory of Disinfection. L. T. Fairhall.—p. 295.
Report of Outbreak of Typhoid at Jacobstown, New Jersey, August, 1921. S. J. Turnbull.—p. 306.
Study of 2,400 Cases Presenting Cardiovascular Symptoms, Accepted for Military Service. R. Brooke.—p. 310.
History of Military Medicine. F. H. Garrison.—p. 318.
First Determination of Aortic Aneurysm in Living Subject by Military Surgeon. A. N. Tasker.—p. 338.
So-Called Deadly Bullet. R. A. Foster.—p. 343.

Missouri State Medical Association Journal, St. Louis

April, 1922, **19**, No. 4

*Hirschsprung's Disease; Report of Case. L. Rassieur, St. Louis.—p. 139.
Problems in Massive Dose Roentgen-Ray Therapy—Newer Method of Application and Measurement. E. C. Ernst, St. Louis.—p. 144.
Present Status of Tuberculin Therapy. A. C. Henske, St. Louis.—p. 149.
Early Diagnosis of Pulmonary Tuberculosis. S. H. Snider, Kansas City, Mo.—p. 155.
General Anesthesia. W. E. Handley, Springfield, Mo.—p. 159.
Smallpox and Vaccination. G. Dock, St. Louis.—p. 163.
Suppurative Diseases of Paranasal Sinuses with Particular Reference to Diagnosis and Treatment. E. R. Van Meter, St. Louis.—p. 171.
Epithelioma of Glans Penis. Report of Case. R. C. Lonsberry, Springfield, Mo.—p. 176.
Bacteriology and Influence on Medicine and Surgery. T. R. Frazer, Commerce, Mo.—p. 178.

Case of Hirschsprung's Disease.—Rassieur has made a very complete gross and microscopic study of the bowel in a case of Hirschsprung's disease in which the colon presented a kink 7 cm. from the beginning of the cecum; a second at the hepatic flexure; a third at the splenic flexure; a fourth in the middle of the descending colon; a fifth at the end of the descending colon. No valves or tumors could be made out at any of the kinks. Rassieur believes that when the first kink became effective the descending colon became dilated. As it increased in every diameter it no longer found room in its normal position. Its position therefore changed. Then the third kink caused the dilatation of the transverse colon. As it increased in all its diameters it no longer could maintain its normal location. With the change of location, the transverse colon developed the fourth kink at the hepatic flexure. After the same manner the second and the fifth kinks, and the cecal dilatation developed. The kinks were due to a change of the location of the bowel caused by the dilatation. The latter force seemingly caused lengthened mesenteries. Where the mesentery did not lengthen with equal rapidity, as at the hepatic flexure, the splenic, and the lower portion of the sigmoid colon, there a kink was formed. The process was most pronounced in the descending colon because here it had its inception. The clinical manifestations were first noticed soon after the baby was weaned.

New Jersey Medical Society Journal, Orange

April, 1922, **19**, No. 4

Scoliosis as Concerns General Practitioner. B. W. Moffat, New York.—p. 93.
Acute Surgical Abdomen. D. Miner, Jersey City.—p. 95.
Acute Medical Abdomen. H. S. Forman, Jersey City.—p. 98.
Primary Sarcoma of Gallbladder. H. I. Goldstein, Camden.—p. 100.

New York State Journal of Medicine, New York City

April, 1922, **22**, No. 4

*Resection of Bartholin's Glands. E. D. Barringer, A. W. Williams and M. A. Wilson, New York.—p. 145.
Epidemic Jaundice. H. Williams, Albany, N. Y.—p. 150.
Intestinal Flora in Infants. D. H. Sherman and H. R. Lohnes, Buffalo.—p. 155.

Case of Streptococcus Hemolyticus Meningitis and Bacteremia; Operation and Recovery. Case of Severe Meningitis; Operation and Recovery. W. C. Bowers, New York.—p. 158.
Nursing Mother: Study in Lactation. F. H. Richardson, Brooklyn.—p. 161.
Feeding Sick Children. W. D. Ludlum, Brooklyn.—p. 165.
Place of Disorders of Conduct in Pediatrics. J. S. Wile, New York.—p. 168.
Diagnostic Value of Pupillary Symptoms in General Disease. M. L. Foster, New Rochelle, N. Y.—p. 171.
Optic Atrophy in Child Caused by Localized Meningitis Without Symptoms. H. L. Fifield, Syracuse, N. Y.—p. 174.
Homosexuality. C. P. Oberndorf, New York.—p. 176.
Surgical Considerations in Disease of Gallbladder and Bile Ducts. A. O. Wilensky, New York.—p. 180.
*Intermittent Spasm of Renal Artery. M. A. Rabinowitz, Brooklyn.—p. 181.
Cooperation of School and Health Authorities. J. E. Burke, Schenectady, N. Y.—p. 184.
Efficiency in Corrective Treatment in School Medical Inspection. J. W. Dimon, Utica, N. Y.—p. 186.

Resection of Bartholin's Glands.—Barringer et al. analyze a series of twenty-one cases to justify their recommendation to remove all diseased Bartholin's glands in every case of gonorrhea in the female. With three out of twenty chronic cases showing positive smears and cultures for gonococcus, they feel that this operation is justifiable and it is recommended as a matter of routine on a venereal service where there is opportunity to do it under proper surgical conditions. The chief danger is hemorrhage, which should be controlled carefully at the time of operation. The vaginal route is considered superior to the external one.

Spasm of Renal Artery.—The renal artery may undergo spasm as a result of local vascular trouble, or by way of irritation of the splanchnic nerves. Bilateral renal angeiospasm leads to diminished or complete cessation of urine formation. One of the two cases cited by Rabinowitz was an instance of bilateral renal angiospasm. The symptomatology of intermittent spasm of the renal artery will vary with the intensity, duration and frequency of the attacks, and as to whether one or both sides are involved. The attack may also be associated with localized angiospasms elsewhere—coronaries, cerebral, or peripheral vessels—or generalized vasospasm. The pain of unilateral renal arteriospasm may resemble superficially that due to renal colic, except that it is not as severe and the patient does not throw himself restlessly about in order to secure what might be a comfortable posture. Hyperalgesia of the eleventh and twelfth dorsal spinal segments may be found, particularly in the hypersensitive patients. The urine, if previously negative, will, after the attack, usually show abnormal elements—albumin, casts and red blood cells. If these elements, due to previous arteriosclerotic nephropathy, have already been present, they may be found increased after vascular crisis. The presence of new found or increased abnormal elements in the urine after the attack will depend to a great extent on the duration and severity of the renal ischemia produced. The more severe the ischemia the greater the renal pathology. Spasm of the renal artery being but a functional state, postmortem studies can only be of service in determining etiologic factors or in the exclusion of other diagnosis.

Northwest Medicine Seattle

April, 1922, **21**, No. 4

Pathology, Diagnosis and Surgical Treatment of Goiter. E. Goetsch, Brooklyn.—p. 97.
Technic of Operation for Goiter to Improve Postoperative Cosmetics. J. Hunt, Seattle.—p. 104.
Value to Surgeon of Basal Metabolic Rate in Toxic Goiter. J. E. Else, Portland.—p. 108.
Year in Europe. R. W. Matson, Portland.—p. 116.
Preparation of Cancer Patient for Operation. D. T. Quigley, Omaha.—p. 122.

Southwestern Medicine, Phoenix, Ariz.

April, 1922, **6**, No. 4

Management of Some Chronic Digestive Troubles. D. E. Smallhorst, El Paso, Texas.—p. 127.
Organotherapy. M. B. Culpepper, Carlsbad, N. M.—p. 132.
Diagnosis and Treatment of Hay-Fever. R. C. Young.—p. 134.
Treatment of Hay Fever with Arizona Pollens. E. W. Phillips, Phoenix.—p. 136.
Intranasal Pressure. S. G. Von Almen, El Paso, Texas.—p. 144.
Public Health. R. B. Durfee, Bisbee.—p. 146.
Treatment of Acute Peritonitis. J. A. Hardy, El Paso, Texas.—p. 149.
Tendon Transplantation in Forearm. R. D. Kennedy, Globe.—p. 153.
Case of Syphilis with Bone Lesions. D. C. Dodds, Albuquerque, N. M.—p. 154.

Surgery, Gynecology and Obstetrics, Chicago

April, 1922, **34**, No. 4

*Pancreatic Cysts and Pseudocysts. Case of Total Extirpation by Extraperitoneal Method. A. Primrose, Toronto, Canada.—p. 431.
Diagnosis and Treatment of Some Common Injuries of Shoulder Joint. R. W. Lovett, Boston.—p. 437.
*Diagnosis and Treatment of Tuberculous Empyema. C. A. Hedblom, Rochester, Minn.—p. 445.
*Gastric Hemorrhage. G. E. Armstrong, Montreal, Canada.—p. 466.
Growth Problems Following Osteomyelitis of Adolescent Long Bones. K. Speed, Chicago.—p. 460.
Deltoid Paralysis and Arthrodesis of Shoulder Joint. G. F. Straub, Honolulu, Hawaii.—p. 476.
Human Actinomycosis: Source and Mode of Infection. W. W. Mattson, Tacoma, Wash.—p. 482.
*Management of Acute Cranial Injuries by Early Exact Determination of Intracranial Pressure, and Its Relief by Lumbar Drainage. H. Jackson, Chicago.—p. 494.
*Analysis of End Results in Two Hundred Thirty-Two Hysteromyomectomies; Ovarian Conservation. J. C. Clark and C. C. Norris, Philadelphia.—p. 509.
*Relationship Between Histologic Structure and Biologic Activity of Goiter Tissue. F. de Quervain, Berne, Switzerland.—p. 513.
*Acute Pulmonary Edema in Labor. F. G. Corbin, Mendoza, Argentine Republic.—p. 517.
*Traumatic Fat Necrosis of Female Breast and Its Differentiation from Carcinoma. B. J. Lee and F. E. Adair, New York.—p. 521.
Some Plastic Operations. L. Eloesser, San Francisco.—p. 532.
Demonstration of Bladder Diverticula. H. L. Kretschmer, Chicago.—p. 558.
Operating Cystoscope in Application of Radium to Cancer of Rectum Following Colostomy. J. O. Bower, Philadelphia.—p. 539.
Treatment of Congenital Hallux Varus. A. MacLennan, Glasgow, Scot.—p. 540.
Amputation Stumps and Their Adaptation to Artificial Limbs. C. Bearse, Boston.—p. 541.

Extirpation of Pancreatic Cyst by Marsupialization.—Primrose reports a case of pancreatic cyst discovered in a woman immediately after the birth of her child at full term. There was no previous history to indicate its presence; it was of large size, invading the pelvis, and was mistaken for an ovarian cyst. Total extirpation was done with complete recovery. The operation consisted in marsupialization accomplished by suturing an opening in the posterior parietal peritoneum to an opening in the anterior parietal peritoneum. The cyst wall was dealt with entirely outside the peritoneal cavity which had been shut off from the field of operation by the method described. Primrose believes that this method of uniting the opening in the posterior parietal peritoneum to the opening in the anterior parietal peritoneum has not hitherto been suggested or described in the treatment of pancreatic cysts. Hitherto it has been the wall of the cyst which was sutured in the process of marsupialization while in the method suggested and successfully carried out by Primrose the peritoneum alone is sutured and the cyst wall is not included in the process.

Tuberculous Empyema.—In twenty-three patients seen in the Mayo Clinic since 1910, the tuberculous nature of the empyema was proved. In thirty-eight others, the patient had a tuberculous infection, determined by pulmonary lesions, and by characteristic histories and symptoms in sixteen, in seven of which the diagnosis of tuberculosis of the pleura was made at operation from gross appearance. Two of the remaining nine patients died of tuberculosis. A presumptive diagnosis of tuberculous empyema was made in these thirty-eight cases. A past history of pleurisy with effusion is common in cases of tuberculous empyema. In many cases the effusion is serous at the onset. Tuberculous pleurisy may be primary, or it may be secondary to a pulmonary, peritoneal, or other tuberculous lesion. The onset of a tuberculous effusion may be insidious or it may be sudden and associated with an acute and severe constitutional reaction. A mixed pleural infection due to the perforation of a tuberculous cavitation often runs an acute and rapidly fatal course. The diagnosis of tuberculous empyema is made by demonstration of the bacilli in the exudate, by animal inoculation, or by examination of the sectioned pleura. A sterile effusion is probably tuberculous. An infected effusion may be tuberculous. The treatment of this condition is discussed in detail.

Blood Transfusion in Gastric Hemorrhage.—Whereas in ten or twelve cases of gastric hemorrhage seen and treated by Armstrong or his colleagues, operative treatment had failed, in two recent cases transfusion of whole blood, not citrated, was followed by recovery. Armstrong says it seems highly probable that the hemorrhage is the result of some infection.

Acute Injuries of Brain.—In most acute injuries of the brain, Jackson asserts, the cerebrospinal fluid pressure is a fair index as to the severity of the lesion. Dependable prognosis can be made by an increase or decrease of this pressure. A new clinical classification of injuries of the brain based on cerebrospinal fluid pressure alone, as shown by the mercury manometer, is superior to the accepted classification of concussion, contusion and compression. The pathogenesis of acute injuries of the brain demonstrates that the principal effect of the edema of the brain and hemorrhage is to interfere with the absorption of cerebrospinal fluid by the usual paths; this sets up a vicious circle causing further pressure on the brain by the accumulating fluid in the basal cisterns below the tentorium cerebelli and in the lateral ventricles which presses the brain upward against the dura and produces cortical anemia. The cortical anemia, if unrelieved, quickly leads to gliosis causing lasting changes in the character, disposition and mentality of the patient, if he recovers from the brain injury. The relief of the increased pressure on the brain and the reestablishment of the normal path of absorption of the cerebrospinal fluid can be obtained by repeated lumbar drainage—which in acute injury cases is absolutely without danger. Lumbar drainage is superior to subtemporal decompression in relieving pressure below the tentorium cerebelli and has the further advantage that it leaves no mutilating skull defect. The use of concentrated salt solutions intravenously lowers cerebrospinal tension but does not remove blood. Experiments on dogs, producing pressure on the cerebrum and on the medulla, show that the pulse, respiration and blood pressure are affected only when the medulla is compressed. Therefore, to wait for these changes as an indication for operation on the cerebrum in acute cranial injury is to court disaster.

Effect of Ovarian Conservation in Hysteromyomectomy.—An analysis made by Clark and Norris of 232 cases showed that hysteromyomectomy is productive of excellent end results whether or not ovarian conservation is practiced. Of all patients in this series, more than 99.5 per cent. were cured or improved, and more than 83 per cent. declared that their general health was good or improved one year or more after operation. Better end-results and greater comfort to the patient can be secured as the result of ovarian conservation. Everything being equal, better end-results follow the conservation of both ovaries than the retention of one, but one ovary is far better than none. Conserved ovaries seldom give subsequent trouble. Among 171 cases in which ovarian conservation was practiced, 261 ovaries were conserved, and in none of these patients was a second operation for the removal of the ovary necessary. That conserved ovaries may give subsequent trouble is conceded, as is also the fact that the series of cases quoted may have been unusually fortunate in this respect. Successful ovarian conservation depends on the condition of the ovary at the time of operation, the maintenance of an adequate blood supply, and the retention of the ovary in its normal position. The authors believe that undue emphasis has been placed on the frequency of cystic and other forms of degeneration in conserved ovaries, and that attention to the points mentioned will largely abrogate such disturbances. Each case should be individualized. The temperament of the patient should be studied, and a correlation of this with history and the pathologic process found at operation should determine the type of operation to be performed. Conserved ovaries functionate. Even in those patients in whom the ovary does not functionate permanently, the occurrence of the surgical menopause is less abrupt and severe than in those women on whom a bilateral oophorectomy has been performed. Among the former class of cases the artificial menopause generally resembles the normal menopause more closely than does that following the removal of both ovaries.

Biologic Activity of Goiter Tissue.—The results of deQuervain's researches and experiments on rats may be summarized as follows: Feeding rats with goitrous substance always causes an increased sensitiveness to lack of oxygen. The strongest was found with exophthalmic goiters containing a little colloid, and then in decreasing order with nontoxic colloid goiter, general parenchymatous enlargement (adenomatosis according to Wilson), adenomatous goiters from noncretins and the same from cretins. The injection of serum from thyroid veins produced in all cases a positive reaction, but less strong than did thyroid feeding. The order of succession was the same. The blood from veins of common goiters is distinctly more active than that of cretin goiters. Blood from the arm veins is distinctly active in the cases of colloid goiter and parenchymatous enlargement, but, on the other hand, not distinctly in cases of adenomatous goiters neither from noncretins nor from cretins. In three out of four cases of dwarf cretins with thyroid atrophy (without goiter) the blood from the arm produced a decrease in sensitiveness to lack of oxygen.

Acute Pulmonary Edema in Labor.—Corbin relates the history of a woman, aged 24, who ten minutes after the birth of a child manifested symptoms of imminent death from asphyxia. Incoordination between the pulse and respiration especially attracted attention. On auscultation vesicular respiration and innumerable crepitant and subcrepitant râles were heard through both lungs, while percussion was normal. A diagnosis of acute pulmonary edema was made. Ten minutes after the onset of these symptoms the woman began to cough at short intervals, while with each attack she brought up a mouthful of frothy, bloody liquid. In the next half hour she had coughed up 700 gm. of this liquid and at the end of an hour this measured more than a liter. This expectoration, which at first was decidedly bloody, became rose colored and finally clear and crystalline. In the afternoon the pulse was 90; no râles were heard. Corbin believes that the cause of the pulmonary edema was cramp or spasm of one of the heart cavities.

Traumatic Fat Necrosis of Mammae.—Lee and Adair maintain that traumatic fat necrosis of the female breast is a disease not infrequently encountered, and one which must always be differentiated carefully from carcinoma.

U. S. Naval Medical Bulletin, Washington, D. C.

April, 1922, **16**, No. 4

Medical Aspects of Gas Warfare. G. H. Mankin.—p. 641.
Alcohol Question in Sweden. J. S. Taylor.—p. 649.
Social Service Worker and Ex-Service Man. J. T. Bone.—p. 653.
Review of Reorganization of Sanitary and Public Health Work in Dominican Republic Under United States Military Government of Santo Domingo. R. Hayden.—p. 657.
Some Lessons of World War in Medicine and Surgery from German Viewpoint. W. S. Bainbridge.—p. 672.

Virginia Medical Monthly, Richmond

April, 1922, **49**, No. 1

Stricter Cleanliness in Surgery. S. Leigh, Norfolk.—p. 1.
Blood Pressure in Pregnancy. J. N. Upshur, Richmond.—p. 3.
Cancer Propaganda. J. W. Long, Greensboro, N. C.—p. 5.
Rectal Onanism: Report of Case. A. D. Ownbey, Newport News.—p. 9.
Spleen in Surgery. C. Williams, Richmond.—p. 10.
*Case of Siamese Twins. J. D. Collins, Portsmouth.—p. 14.
Uterine Fibroid Treated with Radium. J. J. Mundell, Washington, D. C.—p. 14.
Medical Ethics. D. Furman, Greenville, S. C.—p. 15.
Diagnostic Value of Analysis of Urine. A. L. Dodson and O. O. Ashworth, Richmond.—p. 22.
Acute Anterior Poliomyelitis. L. Davis, Roanoke.—p. 25.
Acute Perforation of Duodenal Ulcer. G. H. Bunch, Columbia, S. C.—p. 27.
Surgery of Chest During Twenty-Six Months in Military Service. J. C. Motley, Abingdon.—p. 30.
Surgical Treatment of Trigeminal Neuralgia. A. G. Brenizer, Charlotte, N. C.—p. 33.
Duodenal Ulcer and Cholecystitis. W. T. Vaughan, Richmond.—p. 34.
Paresis: Résumé of Treatment. J. T. A. Wright, Nashville, Tenn.—p. 38.

Siamese Twins.—The twins in Collins' case were full term and fully developed. Both were girls. They were united anteriorly from the umbilicus to the upper extremity of the sternum, the union consisting of a broad fusion of the bodies beginning from a point one-half inch inside the nipple line of each side. The combined weight was 14 pounds. There was one cord and one placenta. The children were born dead.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1922, **26**: No. 8

*Case of Extreme Dilatation of Duodenum Due to Chronic Obstruction. R. E. Roberts.—p. 237.
*Effect of Roentgen Rays on Enzyme Action. R. D. Lawrence.—p. 244.
Case of Gallstones. C. Saberton.—p. 246.
Simple and Inexpensive Apparatus for Making Serial Radiographs of Pylorus and Duodenum Both in Horizontal and in Upright Positions. J. R. Riddell.—p. 249.
Polar Reversal in Muscle Testing. E. P. Cumberbatch.—p. 252.
Twenty Cases of Ulcer of Leg Treated by Electrical Methods. C. A. Robinson.—p. 253.
Roentgen-Ray Apparatus for Deep Therapy. W. E. Schall.—p. 258.

March, 1922, **26**, No. 10

Electrotherapy in Gynecology. A. Zimmern.—p. 301.
Stereoscopy. L. H. Clark.—p. 317.
Radium Applicator Forceps. C. P. G. Wakeley.—p. 324.

Extreme Dilatation of Duodenum.—A crescentic band of cicatricial tissue at the duodenojejunal flexure was the cause of the extreme dilatation of the duodenum present in Roberts' case. About 2 inches below this there was a hernial orifice in the mesentery of the jejunum, through which almost the whole of the remainder of the small intestine had passed, but there was no evidence of obstruction of the small bowel at any point other than the above.

Effect of Roentgen Rays on Enzymes.—Lawrence concludes that radiation has little, if any, effect on enzyme action.

Dublin Journal of Medical Science

February, 1922, No. 24

*Hemorrhagic Shock; Its Cause and Influence on Pregnancy. E. H. Tweedy.—p. 624.
*Three Cases of Peritonitis Treated by Radium. W. C. Stevenson.—p. 632.
Zinc Ionization and Zinc Electrolysis in Diseases of the Throat, Nose and Ear. A. R. Friel.—p. 640.

Cause of Hemorrhage Shock.—In discussing the causation of shock it seems to Tweedy that little attention has been paid to one of its earliest and most marked characteristics, namely, the almost universal relaxation of the unstriped and of the striped muscles as well. In no other way can the exaggerated inflation and drawing in of the cheeks during respiration in extreme shock be accounted for. The pupils open, the anus relaxes, the intestines dilate, the bladder expands, and Tweedy is of the opinion that the veins are also affected. At a later stage the vessel walls become pervious and permit the escape of plasma, thereby in all probability adding a further toxic element. This, however, does not account for the emptiness of the vessels during the earlier periods of shock. Increase in the caliber of all the veins as well as the capillaries would quite well account for this, and would also explain the absence of engorgement in the abdominal veins, for the increased capacity would make them appear comparatively empty, in spite of their containing an amount of blood not much less than their normal supply. The heart, which might be expected to retract on its diminished contents, appears on the contrary to dilate or, at all events, to become dilatable; many positive observations have demonstrated this fact, for instance, when saline infusion has been passed too rapidly into a vein. If elongation of muscle is a condition of shock it should be present to a marked degree in the uterus, which is the case in many instances. The possibility of a muscle in similar manner actually exceeding in length its normal limits or, in other words, undergoing a process the reverse of retraction has been suggested. Contraction is not interfered with by this overstretching, therefore the arteries contracted in shock are probably in a condition of "retraction reversed." Tweedy asserts that much that was formerly obscure is made clear by this concept, and one need no longer hold or teach the very improbable view that concealed accidental hemorrhage arises as the result of an atonic and enfeebled uterus, a uterus which could never mature a full term fetus, for sterility, abortion or rupture would occur as its inevitable result. Accidental hemorrhage is due either to toxemia or direct violence. If the blood fails to escape quickly, absorption of its poisonous products is followed by shock and dilatation of the uterus, while the plug, by holding back blood, may increase the severity of the symptoms. Hysterectomy with its 50 per cent. mortality is based on the supposition of a rotten unretracting uterus.

Radium Therapy of Peritonitis. — Favorable results are reported by Stevenson from the surface application of radium in two cases of peritoneal tuberculosis and one case of malignant and inoperable pelvic tumor, which was reported by the pathologist to be a colloid cancer.

Indian Journal of Medical Research, Calcutta

October, 1921, **9**, No. 2

*Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with the Hookworm Inquiry in the Madras Presidency. J. F. Caius and K. S. Mhaskar:
  XI. Extractum Filicis Liquidum.—p. 191.
  XII. Kousso.—p. 198.
  XIII. Kamala.—p. 202.
  XIV. Pulvis Arecae.—p. 206.
*Bacteriologic Investigation of Influenza. R. H. Malone.—p. 210.
Studies on the Flagellates of Genera Herpetomonas Crithidia and Rhynchoidomonas. VII. Some Miscellaneous Notes on Insect Flagellates. W. S. Patton.—p. 230.
Id. VIII. Note on Behaviour of Herpetomonas Tropica Wright, the Parasite of Cutaneous Herpetomonas (Oriental Sore) in the Bed Bug Cimex Hemiptera Fabr. W. S. Patton and S. Rao.—p. 240.
Id. IX. Note on Behavior of Herpetomonas Donovani Laveran and Mesnil in the Bed Bug, Cimex Hemiptera Fabricius. W. S. Patton, H. M. LaFrenais and S. Rao.—p. 252.
Development of the Leishman Donovan Parasite in Spleen Juice and in Alimentary Tract of Cimex Lectularius (Lin.). H. A. Adie.—p. 255.
Bacteriologic and Laboratory Technic. III. W. F. Harvey.—p. 261.
Behaviour of Paramecium Caudatum Toward Cinchona Alkaloids. H. W. Acton.—p. 339.
Infection with Nuttallia Ninense Among Hedgehogs in Northwest Frontier Province, India. J. A. Sinton.—p. 359.
Desiccated Nutrient Media. W. F. Harvey and K. R. K. Iyengar.—p. 364.
*Value of Wassermann Test. IV. Significance and Value of Positive Wassermann Reaction in Tuberculosis. K. R. K. Iyengar.—p. 369.
Conorhinus Rubrofasciatus (De Geer). P. R. Awati.—p. 371.
Geographic Distribution of Indian Rat Fleas as Factor in Epidemiology of Plague. F. W. Cragg.—p. 374.

Therapeutic Value of Anthelmintics.—Extract of male fern is not recommended as an anthelmintic by Caius and Mhaskar. It deteriorates readily and may easily be adulterated. Very little is known of the chemistry and pharmacology of the drug. Ninety minims is the admissible dose. Neither are kousso, kamala or areca recommended as anthelmintics.

Bacteriologic Investigations of Influenza.—Seventy-five per cent. of 175 specimens of the sputum or pharyngeal secretion of influenza patients examined by Malone during epidemics contained Pfeiffer's bacillus. The accessory respiratory sinuses of forty-one out of fifty-three subjects examined postmortem, contained pus. From this pus Pfeiffer's bacillus was recovered in thirty-four cases and sometimes in almost pure culture. The bronchi, bronchioles, consolidated lung tissue or pleural fluid was examined postmortem in thirty-nine cases. Pfeiffer's bacillus was found in 92 per cent.; most frequently in the bronchi or bronchioles and in the latter situation often in pure culture. Additional evidence presented of the causative rôle of Pfeiffer's bacillus in influenza is as follows: In the pharyngeal secretion of healthy persons obtained during the Bombay epidemic, Pfeiffer's bacillus could only be demonstrated in 18 per cent. of 138 specimens, while during the same months it was found in 75 per cent. of the sputum of influenza patients examined. In experiments with mice, rabbits and guinea-pigs, no lesions characteristic of influenza were obtained by inoculation with Pfeiffer's bacillus intranasally, intraperitoneally or intravenously.

Wassermann Reaction in Tuberculosis.—The serum of seventy patients suffering from tuberculosis was examined by Iyengar by the Wassermann test with the object of finding out if this disease was responsible for a positive reaction. Forty were cases of pulmonary tuberculosis, fourteen were cases of tuberculosis of the lymphatic glands, and sixteen were cases of abdominal tuberculosis. Fourteen out of these seventy cases gave a positive Wassermann reaction, eight of the pulmonary group; three each of the glandular and abdominal group.

Japan Medical World, Tokyo

March, 1922, **2**, No. 3

*Relation of Vagus Nerves to Action of Sinus Venosus; Nature of Inhibitory Action of Heart Beat. K. Ohmori.—p. 61.
Fate of Amino-Acids Permeated in Red Blood Corpuscles. K. Hiruma.—p. 65.
Deformity of Vertebral Column and Treatment with Bamboo Corset. H. Iijima.—p. 68.

Nerve Mechanism of Heart.—Ohmori concludes that the automatic center of the heart beat is not situated in the contractile substance of the muscle. Whatever its mechanism may be, there is no question that it is situated between the muscle and the nerve. At this special mechanism autochthonous stimulation is produced and brings about the normal rhythmic beats. The vagus excitation causes frequent dissimilation stimuli at the automatic center, which interfere with the rhythmication of the automatic later center and produces the dissimilation paralysis. According to the relation of the rhythm by the primary stimulus, there is a time when there is no impetus and the heart muscle is relaxed (pause), or the rhythmic action becomes slow (negative chronotropic action), or there is accelerating action (positive chronotropic action). The decrease of the contractability or negative inotropic action may be due to the fact that while the automatic center has not started the stimulating action the muscle lost a part of excitability.

Lancet, London

April 8, 1922, **1**, No. 5145

*Metabolism: Research at Seaside. L. Hill and J. A. Campbell.—p. 675.
*Amebic Liver Abscess. L. Rogers.—p. 677.
*Ascending Infections of Kidney. K. M. Walker.—p. 684.
*Natural Cure of Common Cold. O. Heath.—p. 688.
Use of Colloidal Gold in Treatment of Neurasthenia. D. E. S. Park.—p. 691.
Case of Fracture of Atlas. E. U. Williams.—p. 692.
Case of Torsion of Hydatids of Morgagni. C. E. Shattock.—p. 693.
*Adenocarcinoma of Small Intestine. J. A. C. Macewen.—p. 693.

Metabolism at Seaside.—The observations recorded by Hill and Campbell were made at a seaside village. The Douglas-Haldane method of indirect calorimetry was employed. A few observations were taken of resting metabolism two to four hours after breakfast and after sitting quietly for half an hour in the open air or in a shed. The results were on an average of 34 per cent. above the basal metabolism measured in closed calorimeters, which is considered to be due mainly to the influence of the open air on body tone. The figures for metabolism obtained while bathing were five, six and seven times as high as the resting figures. Swimming accounted for a great part of this increase. Without swimming the metabolism was greatly raised by the cooling effect of the water causing shivering. The metabolism while paddling was, as a rule, higher than when walking the same distance at the same speed, probably owing to the fact that the water made the work heavier, although at the same time its cooling effect made paddling the more pleasant task. Other experiments were done walking along the sand, first wearing all clothes and a sweater, and secondly in a bathing costume.

Amebic Liver Abscess.—In closing his course of lectures on this subject Rogers reiterates that amebic or tropical liver abscess is an easily preventable disease in the great majority of instances, and the occurrence of amebic suppuration in the liver should cause serious questions in the mind of the medical man in whose hands it has been allowed to develop. In patients coming first under observation with an already formed amebic liver abscess, whenever possible, the treatment of election should be repeated aspirations and subcutaneous injections of emetin in preference to incision, while when such an abscess has eventually to be opened some form of sterile syphon drainage should be used. A little over a decade ago liver abscess was second only to typhoid in its lethal effects on the British soldier in India, causing nearly 100 deaths a year among them, but the death rate has already been reduced to one sixth by the methods Rogers has advocated.

Ascending Infection of Kidney.—Evidence is furnished by Walker which he claims is conclusive that the lymphatic route of infection must invariably be taken into account in considering the pathology of any renal infection. The kidney capsule is an important link in this lymphatic chain, and is the situation in which organisms are most consistently found in cases of ascending infection. In early cases of lymphatic infection of the kidney no organisms are found in the urine. There are reasons to believe that a tuberculous infection of the kidney may take place along a route precisely similar to that followed by pyogenic organisms. These conclusions lay stress on the importance of dealing with any form of infection, however trivial it may appear and they raise the question as to whether decapsulation might not occasionally be beneficial as a means of dealing with ascending infections. They suggest the possibility that repeated infection of the renal capsule may explain the origin of certain forms of chronic nephritis, and that decapsulation might not be without effect on the progress of such a condition.

Natural Cure of Common Cold.—The natural defense against a cold, Heath says, is as follows: On the first day, local exudation; on the second day, either local exudation, if the lesion is still small, or by fever if the lesion is larger. Cure may be effected by these methods in from forty-eight to seventy-two hours from infection, by taking reasonable outdoor exercise for one or two hours on the first or second day as the case may be. If fever supervenes, with sufficiently marked malaise to indicate it, rest for one day in bed is essential. If cure is not affected by one of these reactions, pus formation will occur, and the cure will have to take its own time.

Adenocarcinoma of Small Intestine.—In Macewen's case the patient, aged 20, was seized with violent pain in the abdomen and persistent vomiting. He had no previous illness save occasional "cramps in the stomach." The abdomen was much distended, tympanitic all over (but liver dulness normal) and very tender. The temperature was 100 F. Laparotomy was performed, and the abdominal cavity found to contain copious free fluid and liquid fecal matter. A tumor the size of a small walnut projected from the side of the upper ileum, and a small perforation was found at the base of the tumor, which was pedunculated, the pedicle being attached to the inside of the bowel. Apparently the tumor had caused ulceration of the wall of the intestine and had then been protruded through the aperture. A second similar pedunculated tumor was found in the intestine several inches lower down. The abdomen was rapidly cleaned out and enterostomy performed, but the patient died a few hours later. The tumor was an adenocarcinoma.

Medical Journal of Australia, Sydney

Feb. 25, 1922, **1**, No. 8

Human Isohemagglutinins: Their Distribution Among Some Australian Aborigines. A. H. Terbutt.—p. 201.
Bone Grafts. H. R. G. Poate.—p. 209.
*Intussusception Limited to Appendix. R. D. McIntosh.—p. 216.

Intussusception of Appendix.—In the case reported by McIntosh there was complete inversion of a gangrenous appendix into the cecum; the inversion was strictly limited to the appendix.

March 4, 1922, **1**, No. 9

Cesarean Section. R. H. Morrison.—p. 229.
Cesarean Section. H. C. Lloyd.—p. 231.
Jean Paul Marat. C. MacLaurin.—p. 233.
Hymenolepis Diminuta in Human Hosts. G. H. Burnell.—p. 236.
Medical Treatment of Visceroptosis. R. A. Parker.—p. 237.
Post-Anesthetic Vomiting. V. MacDonald.—p. 240.
*Case of Rhinolith Presenting Unusual Features. R. Francis.—p. 240.

Rhinolith of Large Size.—The rhinolith in Francis' case measured, when pieced together, approximately 6.25 cm. (two and a half inches) in length and 2.5 cm. (one inch) in width and weighed approximately 12.8 gm. (215 grains). Examination suggested that the rhinolith in question proceeded from a blood clot in the nasal region which had become calcified.

ulletins de la Société Médicale des Hôpitaux, Paris

March 10, 1922, **46**, No. 9

raphic Control of Palpation Findings of Systolic Pulse Pressure. A. Mougeot and P. Petit.—p. 424.
iagnosis of General Paresis. R. Targowla and Badonnel.—p. 433.
alvular Insufficiency Develops Under Mercurial Treatment. G. Caussade and A. Foucart.—p. 437.
xygen in Pulmonary Tuberculosis. P. Armand-Delille et al.—p. 442.
pleen Sign of Incipient Tuberculosis. M. Villaret et al.—p. 445.
accine Therapy of Congestion of Lung. Dufour and Ferrier.—p. 450.
mctin plus Iodin in Lymphogranulomatosis. Idem.—p. 452.
uinidin in Arrhythmia. A. Clerc and P. N. Deschamps.—p. 453.

Early Diagnosis of General Paresis.—In Targowla's case, e sudden mental confusional syndrome in the woman of improved under treatment, and it finally retrogressed cometely. The cerebrospinal fluid, however, showed the charteristics of general paresis, and the course of the case nfirmed that the confusional syndrome and insane tendency wander away from home had been the first clinical manistations of the otherwise latent paresis.

Oxygen in Treatment of Tuberculosis.—Subcutaneous injecons of oxygen have been given systematically by Armandelille in treatment of thirty-two patients with pulmonary berculosis, and he tabulates the resulting changes. This eatment seemed to be absolutely harmless, while the etabolic findings indicate a stimulation of the resisting wers. He thinks that this method might be advantageously mbined with others in treatment of tuberculosis.

Early Spleen Sign of Tuberculosis.—Villaret noted that the adow cast by the spleen had increased in size in certain rsons with vague physical disturbances. It proved later at this enlargement of the spleen was the first clinical sign infection with tuberculosis, before there were any signs of sions in the lungs. Nothing in the history of the cases uld explain the enlargement of the spleen, but several in om two to four weeks afterward had hemoptysis. In others, rious symptoms revealed the tuberculosis. The shadow of e spleen had returned to the normal outline by the fourth fifth month in two thirds of the cases. Percussion now negative, and at necropsy the spleen was usually of normal ze. The enlargement seems to be an early reactional phemenon from transient congestion of the spleen.

Subacute Inguinal Lymphogranulomatosis.—The lymph lands in the right inguinal region had developed several scesses. The man of 28 had had syphilis and malaria, years fore, both apparently entirely cured. The adenitis had sisted the usual treatment, but healed smoothly under netin plus iodin. Seventeen injections of emetin were given, first subcutaneously and then by the vein. Then a change as made to tincture of iodin, from 50 to 80 drops, in milk, the mouth, daily, for thirty days. The cause of the adenitis still a mystery; no portal of entry could be found. Latent berculosis seems most plausible.

Journal de Chirurgie, Paris

April, 1922, **19**, No. 4

peration for Cancer of Uterine Cervix. B. Desplas.—p. 337.
niversal Craniotomy. G. Zorraquin (Buenos Aires).—p. 348.
Vire Treatment of Certain Hernias. P. Moure.—p. 359.

Cancer of Uterine Cervix.—Desplas' illustrations show the rious steps of the Wertheim method, and he discusses the dications, the technic and the after-care. In 85 cases in hich this method had been applied before 1914, there were survivals for over three years and 24 for less than this. e has operated since in 21 cases and there has been no currence in 2 that date from 1914, but there has been recurnce in 2 of the 4 that date from 1919, and 3 of the 7 from 20. He does not ligate the hypogastric artery beforehand, s this does not prevent the uterine artery from bleeding hile it reduces the resisting power of the pelvic zone volved.

Craniotomy.—Zorraquin declares that whenever it is necesry to relieve intracranial pressure we should follow ature's example and make what is practically a large articial fontanel in the bregma region, on the median line. He lustrates the technic for this, and extols the advantages of thus turning back a large bone flap where the skull is most safely opened. The physical and mechanical conditions here favor the intervention and reduce the by-effects to the minimum.

Wire Ring Treatment of Hernia.—Moure refers to umbilical and ventral hernias, and gives an illustrated description of the method he advises, which seems to be working finely. He runs a bronze wire around the opening, about 2 cm. back from the edge, after incising and retracting the skin. The edges are lifted up by an assistant with four forceps, one on each side, and the wire is drawn up tight and fastened, the metal ring thus formed holding the bunched tissues from spreading apart anew, and they form a fibrous plug which completely closes the old opening. The patients can get up early, which is a further advantage of this method. The wire "cerclage" has never caused pain, and, in his ten cases, there has been disturbance later in only two instances. It is easy to pull out the wire at any time after the parts have become solidly adherent.

Médecine, Paris

March, 1922, **3**, No. 6

Cardiovascular Pathology in 1922. P. Ribierre.—p. 405.
*Fever with Heart Disease. Vaquez.—p. 414.
Aviators' Heart. G. Etienne.—p. 420.
*Angina Pectoris. C. Pezzi.—p. 422.
*Spontaneous Slow Rupture of Heart. L. Ramond and E. Baudouin.—p. 426.
*Diagnosis of Cardiovascular Disease. A. Dumas.—p. 432.
Sclerosis of Pulmonary Artery. P. Ribierre and R. Giroux.—p. 437.
Radiology of Pulmonary Artery. E. Bordet.—p. 440.
Acquired Dextrocardia. E. Donzelot.—p. 445.
*Masked Phlebitis. Leconte.—p. 449.
Capillaroscopy. Weiss.—p. 455.
Diagnostic Import of Aleukemic Lymphocytemia. A. Clerc.—p. 457.
*Interstitial Diuretics. L. Blum.—p. 463.
*Gastro-Intestinal Uremia. A. Lemierre.—p. 467.
Anemia in Chronic Nephritis. C. Aubertin.—p. 473.

Fever with Heart Disease.—Vaquez declares that any rise in temperature in the course of any infection in a person with an organic lesion of the heart is liable to be an indication of superposed endocarditis, or at least of functional insufficiency of the heart, entailing infarcts, etc. These complications are usually not recognized at first; the infection runs its usual course, and not until several days later do the heart disturbances become manifest. The fever may persist after apparent recovery from the infection. By supervising the heart carefully we may be able to ward off insufficiency by beginning treatment with heart tonics at once.

Angina Pectoris.—Pezzi has encountered cases of angina pectoris without any retrosternal pain, merely the radiating pain in shoulder, arm and hand and in the muscles of the neck. There may also be reflex vasomotor or secretory phenomena or eructations. When there is no history of preceding attacks of angina pectoris, the diagnosis may be difficult, and yet this form is often particularly grave. Jonnesco's success with severing the nerve tracts conveying the pain suggests that medical means to reduce the sensitivity of the innervation in this region might be advisable, as reflex action, through this nerve, seems liable to maintain and aggravate the cardiac lesions. Quinin is useful here, he says; it has a sedative and paralyzing action on the center in the medulla oblongata for the pneumogastric nerve, on the nerve itself, and on the accelerators. It thus is an antagonist to epinephrin, and it may be regarded as a specific sedative for the vegetative nervous system. Hence it is particularly useful in angina pectoris, as has long been known although the mechanism of its action was not understood till recently. He gives tentatively up to 60 cg. or 1 gm. of quinin daily, fractioned, for a week, and then suspends for a week. The quinin sometimes gives remarkable results, reducing not only the pain and reflex phenomena, but even modifying the tachycardia which may accompany the angina pectoris tendency.

Spontaneous Rupture of the Heart.—Ramond suggests that it may be possible to suture the heart when the tear is of slow and gradual development. In thirty-two recently published cases, this slow development was known in 29 per cent., as also in a case personally observed. The symptoms in all forms are those of a hemopericardium.

Investigation of the Blood Pressure.—Dumas expatiates on the instructive information to be derived from comparison of the findings with the sphygmograph and the oscillometer applied both to the arm and the foot. He describes and interprets the dual findings in several groups examined, with or without a high blood pressure and lesions of heart or aorta.

Masked Phlebitis.—Leconte has found that attenuated, atypical phlebitis is as liable to be followed by embolism and other complications as the most pronounced form of the disease. It is even more likely to induce embolism as—not being recognized—immobilization of the limb is not enforced. Embolism may be the first sign of the phlebitis. This is particularly liable after childbirth and after abdominal operations. The latent phlebitis usually warns of its presence by slight chills, fleeting pains in one leg or iliac fossa, slight rise in temperature, and abnormal and persisting acceleration of the pulse. These symptoms should be heeded, and immobilization enforced. Syphilitic phlebitis is rare; the onset is insidious and palpation is the only means to reveal the hard slightly tender cord, nonadherent. Embolism is unknown with this, but it may have multiple localizations and recurrences. Vaquez' subacute venous septicemia is most common with a tendency to varicose veins. There may be intervals of a few months between the attacks, but the infection persists tenaciously, and one limb after the other may become involved. These are the cases in which the prolonged immobilization from fear of embolism entails so much atrophy of muscles, retraction of tendons, false ankylosis, etc. Phlebitis may occur with pain as the first symptom; this is especially likely in influenza, in rheumatism and early in tuberculosis. In other cases, phlebitis develops suddenly in consequence of physical strain, sometimes so slight as to escape the memory. Embolism is not known with this traumatic phlebitis, but the course is liable to be long and the use of the limb permanently impaired. This phlebitis from physical exertion may occur in the pregnant. It is possible that dystrophia of vessel walls may be responsible for this injury from physical exertion. This would explain the tendency to varicose veins and phlebitis in certain families.

Interstitial Diuretics.—Blum applies this term to diuretics which act by drawing fluid out from the interstices in the tissues, not by acting on either the heart or the kidneys. This group of diuretics includes the salts of potassium and calcium, and the chlorids are the most potent in this line. They are effectual in edema of all kinds except those for which the heart is responsible. In all noncardiac forms of edema, and with serous effusions, calcium chlorid is effectual. It has to be given in large doses, beginning with 15 gm. and increasing to 25 or 30 gm. daily. In chronic cases the effect may not be apparent for three or five days. It is indispensable to drop salt from the diet. The diuretic action is due to the displacement of sodium by the calcium. As the sodium is cast off, the water retained is cast off with it. Even with cardiovascular dropsy, the association of calcium chlorid with digitalis and theobromin is often useful, reenforcing the action of these drugs.

Gastro-Intestinal Uremia.—Lemierre remarks that the vomiting and diarrhea which sometimes accompany acute exacerbations of nephritis with edema are ascribed now to retention of sodium chlorid. The vomit and stools contain abnormally large proportions of salt. These disturbances appear and subside abruptly, but chronic digestive disturbances may be of another type, result of irritation from vicarious elimination through the digestive tract of nitrogen, and especially of urea, which the kidneys are incapable of taking care of. This gastro-intestinal uremia is a manifestation of retention of nitrogen in the blood. Whether of medical or mechanical origin, it may be the first sign of hitherto unsuspected kidney disease. Anorexia is the warning symptom; at first a loss of appetite only for meat and fish, but gradually the anorexia becomes complete for all foods. With intense uremia, nothing may be taken but a little water, and even this may be cast off by the stomach at once. The mouth is usually dry, the tongue thick and doughy, the breath fetid, or there may be excessive secretion of saliva with high urea content. In Renon's case, the output of urine and of urea in the urine dropped as the sialorrhea increased. The gastric dyspepsia from uremia has often been mistaken for cancer. Instances are known in which the digestive uremia proved fatal in two or three weeks. The kidney disease in these cases had been well tolerated until something occurred to upset the balance. The prognosis is grave, as a rule, unless it may be possible to break up the uremia by acting on a calculus or enlarged prostate, or to reduce the uremia within bearable bounds by improving conditions by bed rest, a fruit and vegetable diet, etc.

Presse Médicale, Paris

March 29, 1922, **30**, No. 25

*High Fat Diet in Treatment of Diabetes. F. Maignon.—p. 265.
Traumatic Ophthalmoplegias. F. Terrien.—p. 267.
Anterior Apophysitis of Tibia. P. Feutelais.—p. 270.

Fat in the Diet of Diabetics.—Maignon has been teaching for nearly fourteen years the importance of a high fat diet in the treatment of diabetes. In 1908 he was impressed with the fact that one dog with the severest form of spontaneous diabetes, rapid emaciation, intense glycosuria and grave protein denutrition threw off all these symptoms in a few days when the animal was fed exclusively on oil. Fats seem to be foods *par excellence* for the diabetic. They are the only ones that do not generate sugar, while their potential energy can be totally utilized. His years of experience have confirmed this beyond question, as he relates in detail. He says that the benefit from fasting in diabetes is due mainly to the fact that this is equivalent to a fat diet, as the body consumes its reserves of fat. The only contraindication is when the pancreas is so seriously diseased that it is unable to take care of the fat ingested. He hails the recent publication of Newburgh and Marsh (mentioned editorially in The Journal, April 15, 1922, p. 1126), as confirming his own experience and deductions. The fat is given in the most digestible form, in an emulsion, adding an alkali to keep the urine reaction normal, while keeping protein down to the indispensable minimum, with more or less complete abstention from carbohydrates. The emulsion he prefers is made by agitating at intervals during forty-eight hours a mixture of 600 gm. of sesame oil and 300 gm. of distilled water with 5 c.c. of sodium hydroxid. This is then set aside for forty-eight hours and the supernatant emulsion is decanted, leaving the water in excess. Then he adds 20 gm. of neutral glycerin, flavored with 2 cg. of vanillin and half a drop of essence of bitter almond. In his extensive experience, the majority of diabetics assimilated fat perfectly, and the acetone diminished. This observation has convinced him that lesions in the pancreas in diabetes are not so common as generally assumed. Clinical facts refute Allen's and others' statements to the contrary. Petrén has recently reported excellent results from occasional pure fat diet days in treating diabetes. The aim of treatment with menacing coma, he reiterates, is not the acidosis but the nitrogen denutrition, and for this there is nothing more effectual than a high fat diet, with enough sodium bicarbonate to combat the hyperacidity of the urine. He adds that he has never had coma develop in the numerous cases of diabetes, even of the gravest type, with intense denutrition and high glycosuria and acetonuria, when the patients were kept on this high fat diet.

Revue de Chirurgie, Paris

1921, **59**, No. 12

*Fusion of Radius and Ulna. R. Beuchard.—p. 629.
*Acute Gallstone Cholecystitis. F. Papin.—p. 648.
*Peptic Ulcer. Gelas.—p. 668.

Primary Radius-Ulna Synostosis.—Beuchard gives the clinical and roentgenographic history of two cases in which the upper ends of the bones of the forearm were fused to form a single broad shaft. In his first case, both arms of the washerwoman of 71 showed this malformation, and her father is said to have the same. The hands are held in pronation; supination is impossible. Her son, a man of 47, has the same synostosis, and in one of his eight children, now 11, supination is impossible with the right hand. Flexion of the elbow is somewhat hampered in all these cases, but the strength of the arm is not impaired. In twenty of the seventy-five known cases an operation was attempted, but only one instance of complete success is known. In the others, the results were insignificant in proportion to the tedious operations required.

Acute Gallstone Cholecystitis.—Papin advocates removing the gallbladder at once, on the same principle as in acute appendicitis. The contraindications are practically the same as with the latter. Especially in the obese, or when old adhesions interfere, it may be wiser to merely incise the gallbladder, as also when the cholecystitis is accompanied with jaundice and enlargement of the liver or pancreas or both. He discusses the technic and compares the experiences of a number of surgeons in Europe and America.

Peptic Ulcer After Gastro-Enterostomy.—Gelas remarks that gastrojejunal peptic ulcer is generally consecutive to an ulcer in the pylorus region. Recent writers have emphasized the exceptional frequency of peptic ulcer after operations excluding the pylorus. Even pylorectomy does not exclude this complication. The hyperacidity may be a manifestation of the new wave of ulceration, and may not be its cause as often assumed. The cause inducing the tendency to ulceration is still a mystery. Equally mysterious is the localization of the ulcers at a few given points, especially at the outlet of the stomach, the pylorus and the new gastrojejunal opening. The modern tendency in treatment of a peptic ulcer is complete excision.

Revue Franç. de Gynécologie et d'Obstét., Paris

February, 1922, **17**, No. 2

*Carcinomas of the Ovary. L. Aubert.—p. 81.
*Conservative Treatment of Uterine Fibromas. F. Wetterwald.—p. 93.

Carcinoma of the Ovary.—In a case reported, Aubert found that the malignant disease had spread beyond what could be resected, so after the ovariectomy he gave a course of deep roentgen-ray treatment, and the woman of 55 seems now permanently cured. The tumor had been regarded as a harmless fibroma and had been given a previous course of roentgen exposures. This, he explains, is the great danger of these physical measures in treatment of pelvic tumors, wasting precious time before the malignant nature is recognized.

Fibromas.—Wetterwald declares that women with fibromas are of the congestion and cellulitis type, prone to vasodilation and dystrophia of the connective tissue. This tendency explains the hemorrhages and pains, and it is possible to combat and overcome this predisposition to hemorrhage and pains by massage and gymnastic exercises to reduce congestion. Light massage of the abdomen and abduction of the femur are usually all that is needed. Active abduction of the thigh will arrest or moderate uterine hemorrhage in 80 or 90 per cent. of the cases. These stimulate the cardiovascular reflex and banish the edema around the uterus and adnexa, and the general health improves. The treatment is harmless, and in two-thirds of the cases will tide the patient along until the menopause automatically puts an end to these disturbances. The fibroma does no harm, as a rule, if complications can be warded off.

Schweizerische medizinische Wochenschrift, Basel

March 16, 1922, **52**, No. 11

*Ear, Nose and Throat in General Practice. A. Schönemann.—p. 269.
Sepsis Post Abortum After Wearing Intra-Uterine Pessary. M. Wetterwald.—p. 276.
Iodin in Prophylaxis and Treatment of Goiter. E. Baumann.—p. 280.
*Congenital Dropsy. O. Koegel.—p. 282.
*Medical Impressions of America. K. Schlaepfer.—p. 284. Conc'n.

Ear, Nose and Throat Disease in General Practice.—Schönemann's profusely illustrated article discusses chronic otitis media, and describes favorable experiences with insufflation of an antiseptic powder directly into the middle ear through the eustachian tube. He has been applying this method in treatment of otitis media for nine years, and no one has ever complained of serious by-effects.

Congenital Dropsy.—Two stillborn infants presented ascites and edema with proliferation of myeloid tissue in spleen and liver. The mother of one had pregnancy nephritis; the other mother was syphilitic.

Medical Impressions of America.—Schlaepfer concludes this long review of different aspects of surgery in this country as he studied them in the various medical centers: "Everywhere, wherever we look, we see in America medicine and the medical sciences developing lustily. . . . New problems are constantly being solved in the most diverse specialist domains. Everywhere progress is being realized—Vorwärts gehts allerorten!" Previous instalments of Schlaepfer's "Impressions" were mentioned on page 1340. See also p. 1500.

Pediatria, Naples

April 1, 1922, **29**: No. 7

*Vaccine Therapy in Typhoid in Children. L. M. Spolverini.—p. 289.
*Pathology of Nervous System in Children. G. Berghinz.—p. 301.
*Primary Diphtheria of the Anus. M. Mallardi.—p. 318.
Protein Therapy for Intolerance of Milk. S. de Stefano.—p. 321.

Vaccine Therapy of Typhoid in Children.—Spolverini gave vaccine treatment to 113 children in the five years ending with 1919; protein therapy in 21 cases, and merely the ordinary treatment in 61, mostly the mildest cases. Complications developed in about 20 per cent. in each group, but in the vaccine treated cases they were predominantly complications not directly connected with the disease, while in the other two groups they were mostly manifestations of the typhoid. The gravest cases were given the vaccine therapy as a rule, but the death rate in each group was about the same, namely, 8 in 113; 4 in 61, and 2 in 21. The vaccine was most effectual, the earlier in the disease it was given. In 35 of the 113 there was prompt resolution of the process by a crisis, the third to the fifth day; the improvement was more gradual in 53, and in 25 no clinically appreciable effect could be detected.

Pathology of the Nervous System in Children.—Berghinz illustrates a case of symmetrical gangrene of the feet in a 12 months' infant with inherited syphilis. Necropsy revealed defective development of the spinal cord. He describes further two cases of congenital myatonia in a boy of 2 and girl of 7. Berghinz has encountered only 2 cases of mirror writing in twenty-five years of practice. One is in a girl with right hemiplegia from poliomyelitis; she writes with her left hand, writing mirror or normally at will. The other case is in a young woman with verbal and psychic deafness.

Primary Diphtheria of the Anus.—The infant of 22 months recovered under antitoxin treatment when the severe diphtheric process at the anus was discovered and differentiated. Both diphtheria bacilli and streptococci were cultivated from the lesion.

Policlinico, Rome

March 13, 1922, **29**, No. 11

Status of Fight Against Malaria. M. Sella.—p. 345. Conc'n No. 12, p. 383.
Scarlet Fever in Rome. P. Sorgente.—p. 353.
*Sinus Complications of Ear Disease. G. Fantozzi.—p. 354.

Sinus Complications of Otitis.—The rebellious bilateral otitis in the youth of 15 was of nearly three years' standing, when headache became almost continuous, with other symptoms suggesting septic thrombophlebitis of the lateral sinus. This was incised and the clots removed, and a fenestrated fine rubber tube was introduced into each end of the sinus, and a right-angle glass tube fitted on each end of the drain tube. Irrigation with physiologic saline was kept up for two or three days, and recovery was complete in about a month. The operation on the sinus had followed ten days after a radical operation on the middle ear through an incision back of the ear. A course of arsphenamin by the vein seemed to have aided in the cure. After each injection the headache and the fever subsided for a day. No attempt was made to ligate the jugular vein. When the patient left the hospital, conditions in the other ear seemed to have returned to normal.

March 20, 1922, **29**, No. 12

Three Cases of Miliary Fever. M. Scelba.—p. 377.
*Assimilating Value of Antidiabetic Diets. G. Aiello.—p. 380.

Dietetic Treatment of Diabetes.—Aiello comments on the advantages of estimating the assimilation value in diabetes from time to time, that is, subtracting the total sugar excreted from the total intake.

Feb. 15, 1922, 29, Surgical Section No. 2

*Lymphatic Cyst in Accessory Suprarenal. C. Ansaldi.—p. 65.
*Suture of Carotid Artery. G. Beccherle.—p. 81.
*Wassermann Reaction After Anesthesia. L. Domenici.—p. 92.
Surgical Spleen. G. Fichera.—p. 99. Cont'd.
*Photodynamic Substances for Wounds. L. Torraca.—p. 115.

Lymphatic Cyst Developing from Accessory Suprarenal.—In connection with an operative case, in a man of 44, Ansaldi discusses retroperitoneal cysts in general, with the bibliography of recent years.

Suture of Carotid Artery.—The hemorrhage occurred the second day after the minute shell wound of the artery, and the suture was successful and without by-effects.

The Wassermann Reaction After General Anesthesia.—Dominici tabulates the findings in 37 cases after chloroform, 12 after ether and 11 after spinal anesthesia. The operations had been done for a wide variety of lesions in supposedly nonsyphilitics, and the response was invariably negative except in 4 who had given a positive response before the operation.

Action of Quinin and Methylene Blue on Healing of Wounds.—Torraca found these two drugs the most active of the fluorescent chemicals that have a photodynamic action. By this term is meant the activation of their properties by light: They have no toxic action in the dark, but become toxic for infusoria, etc., after exposure to light. His tests were made on guinea-pigs given a daily injection of 1 c.c. of a 1:1,000 solution of quinin or of a 1:100,000 solution of methylene blue, after a superficial lesion had been induced. The difference in the percentage of area healed over by the eighth and the twelfth days was striking in the animals kept in diffuse daylight or in the dark thereafter. Quinin seemed more potent, and especially at this concentration; stronger solutions were less effectual, as also of the other photodynamic substances tested.

Riforma Medica, Naples

Feb. 13, 1922, 38, No. 7

*Isolation of Antigen plus Antibody. G. Izar and G. Caruso.—p. 145.
*Calcium Chlorid and Dechloridation. V. Susanna.—p. 146.
Subhepatic Appendicitis. O. Cignozzi.—p. 147.
Treatment of Superficial Cancer. F. Pulvirenti.—p. 150.
Viscum Album in Therapeutics. P. Piccinini.—p. 155.

Isolation of Antibodies from Immune Serums.—Izar has demonstrated that by adding doubly distilled water to an immune serum, the antibodies separate out. He now reports similar research on mixtures of antigens and antibodies. The precipitate obtained by centrifugation and addition of distilled water retains the power of fixation of complement.

Calcium Chlorid as a Diuretic.—Susanna was disappointed in the action of calcium chlorid as a diuretic; the secretion of urine was not modified by it in the majority of his tests. There was nothing to indicate the "dechloridation" which others have reported under it.

Revista Española de Medicina y Cirugía, Barcelona

January, 1922, 5, No. 43

*Indications for Operating with Gastric Ulcer. E. Ribas Ribas.—p. 1.
Wolff-Eisner and His Work. J. B. Darder-Rodés.—p. 11.
Cytology of Pleural Effusions. Remigio Dargallo.—p. 19.
Intestinal Infections. A. Salvat Navarro.—p. 21.
Precipitation with Acetone of Immune Serums. P. González and M. Armangué.—p. 28.

Gastric Ulcer.—Ribas' illustrations and record show the increasing trend to more radical operations in cases of gastric ulcer in recent years, and he draws the balance sheet for and against operative treatment. It seems to be established now, he says, that while gastro-enterostomy is effectual treatment in ulcers and stenosis of the pylorus and prepyloric region, yet it does not answer alone for ulcers of the lesser curvature. These require radical resection, he continues, saying that this is not the serious operation that many still believe.

Semana Médica, Buenos Aires

Feb. 16, 1922, 29, No. 7

*Cholesterin in Relation to Gallstones. J. Servetti Larraya.—p. 241.
Tuberculin in Treatment of Asthma. J. J. Viton.—p. 257.
Death Rate in 1921 from Influenza at Rosario. J. B. Valdes.—p. 259.
Necessity for Hospitalization of Typhoid Cases. M. G. Lebredo (Havana).—p. 271.

Feb. 23, 1922, 29, No. 8

Social Importance of Psycho-Physiologic Exploration of Organs of Sense. J. Ramón Beltrán.—p. 277.
Diverticulum in Duodenum; Three Cases. J. Gutiérrez.—p. 309.
Bismuth to Promote Tolerance of Mercury. A. Stagnetto López.—p. 315.
Social Service. V. Delfino.—p. 315.

Cholesterin in Relation to Gallstones.—The ratio between the cholesterin in the blood and in the stools was ascertained in a number of cases of gallstones. The findings are tabulated, with other details, and the physiologic and pathogenic rôle of cholesterin is discussed.

Siglo Médico, Madrid

March 4, 1922, 69, No. 3560

*Congenital Goiter. J. Bravo y Frias.—p. 225.
Treatment of Gonorrhea in Women. Sicilia.—p. 229.

Congenital Goiter.—There had been ten children born to the family, and five of them had congenital goiter although nothing of the kind was known in the family otherwise, and goiter is not endemic in that region. Bravo gave the 2 months babe treatment for syphilis, as both parents responded positively to the Wassermann test, although the father's syphilis was of thirty-two years' standing. No benefit was apparent from the specific treatment, and the child was losing weight. A change was then made to antithyroid treatment, and then improvement was rapid and amounted to an actual cure. This treatment was kept up for twenty days each month for six months. The only other surviving child with congenital goiter is a girl, now 11. He does not know of any similar instance of familial sporadic congenital goiter on record, and the series of five cases in this family seem to exclude a syphilitic origin. If syphilis had been responsible, the syphilitic nature would have become evident by this time in the girl of 11.

Archiv für Verdauungs-Krankheiten, etc., Berlin

February, 1922, 29, No. 3-4

*Protein Therapy of Gastric Ulcer. G. Holler.—p. 123.
*Effect of Pituitary Extract. H. Gorke and E. Deloch.—p. 149.
*Quantitative Test for Pepsin. L. Jarno.—p. 164.
Alimentary Toxicosis in Adults. C. Funck.—p. 167.
*Formaldehyd Titration of Albumin in the Stomach. O. Speidel.—p. 171.
*Sugar Metabolism. R. Offenbacher and A. Hahn.—p. 193.
*Influence of Heat on Stomach. L. v. Friedrich.—p. 220.
*Palpation of Abdominal Aorta. F. Schilling.—p. 235.

Cure of Gastric and Duodenal Ulcer by Protein Therapy.—Holler announces that he was the first to apply protein therapy in treatment of gastric and duodenal ulcer, and that his success with it has thrown new light on the etiology and cure of these lesions. This article, he states, is the first of a series reporting the results of his observations on an extensive material in the last nine months. He is assistant at the Second Medical Clinic at Vienna, in charge of Ortner. Protein bodies parenterally injected act by their albumin content, by the colloidal complex, or by some specific element, or by raising the temperature. The aim should be to select some protein body for injection that will combine all of these potent factors. The best protein body for the purpose is still undecided. He used milk or dysentery toxin, or a proprietary autolysate of *Bacillus prodigiosus* and staphylococci which, he says, seems to have a special affinity for nerve tissue. The protein body was injected into a muscle or vein; the general reaction to intravenous administration was stormy but never dangerous. During the war, one man with tormenting gastric ulcer seemed to be cured at once of the ulcer by an intercurrent malaria. From five to nineteen injections were made in the five typical ulcer cases of which the details are given. Each forms a biologic experiment which confirms, he asserts, the relations between the vagus and the ulcer, the parenterally injected protein body inducing a focal reaction in the focus of inflammation and in the nerves suffering from the latter. The injection is followed by an abrupt drop in the total acidity while the pepsin and secretion and the temperature run up. In one of the typical cases charted there was no further spontaneous pain after the first injection, but the tenderness of the left upper epigastrium persisted till after the fifth injection; the man of 37 has had no further disturbances since, without restrictions in diet. Holler regards the anacid hypersecretion that follows the parenteral injection as decisive testimony of the focal reaction in the innervation of the stomach. This innervation soon became so stabilized by the injections that in two weeks it became impossible to elicit an abnormal secretory reaction by either mechanical or digestive means.

Action of Pituitary Extract on the Digestive Tract and Blood.—The extract of the posterior lobe seemed to increase the tonus of the stomach and bowel, and the ferment, bilirubin and cholesterin content of the blood, while reducing secretion in the salivary glands and pancreas, and the production of bile, in the majority.

Simple Test for Pepsin.—Jarno commends the modification of Gross' sodium acetate test as reliable and extremely simple. He uses two solutions of casein, a 1:1,000 and a 5:1,000, dissolving 1 gm. of the casein with 50 c.c. of decinormal sodium hydroxid, without heating. He then neutralizes with about 35 or 40 c.c. of hydrochloric acid. When neutralized, he adds 500 c.c. of decinormal hydrochloric acid. This causes a heavy precipitate which dissolves again on shaking the vessel. The solution is then diluted with distilled water to make 1 l. A scrap of thymol is added to prevent mold. A 5:1,000 solution is made also in the same way, without heating. Four test tubes are used for the test, I and II for equal parts of the gastric juice and the strong or the weak casein solution; III and IV for equal parts of ordinary water and the two solutions. After standing for fifteen minutes at room temperature he adds to each tube one large or two small drops of a 20 per cent. solution of sodium acetate. If all four tubes are turbid, there is no pepsin present; if both I and II are limpid, there is a four plus proportion of pepsin present. In the normal, the proportion is three plus. Tubes III and IV are the controls.

Fate of Protein in Stomach.—Speidel has had the opportunity to study the digestion of albumin in the stomach in a woman with a gastric fistula. After taking the test meal by the mouth, 100 c.c. of stomach content was obtained through the fistula the fifteenth, thirtieth and fortieth minutes. In a number of other patients the stomach contents were obtained by the usual technic, and the formaldehyd titration findings in all are tabulated. Among the practical results of the research are the confirmation of the improvement in gastric secretion and proteolysis after administration of hydrochloric acid with pepsin, in cases of achylia and anacid gastritis.

Alimentary Glycemia as Test of Sugar Metabolism.—After drinking 50 gm. of glucose dissolved in 300 c.c. of tea, the sugar content of urine and blood was determined every hour. The findings are tabulated from 8 persons with normal metabolism, 5 neurasthenics, 10 with endocrine disturbances, and 30 with nephritis. Among the practical conclusions is that the sugar content of the blood, fasting, is not of material import for the prognosis. On the other hand, 4 died of the 10 with exceptionally prolonged hyperglycemia (from two to four hours) after the alimentary test, and one now is in very bad condition. Only 2 in this group are doing well. The writers urge others to study in connection with the ultimate outcome this protracted hyperglycemia after ingestion of 50 gm. of glucose. With neurasthenia and in some cases of exophthalmic goiter, there is usually a pronounced hyperglycemia reaction and possibly glycosuria, but they rapidly subside to the preceding normal sugar content of the blood. When there is hyperglycemia, fasting, in exophthalmic goiter, then the response to the alimentary test is like that with the deranged metabolism in diabetes. He thinks that by this test we can classify different forms of exophthalmic goiter better than has been possible hitherto.

Influence of Heat on the Stomach.—Friedrich had the patient swallow a narrow duodenal tube to the 50 cm. mark, and then drink 300 c.c. of a 5 per cent. solution of alcohol. Every ten minutes 15 c.c. of stomach contents was aspirated, the patient seated throughout the tests, and refraining from swallowing to avoid admixture of saliva. The whole procedure was repeated with heat applied to the stomach, cataplasms or a hot water bottle or electric pad. In sixteen persons thus tested the response was always practically the same, regardless of whether the stomach was sound or diseased, namely, the secretion in the stomach did not seem to be modified by the heat, applied beforehand or at the time of the tests. In seven of the subjects the secretion reached its height earlier without the heat than with it. The motor functioning, however, seemed to be stimulated by the heat. This was marked in one subject into whose stomach hot air had been insufflated through the tube. The beneficial action of local application of heat is due to the acceleration of the motor functioning, and the relaxation of muscular spasms under its influence. It also may relieve by modifying reflex action.

Palpation of Abdominal Aorta.—Schilling has found it possible to palpate the viscera, and here describes how he investigates the aorta by this means. The thinner and leaner the abdominal wall the more instructive the palpation findings. He describes the technic and interpretation of the findings.

Deutsche medizinische Wochenschrift, Berlin

Feb. 16, 1922, **48**, No. 7

Degeneration and Regeneration. P. Ernst.—p. 215.
Organotherapy in Diabetes Mellitus. Loening and Vahlen.—p. 217.
Flocculation and Turbidity Reactions in Syphilis. E. Meinicke.—p. 219.
Frequency of the Wassermann and the Flocculation Reactions in Tuberculosis in Children. E. Rüscher.—p. 221.
Arsphenamin Plus Calcium Therapy in Syphilis. Pulay.—p. 223.
Treatment of Tuberculosis with Colloidal Gold. E. Levy.—p. 223.
*Nonprotein Nitrogen in the Blood in Infections. E. Cohn.—p. 226.
Use of Acridin in Vaccination Lymph. E. Illert.—p. 227.
Traumatic Laceration of Cardiac Valves. G. Brandis.—p. 229.
Errors in Chemical Analysis of Blood and Urine. Müller.—p. 229.
Endocrine Glands in Relation to Anomalies of the Teeth and Jaws. W. Petzel.—p. 231.
Significance of the Mongolian Spot. Leven.—p. 231.
Pathogenesis and Therapy of Rachitis. R. Fischl.—p. 232. Conc'n No. 8, p. 261.
Polypous Tumors of Female Genitalia. Liepmann.—p. 234.

Nonprotein Nitrogen in the Blood in Croupous Pneumonia, Scarlet Fever, Measles and Diphtheria.—Cohn examined 55 patients with pneumonia, making 63 determinations. The highest values in the various patients were: under 35 mg., 7 patients; 36-45 mg. (slightly above normal), 14; over 45 mg. (a marked increase), 34. In 50 scarlet fever patients: under 35 mg., 30; 36-45 mg., 14; over 45 mg., 6. In 36 cases of measles the findings were: under 35 mg., in 16; 36-45 mg., 14; over 45 mg., 6. The 40 diphtheria patients showed these values: under 35 mg., 23; 36-45 mg., 9; over 45 mg., 8. In pneumonia, the residual nitrogen values did not depend on the proportion of lung involvement, for over half of the patients in whom several lobes were involved presented normal values. In one case in which at first only one lobe was involved, the residual nitrogen finding was 72 mg., where several days later, when three lobes were involved, only 63 mg. was found. Nor did the temperature show a parallelism, since there were normal values with high temperature and high values with moderate temperature. Especial attention was paid to the kidneys, and it was found that febrile albuminuria was associated just as frequently with high as with low nitrogen values; likewise cylindruria and hematuria. The blood nitrogen does not seem to be dependent on the duration of the disease process. As to whether or not high nitrogen values suggest an unfavorable prognosis in all infectious diseases, as some have asserted, Cohn was able to note that in influenza only a sudden marked increase of nitrogen could be regarded of unfavorable omen; a single high finding could not be so interpreted. It was noted by Cohn, as previously by other investigators, that nitrogen values frequently drop after the crisis is passed.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1922, **168**, No. 3-6

*Cancer of the Rectum. F. Mandl.—p. 145.
*Surgery of the Brain in North America. K. Schlaepfer.—p. 289.
*Arteriomesenteric Occlusion of Duodenum. W. Reinhard.—p. 319.
Surgical Anatomy of Portal Vein System. F. J. Walcker.—p. 354.
*Malignant Degeneration of Gastric Ulcer. F. Peyser.—p. 409.

Cancer of the Rectum.—The 144 pages of Mandl's study of this subject are based on 779 cases in Hochenegg's service, including 469 in which the rectal cancer was removed by resection of the sacrum. In addition to these nearly 800 cases, nearly as many more were seen in private practice or in consultation, so that the etiology, symptoms and treatment are discussed on a basis of 1,500 cases. Of the 333 radical sacral operations, 112 of the patients were living after three years: 33.6 per cent. after three years; 25.8 after five, and 10 after ten years. In the 779 clinic cases, 67.6 per cent. were men, and 3 of the women were under 20, and 3 men and 2 women between 20 and 25; 13 men and 9 women were between 25 and 30; 29 men and 36 women between 30 and 40, and 27 men and 11 women were between 70 and 80. There were hemorrhoidal nodules only in 7.2 per cent., and there was a history of chronic constipation only in 3.2 per cent., but polyposis was evident in 12 per cent. In 13 cases the cancer seemed to have some connection with a pregnancy; in 4 the first symptoms were noted early in a pregnancy and in 2 they had just preceded it. In 7 cases there was another cancer elsewhere, and an inherited predisposition was evident in 10.7 per cent. The superficial diagnosis of "intestinal catarrh" or "hemorrhoids" had been made in 66 cases, and thus the patient was doomed by the physician's heedlessness; this was particularly likely to occur in the younger subjects. In 223 cases the first symptom to attract attention was a sudden rebellious diarrhea, or sudden constipation; in 175 cases blood and mucus in the stools and in 171 cases pain at defecation were the first symptoms; in 16, pain in the abdomen and oppression; in 18, sacral pain; cramps in 10; loss of weight in 11; disturbance in micturition in 9, and a sensation of a tumor in the rectum in 9. In 48 cases there was no loss of weight. The interval between the first symptoms and the operation was at least thirteen months in 138 cases; in 83 it was over a year and a half; in 22 less than a month. The outcome with the different technics is described and compared with others' experience. Mandl warns against roentgen exposures preliminary to operative measures, and states that the effect of either roentgen or radium treatment seemed to be deplorable. [A less complete report by Mandl was summarized recently, p. 1175.]

Surgery of the Brain in the United States.—Schlaepfer relates his experience in this country in studying surgery of the brain last year with Cushing, Frazier, Dandy and others, and reviews 103 of their more important publications and their technic. He ascribes the great progress realized here in the last two decades "mainly to the fact that both diagnosis and treatment were in the hands of the same neurosurgeon. This and the incomparable mastery of general anesthesia have advanced the treatment of brain affections to such a point that, in their hands, operative intervention on the brain or spinal cord does not represent any more of an operation than an exploratory laparotomy with us." Schlaepfer is chief of the surgical clinic of the University of Zurich.

Arteriomesenteric Occlusion of the Duodenum.—Reinhard insists on the necessity of distinguishing between a neurotic and an organic form of the occlusion. Acute dilatation of the stomach is always combined with atony or paralysis of the upper bowel, so that the occlusion can easily occur. With the organic form, there is dilatation of the stomach at first, and stomach cramps show the efforts the upper digestive tract is making to force the contents past the obstruction. Change of position, combined with continuous drainage of the stomach, preferably through the nose, with efforts to stimulate bowel functioning, and profuse saline infusion, subcutaneously and by the vein and rectum are indicated. As a last resort, a laparotomy is justified, simply drawing the bowel out to release it from the traction and replacing it at once, then applying position treatment and aspiration drainage. With an atonic dilated stomach, a gastro-enterostomy is futile but it is indicated if the stomach is vigorous. The prognosis grows rapidly graver the longer the occlusion lasts, and the patient grows weaker and succumbs to heart failure. In his ten cases described, only two were saved, and he remarks that if relief cannot be obtained by conservative measures there is not much hope from operative.

Gastric Ulcer-Cancers.—Peyser found 28 pure gastric ulcers; 24 cancers and 1 sarcoma in 53 cadavers examined since the war. The cancers had all been correctly diagnosed, and 4 of the pure ulcers had been assumed to be malignant.

Jahrbuch für Kinderheilkunde, Berlin

February, 1922, **97**, No. 3-4

*Active Immunization Against Diphtheria. H. Opitz.—p. 123.
*Treatment of Spasmophilia. K. Scheer.—p. 130.
*Predigestion of Cow's Milk Albumin. S. Rosenbaum.—p. 147.
*Food Elements Influencing Utilization of Fat. G. Frontali.—p. 162.
*Duodenal Ulcers in Children. A. v. Bosányi.—p. 182.
Multiple Chondroma in Boy of Thirteen. A. v. Koós.—p. 190.
Symptoms of Spondylitis from Swallowed Pebble. M. Paunz.—p. 197.
Lymphosarcoma in Liver of Three Weeks' Infant. B. Johan.—p. 200.
*Functional Diagnosis of Kidney Disease. M. Abelmann.—p. 209.

Active Immunization Against Diphtheria.—Opitz reports that intradermal injection of a fivefold overneutralized mixture of diphtheria toxin and antitoxin is an effectual means for active immunization. The toxin is liberated from the mixture after it is injected, and this stimulates antibody production. The duration of the immunization is still a question, and he urges others to cooperate in this line.

Treatment of Spasmophilia.—The benefit from calcium chlorid in treatment of spasmophilia is established now beyond question. Scheer has been experimenting with the separate elements of calcium chlorid, and here reports surprisingly favorable results with the chlorin element alone. He gave it in the form of hydrochloric acid in milk, in 8 cases of very severe tetany, and with invariable success. He stirs 260 parts of decinormal hydrochloric acid into 740 parts unboiled whole milk; adds 4 per cent. of sugar, and boils up slowly. The acidity corresponds to that in the infant stomach at the height of digestion, and the children like the mixture.

Acute Nutritional Disturbances.—The action of peptic and tryptic predigestion of the albumin of cow's milk is discussed in this, Rosenbaum's fifth communication.

Utilization of Fat in Infant Feeding.—Frontali's research was devoted to study of the various correlations of the elements of the food on the utilization of fat.

Duodenal Ulcer in Children.—Bosányi reports the cases of 2 young infants with an extensive skin disease who both developed a duodenal ulcer at almost the identical point. The connection with the dermatitis seems unmistakable. The resemblance to Curling's ulcers after severe burns is striking, from several standpoints, and especially the location of the ulcers. In Theilis' compilation of 31 cases of duodenal ulcers after severe burns, the ulcer was in the horizontal portion in 22, and in 12 of these at the point where the head of the pancreas lies against the duodenum. This was the seat of the ulcer also in Bosányi's two cases, and he thinks that the pancreatic juice must be incriminated to a certain extent.

Tests of Kidney Functional Capacity.—Abelman tabulates the findings in eighteen cases of chronic kidney disease and twenty of acute nephritis in which the various functional tests were applied parallel and compared with the ultimate outcome. Especially after recovery from acute nephritis, the response to the tests may warn that the kidneys still need to be spared to ward off chronic nephritis later.

Medizinische Klinik, Berlín

Feb. 26, 1922, **18**, No. 9

Experiences in Treatment of Typhoid. Bardachzi.—p. 263.
*Arsphenamin Questions. Arndt.—p. 266. Begun in No. 8, p. 231.
*Tuberculosis and Pregnancy. E. Zweifel.—p. 269.
*Protein Therapy. F. Glaser and Buschmann.—p. 271.
*Symptoms of Tumor in Frontal Lobe. Dimitz and Schilder.—p. 273.
*Gastric Secretion in Anemias. N. Roth and F. Sternberg.—p. 274.
Medical Certificates for Candidates for Matrimony. Schubart.—p. 277. Reply. L. Kleeberg.—p. 277.
Proof of Muscular Impulse Transmission in Frog Heart. Haberlandt. —p. 278.
*The Predisposition and the Constitution. F. Fleischer.—p. 279.
*Practical Obstetric Questions. E. Runge.—p. 281. Cont'd.
Roentgenology of Chronic Appendicitis. Waitzfelder.—p. 283.

Arsphenamin Questions.—Arndt relates that during the last two years there were 280 cases of jaundice in syphilitics under treatment with arsphenamin at the Charité Hospital, and in 231 the drug was evidently responsible. This includes five children with inherited syphilis. The jaundice developed during or immediately after the treatment or up to two and a half months later. There were seven deaths during this period for which the drug was incriminated. Since these fatalities the arsphenamin has been given more cauiously, and there have been no cases of jaundice since in the hird stage of syphilis. He adds that a rise in temperature uring arsphenamin treatment may warn of impending disurbance. One robust man developed a diffuse dermatitis durng the treatment, and the case was studied retrospectively or preceding signs of intolerance. Nothing was found but moderate peak in the temperature chart. This was not ecognized as a warning, and the usual dose of arsphenamin vas given, the dermatitis appearing at once and persisting ebellious to treatment for two or three months. In conlusion, Arndt urges avoidance of middlemen in procuring he drug.

Pregnancy and Tuberculosis.—Zweifel interrupted the pregancy on account of tuberculosis in 32 cases between 1907 nd 1915, and 18 of these tuberculous women are in much mproved health today; 7 have shown no material change ince, and 5 have died. "A protracted course of sanatorium reatment is indispensable after the induced abortion, as well s after normal childbirth." When the woman is once thorughly cured, a pregnancy then may have a favorable outome, as gestation does not cause the flaring up of an old ealed tuberculosis.

Protein Therapy.—Glaser and Buschmann's conclusion rom their extensive experience with parenteral protein injecions is that the most important field for this form of therapy n internal medicine is in subacute disease in joints. They egard the stimulation from the protein therapy as an intenification of certain physiologic processes. The nonspecific ncrease in resistance that follows subsides in a day or two nd hence, to maintain the effect, the injection should be epeated every day or two. If, on the other hand, a specific ction is desired, then time must be given for the ebb and low of the specific action, and this would require an interval f five or six days. Some have reported recently that the oint foci show the effect of certain protein bodies even taken y the mouth. Antipyretics by the mouth have been known o induce distinct focal reactions in pulmonary tuberculosis.

Symptoms of Tumor in Frontal Lobe.—A case of frontal lioma is described in which the site of the tumor was correctly diagnosed.

Gastric Secretion in Differentiation of Anemias.—In 14 cases of pernicious anemia, no hydrochloric acid could be found in the stomach content on repeated examination. In aplastic anemia, on the other hand, gastric secretion was within normal range in the cases examined. In a case of the latter, in a man of 45, the erythrocytes dropped to 630,000 and the leukocytes to 1,800, but the figure for the free acid was 20, the total acidity 30. This hemorrhagic aleukia or panmyelophthisis, as he calls it, thus differs essentially from pernicious anemia with its inevitable achylia.

The Predisposition as an Element in the Constitution.—Fleischer remarks that none of the recent writers on the importance of the constitution have attempted to define what is meant by "constitution," but regard it as of a functional nature.

Practical Questions in Obstetrics.—Runge here starts a new series on emergency obstetrics, and emphasizes among other points that the length of the fetus and child is the best criterion for its age. A simple rule to remember is that for the first five months the length of the fetus in centimeters should equal the figure representing the month multiplied by itself; after the first five months, multiplied by five for the last five months. At term the fetus should measure 48 or 50 cm. He says that a child that is less than 48 cm. in length was not carried to term.

Monatsschrift für Geb. und Gynäkologie, Berlin

January, 1922, **56**, No. 5-6

Histology of the Fetal Membranes. F. Heinlein.—p. 237.
*Chorionic Invasion. W. Schiller.—p. 244.
*Malignant Vesicular Mole. I. Amreich.—p. 249.
*Eclampsia Cured by Decapsulation of Kidney. E. Fey.—p. 256.
*Sudden Death with Atrophied Suprarenals. Zimmermann.—p. 259.
Suspension of the Portio in Operations for Prolapse of Uterus. H. Saenger.—p. 270.
The Lipoids in Eighty-Five Human Ovaries. E. Weishaupt.—p. 276.
Relations of Pregnancy to Induced Glycosuria. H. Lembcke and P. Lindig.—p. 283.
Swelling of Mammary Glands in the New-Born. G. B. Gruber.—p. 289.
Determination of Sex and Ratio of Sexes. G. Doderlein.—p. 292.
Status of Gynecologic Radiotherapy in 1920. H. Langer.—p. 297. Conc'n.
Monthly Genital Cycle and Its Anomalies. R. Schroeder.—p. 308. Conc'n.

Chorionic Invasion.—Schiller was able to trace the invasion of the chorion in the uterus in six normal and six pathologic cases.

Malignant Mole.—In the case reported by Amreich, the hydatidiform mole broke through into the uterus musculature and proliferated into veins of the organ, with metastasis in the right parametrium, the metastasis working its way through both layers of the broad ligament. This behavior indicated extreme malignancy, but after panhysterectomy and roentgen-ray exposures complete health was regained.

Eclampsia Subsides Under Decapsulation of Kidney.—The eclampsia had developed less than two hours after the normal childbirth, and convulsions followed every hour, growing more and more severe. Bilateral decapsulation of the kidney arrested them completely. Both kidneys were large and gorged with blood.

Sudden Death with Suprarenal Atrophy.—Only the medulla showed signs of atrophy in the woman of 39 who had failed to recuperate after cesarean section. A week later there was another fatality under much the same circumstances. The pregnancy had been normal, but cesarean section had been required on account of the disproportion between the fetal head and the birth passages. The pulse was regular and normally full, and the operation proceeded smoothly. There was nothing to explain the sudden functional collapse of the heart. Indirect massage of the heart by shaking the chest wall seemed most effectual in counteracting the respiratory weakness. In both patients necropsy revealed the suprarenal medulla reduced to merely a few scattered scraps.

Monatsschrift für Kinderheilkunde, Leipzig

November, 1921, **22**, No. 2

*Transactions of Thirty-Second Annual Meeting of German Pediatric Society, May, 1921, pp. 129-448.

Systematic Prophylaxis of Measles (p. 186).—Degkwitz approves the plan proposed by Pfaundler that schoolchildren who have no younger brothers or sisters under school age at home shall be in sections by themselves, and that pupils who do have younger brothers or sisters shall be segregated in other sections, where by the strict application of prophylactic measures, including isolation in the class room, the spread of infections may be prevented. If the age of morbidity for measles could be thus advanced so as to exclude children under school age, measles would cease to be numbered among the diseases that are capable of materially affecting the mortality rate. Degkwitz also recommends measles convalescents' serum for its prophylactic value against measles. He urges that, if for the city of Munich 300 measles convalescents could be secured who would become serum donors, the 6,000 cases of measles annually could be reduced to 3,000; that is, all the children under 4 years of age could be thus protected against the disease, which would mean a saving of about 200 human lives yearly. He has succeeded in cultivating a virus from measles patients which induces a mild set of symptoms that apparently confers immunity against measles. He does not give any details in this preliminary communication as the research is not completed, but he regards the regular symptomless response to date to massive measles infection as extremely promising.

Endogenous Intestinal Infection in Infants (p. 273).—Moro distinguishes two kinds of endogenous intestinal infection: 1. A certain type of bacteria that has existed in the intestine in smaller numbers comes rapidly to the front owing to especially favorable conditions of growth. 2. Intestinal bacteria appear in regions that are normally almost free from bacteria. In 1905 Tissier and Moro, working independently, discovered simultaneously that the small intestine of infants is normally almost free from bacteria, whereupon the study of endogenous intestinal infection in infants entered on a new phase. About a year later, Moro examined postmortem the intestine of infants that had died from acute nutritional disturbances, and found that the whole intestine from the duodenum to the ileum was densely infected with bacteria, the flora of the small intestine being of a remarkably uniform type, with colon bacilli. He was led to advance the theory that almost every acute nutritional disturbance causes a marked change in the intestinal contents. They become more fluid and richer in nutrients, thus furnishing an excellent culture medium for various types of bacteria, which accordingly increase in numbers and probably also in virulence. These bacteria ascend to higher portions of the intestine, reaching the small intestine and the duodenum. This he terms endogenous infection of the small intestine. The question arose as to what had deprived the small intestine of its natural protective power. Animal experimentation showed that the fatty acids, such as butyric and acetic acids, so commonly incriminated, are not particularly to blame, but that a complete endogenous infection of the small intestine in rabbits and dogs could be brought about most surely and most rapidly by feeding large quantities of sugar, and that when heat was applied the effect was still further enhanced. So in the infant, sugar acts as an excellent culture medium, favoring the growth of invading bacteria, and heat paralyzes the normal functioning of the small intestine. Sometimes the infection is confined to the chyme, when we may speak of chyme infection; or the mucosa, examined separately, may reveal that also the wall of the intestine is affected, which adds to the seriousness of the situation and shows that the defense of the small intestine had broken down entirely, owing to the severe nutritional disturbance.

Dementia in Young Children (p. 389).—Zappert reports two cases of infantile dementia from his own practice and also gives condensed histories of five further cases communicated to him by T. Heller, who was the first to call particular attention to this form of dementia (1908). All seven cases are so similar that there can be no doubt about their belonging to the same group. After a period of normal or approximately normal development, the typical symptoms of the condition begin to appear in the third or fourth year. At the onset of the disease and during its further evolution, disturbances of speech become manifest. These are often the first disturbances to attract the attention of the parents. At first only peculiar inaccuracies of pronunciation are noted, but later speech becomes quite indistinct. In every case great unwillingness to speak developed, until finally spontaneous speech ceased entirely; also the understanding for spoken language was gradually lost. Restlessness, an excited condition and sometimes hallucinations were common manifestations. Fear states were noted in some instances. The dementia continued to increase and ended in a few months in complete idiocy. The facial expression did not become idiotic but remained, as a rule, rather intelligent. There were no bodily symptoms connected with the nervous system—no motor disturbances. The condition finally became stationary without impairment of the physical health. One of the children was the son of a physician. The diagnosis at first had been hysteria, but the course of this and the other cases confirmed the progressive dementia. All were boys but one in this series.

Zeitschrift für Tuberkulose, Leipzig

March, 1922, **35**, No. 6

*Sedimentation Speed of Erythrocytes in Tuberculosis. G. Katz.—p. 401.
Immunity to Tuberculosis: Theory and Practice. H. v. Hayek.—p. 424.
Pneumothorax with Zero Pressure. H. Frey.—p. 441.
"Disinfection of Sputum." Jötten.—p. 447. Reply. Schuster.—p. 448.
*Conference on Ponndorf's Tuberculin Treatment. W. V. Simon.—p. 449.

Suspension Stability of the Erythrocytes in the Tuberculous.—Katz relates experiences with citrated blood which confirm that the speed of sedimentation of the erythrocytes is a sensitive and reliable index of the destruction of tissue that is going on. Hence it is a valuable aid in pulmonary tuberculosis as negative findings exclude an active process, and the modification of positive findings shows the trend up or down. With nontuberculous affections of lungs and pleura the return to normal confirms the absence of a tuberculous process. The reaction depends mainly on the amount of fibrinogen in the blood, and the test should be repeated at ten or fourteen day intervals to estimate the progress of the case. He gages the reaction by the depth of the column of plasma in a set of eight vertical pipets filled with the citrated blood, as he describes. The pipets are 30 cm. long, with a diameter of 2.5 mm. and they are graduated from the top down to the tip, 0 to 200 mm. Four parts of the 3.8 per cent. solution of sodium citrate are mixed with sixteen parts of blood, and set aside in a test tube for four or five hours. Charts are given of a number of cases. Of course the sedimentation reaction is not specific for tuberculosis any more than the temperature or the pulse, but it gives a better idea of the actual condition than the tuberculin test, as the latter may be positive with an inactive focus.

The Ponndorf Method of Tuberculin Treatment.—Ponndorf applies the tuberculin to deep scarifications. He summoned all who had used this method to relate their experiences at a meeting in Weimar, and Simon here gives his impressions of the conference. Hellwig of Stettin declared that he would not care to keep on practicing medicine if he did not have the Ponndorf method. Others were less enthusiastic, but the general impression is favorable; the weight and general condition improve under it and injury from it has not been observed. Simon queries whether the effect is not a kind of protein therapy; this seems plausible, as benefit was reported likewise in exophthalmic goiter, arthritis, psoriasis, erysipelas, epilepsy and arteriosclerosis as well as in the tuberculous. Ponndorf ascribes great importance to the skin itself. This is evidently a factor in Petruschky's percutaneous method of tuberculin treatment.

Mitteil. a. d. Med. Fak. Univ. Fukuoka, Japan

1921, **6**, No. 1. German Edition

Muscular Atrophy with Experimental Joint Lesions. K. Mizoguchi.—p. 1.
*Experimental Production of Aseptic Gallstones. H. Iwanaga.—p. 89.
*Dysenteriform Disease in Children. K. Mita.—p. 111.
*Physiology and Pharmacology of the Heart. T. Sasaki.—p. 129.
*Serologic Research on Plants. H. Kojima.—p. 223.

Experimental Gallstones.—Iwanaga reports that in all his various experiments on rabbits and guinea-pigs he never succeeded in inducing the aseptic production of a cholesterin calculus. However, mechanical or thermal irritation of the mucosa of the gallbladder was followed by production of a concretion resembling the pigment-calcium calculus in man.

Dysenteriform Disease in Children.—Mita found the five ordinary causal agents in 334 cases of dysenteriform disease in children, but in another group of seventy-three he isolated a bacillus which differed from others yet described, and proved virulent for the animals tested.

Physiology and Pharmacology of the Heart.—Sasaki reports his conclusions from analytic study of the heart musculature, especially in regard to tetany of the heart. His research was done on the excised apex of the heart, suspended in Ringer's fluid, the cavity of the stretched apex constantly flushed with the fluid. Among the deductions from these experiences is that fibrillation of the heart is a kind of tetany. It occurs from an abnormal excitation and change in the condition of the heart muscle, just as tetany can be induced.

Serobiology of Plants.—Kojima's comprehensive application of serobiologic methods to differentiate the albumin of different plants showed unexpected diversities and analogies between different species, as he describes.

Hygiea, Stockholm

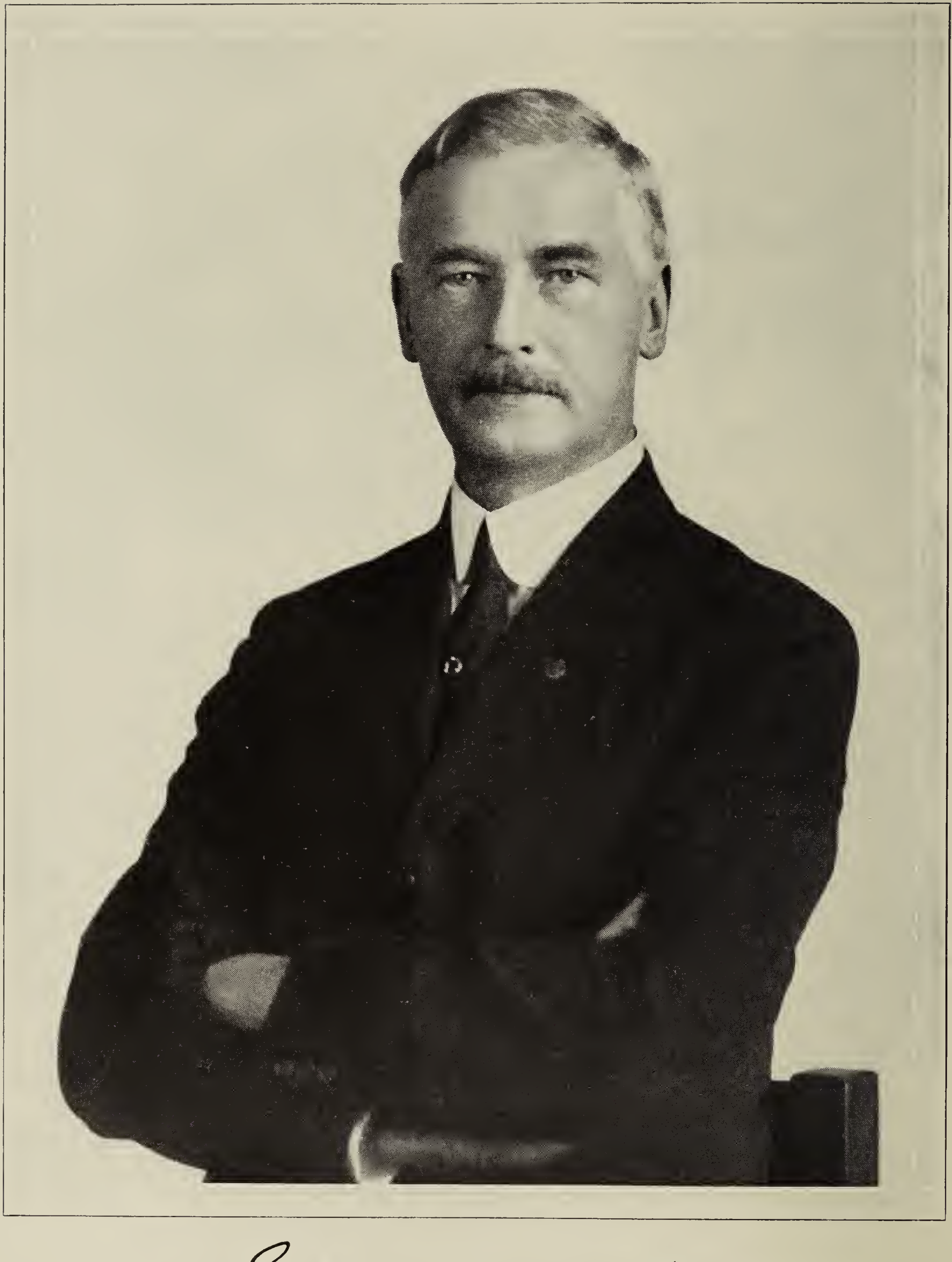
Feb. 15, 1922, **84**, No. 3

Congenital Defect of Both Radius and Ulna. S. Johansson.—p. 81.
Vesalius' Bone in the Foot. Idem.—p. 85.
*Treatment of Acute Hemoptysis. H. Tideström.—p. 92.

Feb. 28, 1922, **84**, No. 4

Graphic Records of Lung Findings. C. O. Segerberg.—p. 116.

Treatment of Hemoptysis.—Tideström excludes one limb from the circulation but has never tied off more than one limb at a time, and he always removes the constricting band at the root of the limb very slowly. He also gives gelatin internally, eight or nine tablespoonfuls daily of a 1 per cent. solution of cooking gelatin. This does no harm in any event, and he is confident that it helped materially to arrest the tendency to hemoptysis in many cases. He long ago abandoned its intravenous use as too dangerous.



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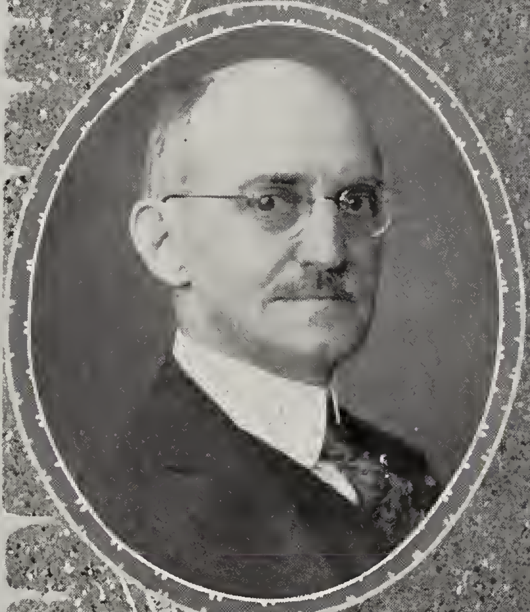

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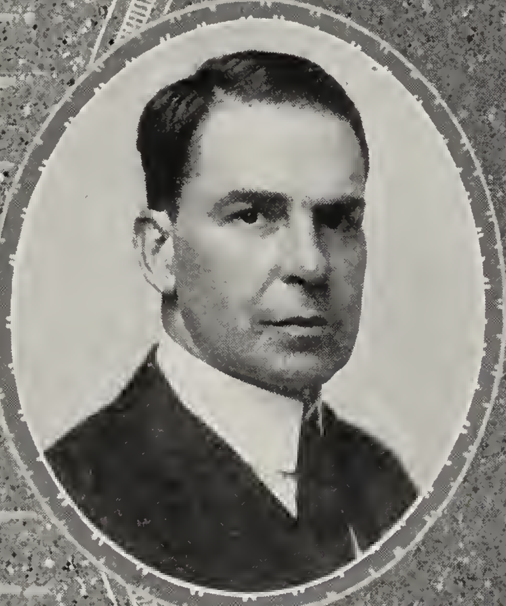

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THE TREND OF THE PRACTICE OF MODERN MEDICINE *

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CHICAGO

I am mindful of the fact that the constituent associations of the congress were organized for scientific purposes only; that discussions of policies or ethics which affect the medical profession as a whole were not to be introduced into the meetings. I crave your indulgence with the hope that I may justify the presentation of a subject which, in my opinion, demands your earnest consideration.

POSTWAR CONDITIONS

It is evident that, since the close of the great war, the state of mind of the people of the whole world has been characterized by reactionary ideas in regard to governmental policies, education, industry, employment and other human activities. Reconstruction on new lines is suggested to overcome alleged past and present social and other evils, with the naive assurance that the proposed reforms will insure universal prosperity and happiness. The public health and welfare, including medical education and medical practice, are embraced in the general plan of reconstruction. It is generally recognized that a large measure of these reactionary ideas are sequences of the war, and that time and the application of good common sense in the adoption of the proper remedies will bring us back to the safe and sane conduct of individual and community life. However, there are some human activities in which, before the war, there had developed recognized productive benefits, but in which, at the same time, the methods of administration and application of these human interests lessened their value to society; and these deleterious conditions were aggravated during the war, and have been since it ended. Among these activities I include the practice of medicine.

MODERN MEDICINE

During the last fifty years the study and evolution of chemistry, physiology, pathology, bacteriology and sanitation, and their application in the prevention, diagnosis and treatment of disease, have changed and broadened medicine to such a degree that its practice is designated an applied science. This does not imply that it is now or that it ever will become an exact science; but by means of continued laboratory and clinical research, the medicine of tomorrow will be characterized by increased learning of greater value to mankind than is the medicine of today. The practice of medicine, however, will always be an art rather than an applied science; for the benefits of the application of the knowledge which the fundamental sciences afford in clinical medicine may be measured by the technical skill and the experience—the art—of the physician.

The study of physiology and biochemistry has brought about a revision of the older anatomic conception of disease. While today we are interested still in the morbid anatomic lesion, its etiology, nature, evolution and its modification by management and treatment—we have quite as much or a greater concern in the coincident functional disorder. In other words, the study and knowledge of pathologic physiology is now recognized as of the greatest moment in modern medicine.

Modern clinical medicine embraces such a vast field of knowledge that it is beyond the power of any individual to acquire the necessary learning, experience and technical skill to practice efficiently in the whole field of medicine. A recognition of this has led to the necessary specialization in medicine, with the evolution of the internist and of other specialists in the narrower fields of medicine and surgery. The wonderful beneficial results of the application of asepsis have made the modern general surgeon a specialist. The evolution of medicine and the promotion of specialism have resulted in the invention of instruments of precision and the elaboration of laboratory methods of physical and functional diagnosis which require special technical skill and experience in their application. In consequence, diagnosis, both physical and functional, has become more precise and at the same time complex. We recognize the enormous benefits which these methods of diagnosis have brought to medicine, and the fact that their employment will bring additional useful knowledge; but we must ever keep in mind that many of these complicated methods of diagnosis are of use chiefly in the investigation of disease rather than in routine practice.

MODERN MEDICAL PRACTICE

Specialization in medicine developed rapidly before the war, and it may be said that the result was generally beneficial to clinical medicine and surgery, and to the public; but an early tendency to overspecialization became evident. During the period in which the United States participated in the war, more than 30,000 civilian practitioners volunteered and accepted commissions as temporary officers in the medical department of the army. This large number of civilian doctors exerted an enormous influence in the organization of the medical corps of the National Army for service in administration and in the field. Specialization in organization resulted to such a superlative

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* President's address, read before the Congress of American Physicians and Surgeons, Washington, D. C., May 2, 1922.

degree that eight different administrative divisions, with as many groups of specialists, were formed to care for that part of the anatomy of the soldier designated as the head. Clinical divisions, approximately twenty in number, were organized with separate groups of specialists on duty at headquarters and in the field to care for the designated anatomic portions of the soldier when sick and injured. This organization of the medical department of the army into special groups was maintained throughout the war. The question of jurisdiction over certain anatomic parts of a sick or disabled soldier caused more or less dispute and heartburning among both administrative and field officers. The efficiency of both medical and surgical service was good generally, as evidenced by the relief of suffering, cure and prolongation of life. But in this experience of the application of specialism in military medical service, all factors were such as to promote success under any well organized plan for medical and surgical care. The population cared for consisted of young men mobilized in camps, usually with good diagnostic and hospital facilities available, and the requisite medical and other personnel. Military discipline was a helpful factor, and, until the armistice, the morale as a rule was excellent, and promoted recovery from disease and injury.

The recognition and promotion of specialism in the medical corps of the army during the war greatly stimulated the amplification of specialism in civilian practice. Many physicians and surgeons who were general practitioners when they enlisted were so impressed and pleased with the special service which the army experience afforded that they have continued to attempt the practice in the respective narrow fields since returning to civil life. As a natural consequence, in civil practice they feel responsible, as they did during military service, merely for the particular anatomic part of the patient which is the apparent seat of a morbid process or injury; for specialization in medicine is likely to induce a loss of perspective, and the patient is viewed no longer as a human being but solely as a case. It is asserted that this form of practice is ultrascientific, which may be admitted, and that it is to become the only proper form of efficient medical service. Overspecialization has promoted group practice.

GROUP PRACTICE

For many years, group medical practice has existed in hospitals conducted by medical educational institutions, and in some public hospitals. The members of the group include members of the hospital staff. In these groups there has been no organization which provides for the charge of a single fee for the services rendered the patient by participating clinicians. The patient is referred to the available specialist on the staff and in the group, who gives an opinion and collects his own fee. Similar forms of group practice have always existed among private practitioners with the mutual understanding of individual independence in regard to the financial remuneration for services rendered.

In recent years, overspecialization in medicine has led to the organization of private practitioners into groups, with representatives in the membership of general or internal medicine and surgery and of most or all of the specialties of medicine and surgery, including laboratory specialists, for the purpose of affording greater efficiency in practice. Since the end of the war, the movement toward group practice has expanded rapidly. In some cities several groups have been organized, and in some places active competition to obtain patients exists between the groups, as is evidenced by announcements in the public press indicating the superior advantages offered by the staff, and the available diagnostic and hospital facilities for the care of the sick and injured. The organization of diagnostic and treatment pay group clinics is a more recent development. The suggested advantages of group practice include more efficient diagnostic and therapeutic service; financial economy to the patient, because the one fee charged for the total service rendered is adjusted to meet, without embarrassment, the financial resources of the patient; and professional cooperation in substitution of the prevailing individualism in medical practice.

Now we will all agree, probably, that private and public group practice is a distinct advance in medical service to a community; but it must be evident to all that its application has distinct limitations. To be of real value to the profession and to the public, the group clinic must be conducted on fundamental principles and policies which are characterized by intellectual and professional honesty, and by unselfish and sympathetic understanding of the needs and the welfare of the public, including the members of the medical profession, unconnected with the group, in the community it serves. In other words, the private and public group clinic should be conducted under the same standards of ethics as those recognized and adhered to by the conscientious and honest individual consultant in his relationship to the members of the medical profession and the public. The individual consultant who retains and treats the patients sent to him for diagnosis by a physician, or who attempts to promote his practice by methods tantamount to advertisement in the public press, is unworthy of the confidence of the members of the medical profession and of the public.

I have stated that the value of the application of group practice is limited. I believe that this is true. Let us see. Ostensibly the group is formed for the avowed purpose of providing all patients with an accurate diagnosis and efficient treatment. This is made possible through the services of clinical and laboratory specialists and available equipment to obtain a precise knowledge of the physical and functional condition of the patient and to afford efficient general and special treatment, including hospital care, if that is deemed necessary. First, let us inquire how many patients of an average community require the application of these precise methods of diagnosis to arrive at a true understanding of the real condition, and how many of these patients require hospital care. Based on long experience in consultation and in general hospital and private practice, it is my opinion that a correct anatomic and functional diagnosis can be made in from 80 to 85 per cent. of all the patients of an average community by a qualified, industrious, painstaking general practitioner by the sole application of the trained mind, the special senses, the hands and an always available simple laboratory equipment. Likewise, approximately 80 per cent. of the patients will receive efficient management and treatment as ambulatory or house patients. Of course, it is advantageous that every hospital, with the possible exception of some very small or special institutions, should have the necessary laboratories, equipment and trained technicians to make these precise examinations and to afford adequate treatment of the few patients who really require their use. So, too, must the organization of private groups of practitioners who will make these ultrascientific methods of practice available for those patients whose morbid conditions demand their use be commended and supported.

The truth is, the splendid knowledge which modern medicine has made available in the diagnosis and treatment of disease is misapplied frequently, with unfortunate derogatory effect on the public and the tendency to demoralize some members of the medical profession. In substantiation of this statement I will cite the establishment of public clinical laboratories. In recent years the number of these institutions has increased far beyond the need. Fundamentally, their services are useful to the members of the medical profession, by furnishing them the needed laboratory examination of a special character. These laboratories also provide for the routine examinations which are simple in character, the greater part of which should be done by the practitioners themselves with the required inexpensive and simple equipment always available. For their own benefit, medical practitioners should carry on personally their own clinical laboratory and physical investigation of the condition of their patients. For the more elaborate laboratory tests, such as blood chemistry, serology, electrocardiography, radiography and some functional tests requiring technical skill and experience, they should make use of the public clinical laboratories. However, the use of these refinements in diagnosis, which are costly, has been stimulated by propaganda distributed by the directors of these public laboratories, through advertisements in medical journals and by circulars sent in the mail to practically all members of the profession. In some instances the attempt is made in the statements published to emphasize the importance and the great need of these methods of refinement in diagnosis in routine practice. Through these and other influences, these refinements in diagnosis, always paid for by the patient either directly or indirectly, are unnecessarily used. Too often the necessary primary and fundamental physical examination is not made, or, if it is, not as thoroughly as it should be. In other words, the patient as a whole and as a human being is not considered. Over and over again, an erroneous diagnosis is made on the basis of the laboratory findings, which would have been avoided and the correct diagnosis established by available simple methods of examination.

This method of practice, and the false impression gained by the public through private and public group medical and surgical service with the usually attendant high cost, are tantamount to commercialism. The public is slowly but surely becoming aware of these conditions in medical practice. Evidence of this point of view of the public is expressed by lay people in cities and in the country. Frequently the best families of the city inquire whom they may secure as a family physician. They ask, "Where can we find the resourceful, painstaking, sympathetic family physician who attended us or our parents' families in former years?" In this connection we must remember that the splendid character and accomplishment of the United States government are due in no small measure to the character-forming factor, the family home. The modern tendency in the cities, especially among the foreign-born population, is to seek tenement habitation, which tends to minimize the value of family life and to disregard the responsibilities of citizenship. This tends to engender the worst forms of socialism, and disregard of individual and community responsibility in the observance of the laws of sanitation, and also to promote disease and poverty. The future safety, prosperity and health of the people and the maintenance of all the benefits which this republic affords demand the preservation of the character-building family home.

As a factor in this necessary principle of community welfare, the family physician and his domiciliary visits are essential. It is recognized that the general practitioner, both in the city and in the country, lacks sufficient hospital facilities in the care of his patients. This lack is evident in some of the rural districts of practically all the states of the Union. Some feasible constructive program should be adopted which will afford justice to the taxpayers and to the members of the medical profession, and which will provide better hospital and diagnostic facilities where they are needed. We must, however, keep in mind the fact that a majority of patients do not require the application of unusual and refined methods of diagnosis, and also that a majority do not require hospital care. The pretentious program of some members of the medical profession and of uninformed members of the public for the irrational amplification of hospital beds for the treatment of practically all the ill and injured, is unnecessary and uneconomical, and promotes the disorganization of society.

MEDICAL EDUCATION

We are justly proud of the satisfactory standards of medical education in the United States. This standard of medical education is evidenced by the generally excellent professional qualification of the graduates of recent years. Never before in the history of the United States have so many members of the medical profession been so well qualified for efficient service to the public. Never before this period have there been so many opportunities for medical service to the public. The graduates of recent years readily find opportunity for laboratory and clinical service to the public, and also opportunity to teach and to carry on investigations in various lines of research, with financial remuneration which is greater than that received by young professional men in former years.

The tendency to specialize in all lines of professional service has had its influence on the character of the education and training of the undergraduate medical student. The majority of the teachers in the medical schools of the country are specialists in practice, and it is natural that each should emphasize in his teaching the importance of a given specialty. In consequence, too much of the time of the student is occupied in the accumulation of unimportant facts relating to special subjects, which deprives him of the necessary time for the needed broad and comprehensive instruction and training in the fundamental principles of pathology, general medicine and surgery, and obstetrics.

The constituent associations of this congress have a membership which includes the foremost medical teachers, research workers and specialists in the preclinical and clinical branches of medicine. The membership stands for the highest ideals of the medical profession, and is qualified and should assume the responsibilities of leadership in the solution of the problems which affect the efficiency of medical practice and the health and welfare of the public. The members of the congress should use their influence to promote the adoption of a fundamental curriculum having as its purpose the proper education of the general practitioner.

The tendency to overspecialization in the practice of medicine has tempted many inadequately trained members of the profession to take up special lines of work. There are too many specialists of this kind in practice today. To correct this condition, it is my opinion that the members of this congress should promote and develop opportunities in various parts of the country for adequate postgraduate training in the several specialties of medicine and surgery.

Finally, permit me to assure you that there is no member of the congress who more fully recognizes and appreciates the value of the facilities which modern medicine affords in the practice of medicine, than I. My endeavor has been to point out what in my opinion are very important and serious errors in modern medical practice, which are injurious to the members of the medical profession and very unjust to the public. I have confidence and faith in the honor and integrity of the medical profession. I believe that its past history, characterized by the highest motives, self-sacrifice and productive service to the public, will enable it voluntarily to correct existing conditions detrimental to medicine and to society. Furthermore, I have tried to impress upon the members of the congress the necessity of preserving that individualism in medicine which implies broad professional qualifications combined with resourcefulness and desire, above every other consideration, to give efficient service in the relief of suffering and the prolongation of life.

TODAY'S PROBLEM IN DIABETES IN LIGHT OF NINE HUNDRED AND THIRTY FATAL CASES *

ELLIOTT P. JOSLIN, M.D.
BOSTON

Whereas the death rate from diabetes in the Massachusetts General Hospital for the ninety years prior to 1914 averaged 28 per cent., since that date it has fallen to 7 per cent. In order to determine whether such a marked change in duration was confined to hospital cases, a study has also been made of the fatal cases of diabetes occurring in the city of Boston. The registrar's office shows that between 1895 and 1913 the average duration of life in the fatal cases of diabetes amounted to 3.3 years; for 1915 it was 4.3 years, and for 1920 it was 5.3 years.

These figures are significant in several ways. Since the average duration of life of diabetic patients as at present treated by the average Boston physician is 5.3 years, it is fair in considering claims of any new method of treatment to demand that it give as good or better results. Consider also what this change in duration from three years to five years means when applied to the million diabetic patients in the United States. It creates an addition of 2,000,000 years of the disease diabetes which the general practitioner must treat. Furthermore, these additional two years of illness for each patient with diabetes require far more treatment and more resourceful treatment than the earlier three years. Indeed, it is with these 2,000,000 years of diabetes which all of us must see and treat that we are most concerned. These years of life have been added largely through the efforts of Dr. Allen; the purpose of Dr. Newburgh's and Dr. Marsh's work has been to make them years of greater activity.

In my own series, the first death from diabetes occurred in July, 1898; the latest, in March, 1922. Between these dates the intervening deaths have been arranged chronologically. This was done the better to facilitate a comparison between the results of treatment of early and of late cases. This is a far safer method of analysis than to record the duration of the disease in numerical case sequence, because many of the patients seen in the early years live today and profit by present day methods. Adopting this course, it appears that by Oct. 20, 1908, the first 100 deaths had occurred, and the average duration of life of these patients was 4.8 years. Since Jan. 1, 1921, the last 100 deaths have been recorded, and the average duration of life was 6.0 years. The first 100 deaths surpassed the early Boston average by 1.7 years, and the last 100 deaths exceeded the late Boston average by only 0.7 year. The general practitioner appears to be improving so rapidly that the specialist is hard pushed to keep ahead.

EFFECT OF TREATMENT BY UNDERNUTRITION ON LIFE EXTENSION

Undernutrition, as introduced by Dr. Allen, began to exert its influence in my practice in June, 1914. Both prior to and after that date a study was made of the metabolism in 113 cases of diabetes at the Nutrition Laboratory. Of these, all but one have been traced to last year. The average duration of life of this group of patients is particularly interesting because they were nearly all severe cases and intensively investigated. Of the thirty-one patients so studied before June, 1914, all but three have died, and the average duration of life was 5.1 years. Of the eighty patients studied between June, 1914, and December, 1917, sixty have died, and the average duration of life was 4.3 years; but as twenty-one patients among the late cases still live, there is little question that the duration of life of the latter series will not only equal but exceed the first. As a matter of fact, the duration of the living patients of the entire Carnegie series in June, 1921, was eleven years. The statistics, however, show that no great change was made in the duration of life of patients with diabetes in the early days of the application of undernutrition. It is important to emphasize this, because a new method in the hands of any but its author is not likely to be well utilized at the start. Its advantages and dangers are not fully appreciated. This consideration applies not only to the introduction of undernutrition, but also to the introduction of some of the principles which Dr. Newburgh has advocated, and it is a pleasure to state that, just as experience with undernutrition has steadily yielded better results in my hands, so has experience with the more liberal use of fat under certain conditions yielded better results.

If one compares the duration of life of all my patients known to have died prior to June, 1914, and that in similar cases since June, 1914, a fairer conception of the results of present methods will be found. Thus, prior to June, 1914, the average duration in 331 fatal cases was 4.8 years, and since June, 1914, the average duration in 597 fatal cases has been 6.0 years. These statistics are general statistics, somewhat akin to the statistics of the city of Boston. I have seen many of these patients only once. Surely, hardly more than a third have been under observation in hospitals.

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* Read before the New York Academy of Medicine, April 6, 1922.

They simply represent statistics that are somewhat personal compared with statistics for the city of Boston, which are obviously general.

SELECTED STATISTICS

Statistics based on selected series of cases are plausible, but unsatisfactory. Though a diabetic patient is seen but once, an influence should be exerted to guard that patient from coma or gangrene, and to state all those possible legitimate hopes and prospects by which the patient's courage may be and often is maintained. Possibly it would be just to exclude patients who pass entirely from observation, but I am not yet convinced of this; another physician may be diligently, though unconsciously, bettering my statistics.

One should not claim, as an alibi, ignorance on the part of the patient. One of my most faithful diabetic patients could neither read nor write. Nor should one set up the excuse that the patient is not following the diet. Most likely the diet was faulty, as was my experience, with two or three patients who broke treatment and lived longer than those who did as I told them.

TABLE 1.—DURATION OF LIFE IN FATAL CASES OF DIABETES ARRANGED IN DECADES BEFORE AND AFTER JUNE, 1914

		Before June, 1914		After June, 1914	
Decades	Years	No. of Cases	Duration, Years	No. of Cases	Duration, Years
1	0-9	25	1.2	47	2.7
2	10-19	39	2.9	69	3.3
3 and 4	20-39	80	3.9	162	5.3
5 and 6	40-59	137	6.7	216	8.1
From 7 to 9	60-89	50	4.5	103	6.1
1 to 9	0-89	331	4.8	597	6.0

DEATHS ARRANGED BY DECADES OF ONSET

In a study of the duration of life of diabetic patients it is probably wiser to confine one's statistics increasingly to individuals who have developed the disease at an age below 60. Even twenty years ago, a person who contracted diabetes at the age of 60 and was treated carefully but without extremes of diet, though with the constant purpose of keeping the urine sugar free, could look forward to an attainment of his full expectation of life. For this reason the statistics have been grouped by age, and for convenience are here assembled in successive decades because, as is well known, the disease tends to become milder as age advances. In Table 1, the duration of life in fatal cases treated before and after June, 1914, is compared for the first decade, the second decade, the combined third and fourth decades, and the combined fifth and sixth and seventh to ninth decades. The evidence presented by the table is decidedly encouraging, because it shows that the increase in duration of life is not only common to all decades, but, in fact, is greatest both absolutely and pro rata in the decade that is most severe, namely, the first.

TABLE 2.—DECREASE IN DEATHS DURING FIRST YEAR OF THE DISEASE

	Total	Deaths, First Year, per Cent.
Massachusetts General Hospital, 1824-1898	69	68
1898-1914	21	41
E. P. J., 1898-1914	331	18
1914-1922	569	12

DECREASE IN DEATHS DURING THE FIRST YEAR OF DIABETES

The change in treatment in diabetes is registered by the decreasing number of patients who succumb during the year following the onset of the disease. Until 1898 at the Massachusetts General Hospital, 68 per cent. of the patients who died showed a duration of less than one year, and even in the subsequent fifteen years this proportion was as high as 41 per cent. Returning to my own series of 331 fatal cases before June, 1914, 17.5 per cent. succumbed during the first year; but of 569 fatal cases since June, 1914, the percentage has fallen to 12.

TABLE 3.—DIABETIC PATIENTS TREATED IN HOSPITALS FROM APRIL 1, 1919, TO DEC. 31, 1921, ON JAN. 1, 1922

Cases, total	536
Cases, traced	508, or 95 per cent.
Deaths in hospital	11, or 2 per cent.
Deaths in and outside hospital	118, or 23 per cent.

Let us consider separately the general and first year mortality in hospital cases. Of the 536 patients treated in private hospitals between April 1, 1919, and Dec. 31, 1921, it has been possible to trace 95 per cent. Of these, 77 per cent. were known to be alive this January, and 23 per cent. were known to have died. Of the fatal cases in this group, the mortality during the first year of the disease has been 16.2 per cent. Eleven of the 536 patients under hospital treatment died in the hospital. Among these few cases, the mortality for the first year of the disease was 27 per cent. The first year of diabetes is still the danger zone. Two of the three patients who make this 27 per cent. had previously been treated with excessive overfeeding, and especially with overfeeding with fat; the third simply broke diet, came into the hospital one morning, and died the same evening.

TABLE 4.—DURATION OF LIFE IN FATAL CASES OF DIABETES TREATED IN HOSPITALS FROM APRIL 1, 1919, TO JAN. 1, 1922, ARRANGED BY DECADES

Decades	Years	No. of Cases	Duration of Life, Years
1	0- 9	10	1.6
2	10-19	16	2.8
3-4	20-39	43	5.3
5-6	40-59	27	6.2
7 8	60-79	18	3.3
1-8	0-79	114*	4.5

* Four cases not included, as date of death is not known.

EVIDENCE REQUIRED FROM NEW METHODS OF TREATMENT

Today, new methods of treatment of diabetes are desired which will enable diabetic patients to live on the average more than six years, and which will enable those who are under 60 years of age to live for periods in excess of those cited for their respective decades. It is a minimal requirement that the advocates of any new method of treatment give evidence that the duration of the disease will exceed the Boston average of 5.3 years. Secondly, any new method of treatment proposed must demonstrate that no deaths will occur with it during the first year of the disease. Thirdly, it may be added in anticipation of what follows that any method of treatment proposed and any change in methods of treatment of acid intoxication must demonstrate that the mortality from coma among patients treated in hospitals shall not exceed 1 per cent.

In concluding this statistical part of the paper, it may be added that 68 per cent. of the patients before June, 1914, died of coma, and 55 per cent. of those who have died since that date. Details of causes of death of the entire series are not yet complete.

THE RELATION BETWEEN OBESITY AND DIABETES

To the well-known subject of the relation between obesity and diabetes, Mr. Mead of the Lincoln National Life Insurance Company has recently made a valuable contribution which he permits me to mention. He finds that the frequency of constitutional diseases in general increases as age advances and particularly as obesity advances, but that diabetes is to this extent an exception to the rule: its incidence increases with age only with the fat, while in the thin it remains constant throughout life. This observation, if confirmed, will be of great interest in many ways, particularly in the study of the etiology of diabetes. This shows that diabetic patients, young and old, are akin, and the earlier clinicians were right in sharply differentiating the fat and the thin patient with diabetes.

Never should it be forgotten that diabetic patients whose condition is discovered accidentally on application for insurance live longer than the average. If this is true, how much longer should patients live when the disease is sought out and discovered by design? This is the hope for the future.

PULSE AND BASAL METABOLIC RATES

In the work on diabetes at the Carnegie Laboratory, it has been noted how closely observations on the pulse rate of patients with diabetes have corresponded with their metabolism. The pulse rate is not infallible as a guide; but, if properly taken, it gives a correct picture of the metabolism in the great majority of cases. It should be utilized more. Persons with a slow pulse in general have a low metabolism, and require less food than those with a rapid pulse.

The average metabolism of the diabetic patients studied before June, 1914, was 12 per cent. above standard, and of those studied after June, 1914, 11 per cent. below standard. If one uses the Du Bois instead of the Harris and Benedict standard one simply lowers the scale about 5 per cent. The extremes of metabolism in the 105 cases studied are + 32 and — 40 per cent. Attention has already been directed to the nearly equivalent duration of life in the laboratory cases before and after June, 1914. The lesson is plain: a metabolism whether much above or below the standard is dangerous.

HOPEFUL EXPERIMENTS WITH LEVULOSE

An investigation was also made at the laboratory of the rise in metabolism of diabetic patients after food. This was found to be considerable. No matter how high or how low the metabolism, the diabetic patient responded with an increased production of heat. In this regard he behaved much like the normal. When levulose was given, he apparently reacted to it even more vigorously than the normal. At least our observations, numbering fifty-one, showed that after levulose the metabolism of the diabetic patient will increase on the average 17 per cent., during the first two and three-quarters hours, while the increase in metabolism for normal persons under similar conditions has been shown to be but 11 per cent. It is therefore possible that some way may be found by which levulose and foods which contain levulose can be utilized in the diabetic dietary more than is now the case.

Further investigations on levulose are also indicated, because some of our experiments with luvulose with certain diabetic patients show that the respiratory quotient rises to an unusual degree. Thus, in five experiments a respiratory quotient was obtained over 1.0, and such a quotient would at least suggest the conversion of a portion of the levulose to fat. The individuals, however, who showed these quotients were of a peculiar type. The cases were severe, the undernutrition was extreme, the metabolism was far below normal, and the high nitrogen excretion per kilogram of body weight suggested the prelethal state sometimes observed with fasting animals. The exceptionally high quotients obtained with levulose were found in the same type of patients who also showed unusually high quotients in the fasting state, as observed both at the Russell Sage Laboratory and in Boston. It has always been difficult to account for such high quotients. Various theories have been advanced in explanation, such as (1) an oxidation of beta-oxybutyric acid and its derivatives; (2) the oxidation of the carbohydrate in the protein molecule with the retention of the nitrogenous portion of the molecule, in support of which view we have some meager experiments, and (3) the conversion of carbohydrate into fat, already mentioned.

TEMPORARY MENTAL RETARDATION

Jointly at the Nutrition Laboratory and at the New England Deaconess Hospital, Walter R. Miles and Howard F. Root have recently conducted a series of mental tests with diabetic patients. They allow me to state that by these tests the mental activity of these patients is shown to be from 15 to 20 per cent. below normal. On the other hand, they found the encouraging fact that with treatment the mental capacity definitely improved. In other words, when the stock of a railroad falls it may happen that its president will be suspected of having diabetes. At any rate, boards of directors would do well as a precautionary step before they elect a new president to demand that the candidate be able to secure an insurance policy equivalent to the proposed salary.

PRESERVATION OF BLOOD FOR ESTIMATION OF BLOOD SUGAR

In passing, attention may be called to the great usefulness of a trifling clinical procedure. Frequently one wishes to perform a blood sugar test, but the laboratory is not available. Denis showed that if one adds one drop of 40 per cent. solution of formaldehyd to each 5 c.c. of blood the specimen can be safely preserved, even at office room temperature, for three days for a Folin sugar test. Such a specimen is suitable for a test of the nonprotein nitrogen, but not for the urea nitrogen.

TREATMENT

In any consideration of treatment for diabetes, one must not lose sight of the enormous number of patients with diabetes and the necessity of treatment by simple methods. The general practitioner must treat the million American diabetic patients, and the general practitioner must have simple measures at his disposal. The justification for the test and maintenance diet card I now use is that in practice it has shown a number of general practitioners and patients how to get the urine sugar free without danger, and—what is less dangerous but more difficult—how to enlarge the diet without the patient instantly showing sugar again; and finally, that of 536 recent cases treated in hospitals, the total deaths in the hospitals have been eleven. In Table 5 these diets are shown.

EXPLANATION OF TEST AND MAINTENANCE DIETS

The test diets are designed for the period during which the patient becomes gradually sugar free. On successive days, advances can be made from Test Diet 1 to Test Diet 5, and if on the fifth day the patient is not sugar free, fasting can be employed for one or more days.

The maintenance diets are for use as soon as the urine of the patient is free from sugar. If this occurs as a result of Test Diet 5, the patient begins with Maintenance Diet C 1 PF 1. The actual articles of food representing the carbohydrate in the diet for the first day are given under the heading of carbohydrate, for convenience described C 1, 2, 3, etc. The articles referred to under protein and fat are under that heading, which for the same reason is described as PF 1, 2, 3, etc. Certain patients with diabetes can proceed steadily day by day from C 1 PF 1 to C 12 PF 12, without showing sugar. If sugar does appear in the urine, one should drop back two days in the carbohydrate group, wait till sugar free, and then advance in the protein and fat group until sufficient calories are obtained. Thus, if sugar shows on C 7 PF 7, the diet prescribed would be that included in C 5 PF 7, and thereafter progression could be made in the PF group until from 25 to 30 calories per kilogram of body weight was furnished the patients.

TABLE 5.—DIABETIC DIETS

Diets With Which to Become Sugar Free	Diet in Grams: Carbohydrate	Protein	Fat	Calories	Test Diets: 5% Vegetable	Orange	Oatmeal	Shredded Wheat	Uneeda	Potato	Bread	Egg	Cream 20% Fat	Bacon	Butter	Meat	Fish	Skimmed Milk	Name of Diet
T. D. 1	189	89	15	1,247	200	300	...	1	...	240	90	...	...	...	...	90	120	480	1
T. D. 2	102	58	0	640	300	300	...	1	...	120	...	...	...	...	...	...	180	300	2
T. D. 3	64	53	0	388	300	300	...	...	...	60	...	...	...	...	...	...	90	240	3
T. D. 4	36	27	0	252	300	200	...	...	...	...	...	...	...	...	...	...	90	120	4
T. D. 5	15	5	0	80	300	50	...	...	...	.....	...	...	...	...	...	...	...	...	5
Maintenance Diets					Carbohydrate (C)							Protein and Fat (PF)							
C 1 + PF 1	10	11	6	138	300	...	...	...	...	...	...	1	...	...	...	...	...	...	1
C 2 + PF 2	22	13	18	302	300	100	...	...	...	...	...	1	60	...	...	...	...	...	2
C 3 + PF 3	32	24	24	440	600	100	...	...	...	...	...	2	60	...	...	...	...	...	3
C 4 + PF 4	42	29	39	635	600	200	...	...	...	...	...	2	60	30	...	...	...	...	4
C 5 + PF 5	52	32	53	813	600	200	15	...	...	...	...	2	60	30	15	...	...	...	5
C 6 + PF 6	63	43	65	1,009	600	200	30	...	...	...	...	2	90	30	15	30	...	...	6
C 7 + PF 7	73	51	70	1,126	600	300	30	...	...	...	...	2	90	30	15	60	...	...	7
C 8 + PF 8	83	60	88	1,364	600	300	30	...	2	...	...	2	90	30	30	90	...	...	8
C 9 + PF 9	96	63	94	1,482	600	300	30	½	2	...	...	2	120	30	30	90	...	...	9
C 10 + PF 10	107	64	94	1,530	600	300	30	1	2	...	...	2	120	30	30	90	...	...	10
C 11 + PF 11	131	76	99	1,719	600	300	30	1	2	120	...	2	120	30	30	120	...	...	11
C 12 + PF 12	155	80	99	1,831	600	300	30	1	2	240	...	2	120	30	30	120	...	...	12

Food	Weight in Gm.	Approximate Equivalent
Orange	300	One and one-half large size
5 per cent. vegetables	300	Three moderate portions
Skimmed milk	480	One pint, 16 ounces
Fish	120	Two small portions
Potato	240	Two medium-sized potatoes
Meat	90	One moderate portion
Bread	90	Three small slices
Oatmeal, dry weight	30	One large saucerful
Cream	60	Four tablespoonfuls
Bacon	30	Four crisp strips
Butter	30	Three medium portions

Occasionally the patient becomes sugar free on Test Diet 2, 3 or 4. It is then unnecessary to begin with Maintenance Diet C 1 PF 1. Instead, one may begin with a maintenance diet which contains a value for carbohydrate similar to that of the test diet on which the patient became sugar free.

If the protein and fat are too high for the individual on a given day, it is easy to advance the carbohydrate and decrease to an earlier day on protein and fat.

The plan is arbitrary, and the majority of cases will demand some modification. It is arranged to enable patient or nurse to see in advance the general plan of treatment.

Because a routine method of treatment of diabetes has been proposed and just because in it an attempt has been made to utilize many of the ideas of others, far be it from my intention to convey the impression that it is desirable for all to adopt this plan. It is infinitely more useful that each investigator adhere to his peculiar methods; then gradually the best will be found.

Gradual Change of Diet.—Another guiding principle in treatment of the diabetic patient for us all should be to do no harm. It is unfortunately still no rarity to see a patient who, though excreting surgar for months, has preserved fair health and then under treatment is made worse. By no means do I plead innocence. A woman develops diabetes in August, consults a physician in February, the diet is suddenly changed, and death occurs the next week. A man with diabetes of five years' duration, who has poor kidneys, is suddenly fasted and given whisky on a Tuesday; anuria develops on Thursday, and he dies on Sunday. Sudden changes in diet are too dangerous for me to employ, and, I believe, too dangerous for the general practitioner.

Reduction of Fat to Avoid Acid Poisoning.—Undernutrition lessens acid poisoning, presumably by lowering the high metabolism of acidosis which the completed data of the Carnegie series now show definitely to accompany that state. Of the three foodstuffs which can be restricted to bring this about, it is wisest to omit fat. (1) By so doing, less material is available for the formation of acid bodies. (2) It is the most convenient and least annoying way in which to reduce the calories. (3) Fat is more likely to upset the stomach of the patient on the verge of coma than carbohydrate or protein.

Should Alkalis be Employed? So far as I am concerned, No! Of more than 600 cases of diabetes treated in hospitals since April 1, 1919, to April 1, 1922, there have been but sixteen deaths, and of these, but four or, including one doubtful case, five from coma. As none of the patients have received alkalis, and as 99 per cent. have thus escaped coma, no reason is apparent for a change in present methods. It is, however, freely conceded that very likely most of the harmful effects of alkalis in the past have been less due to alkalis than to the accompanying sudden changes of diet on the one hand, and the excessive amount of alkali employed on the other, both of which measures upset the digestion.

Is Undernutrition Exaggerated? With undernutrition, the lives of my patients with diabetes have been prolonged at least a year. The principle is too good to renounce. At first it was carried too far, and perhaps is still carried too far; but in treating 1,000 diabetic patients it is safer to urge them to eat too little rather than to urge them to eat too much. One should remember that there is a human element with which to deal. One is not practicing medicine in a laboratory. One's influence must be thrown pro or con. There are few diabetic patients starving themselves to death from not eating, but there are many who are in the process of starving themselves to death while eating too much by voiding pounds of sugar in the urine. Many of these escape actual death by starvation only because they die prematurely of coma.

Proportions of Carbohydrate, Protein and Fat.—How shall one apportion the carbohydrate, protein and fat in the diet of a patient with diabetes? My conception of the problem is always to hold in mind the diet which an imaginary healthy twin of the patient would eat. Each weighs 60 kg. (132 pounds). The healthy twin takes carbohydrate, 300 gm.; protein, 75 gm., and fat, 50 gm., making 2,040 calories. If the urine and blood of the patient allow, it is more natural to give a diet approximating that of the twin's, i. e., carbohydrate, 150 gm.; protein, 75 gm., and fat, 120 gm. Radically to change the diet and give carbohydrate, 30 gm., protein, 40 gm., and fat, 170 gm., appears unreasonable because unnecessary. It would appear safer to hold to a diet as near as possible to that of the healthy twin, and to diverge from it only gram for gram, as one fights the disease. I cannot escape from the impression that a diabetic patient whose carbohydrate is once radically lowered and fat radically raised suffers from the process and seldom regains a high carbohydrate tolerance. Leyton has called attention to a similar conviction when protein has been allowed in unlimited extent.

Progress in Chiropody.—The 2,000,000 years of diabetes demand new methods. These patients in later years of life will not die of coma or of inanition, but a large number will die of gangrene and infections. It is eminently worthy of mention that my assistant, Howard F. Foot, recently addressed the Massachusetts Chiropody Association on diabetic gangrene. It is particularly worthy of note that the society was progressive enough to take the initiative in extending the invitation. We should grasp any opportunity to stimulate the interest of chiropodists in diabetes. A short time ago at the hospital there were four diabetic patients with only two legs in all instead of eight.

Concentrated Instruction.—Instruction of the diabetic is essential, and hospital instruction most desirable; but instead of treating one diabetic for four weeks in a hospital, one should consider the advisability of treating two diabetics for two weeks, or four diabetics for one week, or even a larger number for a week end. One should plan for the greatest good to the greatest number. By simple methods in a few days the willing patient can be taught much. A prolonged stay in a hospital is often bad for these patients. They become too introspective and too anxious to experiment constantly with diet.

Instinct.—In our precise prescriptions of food, sight is often lost of the patient's instinct, that most valuable attribute of the human race. This is wrong. One should in some way utilize this feature and in some way allow variations in the quality of food, according to the patient's own desires. Just how this is to be brought about it is difficult to say; but, in general, the patient's instinct should be developed and guided, not scorned, and he should be taught to utilize it; he should never eat needlessly.

IS TREATMENT OF DIABETES WORTH WHILE?

Statistics showing a measurable improvement in the treatment of diabetes have been given, but the real reason why I think it is worth while to continue to treat diabetics despite 900 deaths is this: For about two years I have had under my care a physician's daughter and a workman's son, each with diabetes, and each an only child. Each family lost a former only child with the disease. These parents realize only too well the situation. They seek comfort for their children. Previous experience taught them to care only for comfort, not for life. With the adoption of present day methods of treatment, the living children are so much more comfortable in the eyes of their parents than were the other children now dead that the diet prescribed has been followed with scrupulous care. In adopting this course, not only have they obtained some measure of comfort for their children, which they sought, but with the bright news which comes from Toronto a hope for life, which they hardly dared to anticipate.

THE PROPHYLAXIS OF VENEREAL DISEASE *

GEORGE WALKER, M.D.
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Metchnikoff, after discovering the possibility of communicating syphilis to apes, began to try various agents with which to prevent infection. Most of the well known antiseptics at that time were tested, including various compounds of mercury, and it was finally concluded that a salve of 33⅓ per cent. calomel ointment, when thoroughly rubbed into the site of inoculation, was the most effective agent. After this technic was perfected, he made thirty consecutive inoculations with thirty consecutive successes. He rubbed this ointment thoroughly into the freshly inoculated surfaces, and found that when applied within two hours it was effective in nearly 100 per cent. of instances, and in some cases it was effective when the time of application was extended up to eight hours.

After the completion of a large number of these experiments on apes, a medical student, Maisonneuve, volunteered to have the experiment done on himself. His left arm was scarified, and material from an active chancre was rubbed into the wound. After one hour the calomel ointment was applied and rubbed in thoroughly for five minutes. No infection followed. Two monkeys, which were used as controls, were infected. At the end of these experiments Metchnikoff asserted that this ointment would prevent the infection with syphilis in almost every instance.

Neisser took up the work of Metchnikoff and went to Java, where he could obtain an unlimited supply of animals. He undertook the work on a very large scale, and although confirming the prophylactic value of mercurial salts, he was led to believe that the calomel should not be mixed with a fatty base, since the resulting substance was not readily applicable to moist tissue. In its place he favored an aqueous solution of mercuric chlorid.

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* Owing to lack of space, this article is abbreviated in The Journal. The complete article appears in the author's reprints.

It should be said that his experimentation with calomel ointment was largely confined to the weaker strengths, that is, he used the 10 and 20 per cent. almost all the time, whereas Metchnikoff had definitely concluded that nothing less than 33⅓ per cent. could be relied on. Neisser's conclusion regarding the calomel ointment was that it was very effective and should be made use of by the public, but that it should not be called infallible.

The use of calomel ointment as a prophylactic agent was introduced into the navy in 1908, and proved at once an effective agent against syphilis. Of the various organic silver salts used against gonorrhea, protargol and argyrol proved to be the most effectual. The official prophylactics, then, as used by the navy, consisted of a 33⅓ per cent. calomel ointment to be used externally, and a solution of 2 per cent. protargol to be injected.

In order to simplify the treatment, an attempt was made to create a compound salve which would be germicidal for more than one organism. To accomplish this, phenol (carbolic acid) and camphor in strength of 3 per cent. were added to the calomel ointment. This preparation was used at naval stations, and on ships and seems to have had a very satisfactory effect.

Bachman, after considerable research, concluded that tricresol added to the calomel ointment was superior to phenol. In fact, he thought it superior to any other agent. He tried this on a number of persons who voluntarily exposed themselves to disease, and reported that it was preventive in almost every instance. Colonel Harrison in London has lately introduced thymol as an addition to the calomel ointment. After many laboratory experiments, he concluded that the thymol is distinctly gonococcidal.

After the introduction of prophylaxis into the navy, a few of the organizations made it compulsory, but most of them left it to the discretion of the men; the results have varied greatly. In commands in which the superior officer and medical officer were interested in the subject, and special pains were taken to educate the men concerning it, the treatment has proved a marked success. But in units in which little attention was paid to it, the reverse is true.

One material handicap against its satisfactory use in the navy is the fact that men are given extended shore leaves and all night leaves with no facilities, while away from the ships, for taking these treatments. This makes the time between exposure and treatment so long that the agent loses much of its value. To meet this disadvantage, the navy introduced a prophylactic tube which could be carried by sailors when on leave. This, however, does not always achieve its purpose, owing to difficulties which will be set forth later.

INTRODUCTION INTO THE ARMY

One year after prophylaxis had been employed by the navy, it was introduced into the army. The treatment was not made compulsory, and the men were allowed to use it or not, as they wished. It was not urged in all commands, and it was only in those in charge of medical and commanding officers who were honestly convinced of the wisdom of prophylaxis that it was found definitely beneficial. The general rate of morbidity was not lowered very materially until it was made compulsory by fixing a penalty for those who contracted venereal disease and who had not taken phophylaxis. After this was done there was an immediate and material reduction in the venereal rate of the army in the United States, until it finally fell from 156 per thousand, the year before prophylaxis was used, to 76 per thousand about the fourth year after its introduction.

PROPHYLAXIS IN THE AMERICAN EXPEDITIONARY FORCES

Soon after the American soldiers landed in France, it became apparent that the most rigorous measures would be necessary in order to reduce the enormous number of infections that was occurring. General Pershing began the campaign by issuing General Order No 6. This order penalized every case of venereal disease regardless of whether the patient had taken prophylaxis or not. Unfortunately, this enactment exerted a deterring influence on prophylactic therapy. This fact was brought to the attention of the commander-in-chief, and he agreed to a more stringent order by which failure to take prophylaxis was also punished.

After a close study of conditions in France, it became evident that, in order materially to limit venereal infection, our chief reliance would have to be placed on prophylaxis. At the same time it was, of course, intended to do everything possible to limit contact. To meet these conditions, General Order No. 77 was issued. It placed houses of prostitution in port towns out of bounds, and set a standard for the equipment, location and management of prophylactic stations. It also instructed the medical officer and line officers to use all means in their power to restrict the occurrence of venereal disease.

The chief difficulty in getting these plans carried out was the scarcity of material and lack of interest on the part of some medical officers. They did not give the stations personal attention, nor did they select men of the proper type to have charge of them. In many instances they seemed to regard the whole problem of preventing venereal disease as beneath their dignity. As an inevitable consequence, many of the stations were most insanitary, and such treatment as was attempted was more likely to produce infection than to prevent disease.

It was the duty of the commanding officer to see that all of his men had convenient access to a suitable station. All organizations were, therefore, required to institute stations as soon as possible after they arrived at their billeting area. In addition to the organization station, large central stations were established in cities where many soldiers were billeted, or where many went on leave. These central stations were always more elaborately equipped and better in every way than those of the organizations, and at Bordeaux it was found that the average time between exposure and treatment was thirty-one minutes.

As the reports came into the chief surgeon's office at Tours, it was noted that a large number of the men who had developed venereal disease had failed to take prophylaxis, and that too large a proportion of those who had taken it became infected. In other words, to a certain extent, prophylaxis seemed to have failed. In order to fix the causes for this state of affairs, a memorandum was issued directing that each case be investigated and that the information thus obtained be sent to the office for compilation and study. This disclosed the fact that many of the stations were poorly equipped, poorly run and inadequately planned. The specific reasons will be dealt with in detail later.

The soldiers were instructed in the proper use of prophylactic treatment, and it was especially made clear to them that it was not injurious in any way. The fact was stressed that it did prevent disease in nearly 100 per cent. of instances when properly administered within a period of two hours. Discussion of the treatment was always serious, and in no case was any levity permitted on the part of the lecturer; nor was anything said that might be construed to mean that the soldiers could have intercourse at will simply because they could be protected against disease. An honest emphasis was laid on measures to prevent contacts, and no excuse or toleration was allowed for exposure, but it was clearly impressed on the man that if, in spite of this advice, he did expose himself he should take the treatment in all cases. In addition to the force of moral suasion, we had a disciplinary requirement that penalized every man suffering from venereal disease specifically for not having taken prophylaxis.

In studying the attitude of the men toward prophylaxis, it was quite evident, during the early months of the war in France, that they had confused in their minds the taking of prophylaxis to escape court-martial with the taking of prophylaxis to prevent disease. In other words, the main object for taking prophylaxis was to escape punishment rather than to escape disease. It is believed that the great emphasis which had been laid on the punishment side was responsible for this. After a time, it was noticed that educational measures were having effect and the point of view of the men was being changed. They were beginning for the first time to believe in prophylaxis for its preventive effect.

PROPHYLAXIS IN CIVIL LIFE

But, granted that prophylaxis may become practically universal in the army, where it can be made compulsory, how about its success in civilian life? At once the objection will be raised that when compulsion is absent the ordinary man will go on his own sweet, careless way. At first sight this may seem very plausible, but let us see how matters stand with the navy.

The answer to this was strikingly shown in the case of the sailors. In the navy, venereal disease was not penalized, nor was the taking of prophylaxis compulsory. The medical officers had to depend on educational measures, and they emphasized and elaborated the prophylaxis as a protective measure. As a matter of fact, they succeeded better than was expected. After the sailors had begun to employ it they were convinced, from their own experience, of its value and continued to use it.

From several investigations made through questionnaires, personal investigations and the like, it was shown that nearly all of the men who exposed themselves in France took prophylaxis at one time or another. Not all of them took it after each exposure, but about 75 per cent. of them did. Elsewhere I have published a table showing the reasons why prophylaxis was omitted in 3,069 cases of venereal disease. In brief, it might be said that carelessness, often emphasized by the effects of alcohol, and not infrequently the absence of a station or other facilities, were responsible.

FAILURE OF PROPHYLAXIS TO PREVENT DISEASE

Approximately 55 per cent. of venereal disease developed after the patient had taken prophylaxis; these cases have been spoken of as failures of the treatment. But investigation showed that most of these were among men who took the treatment after the three hour limit, after remaining with women all night; when they were drunk, and at prophylactic stations which were improperly equipped and inefficiently conducted.

In order to get additional evidence concerning the matter, a careful study was made of 3,042 venereal infections assembled at various camps. These men were carefully interviewed by special medical officers. It must be remembered that the evidence of their having taken prophylaxis was based entirely on their own statements.

This investigation revealed that 60.72 per cent. asserted that they had contracted venereal disease after having taken the prophylactic treatment. A further careful questioning disclosed a number of reasons for this failure. Only the most important will be mentioned. In sixty-two cases the men were definitely intoxicated; in 211 the treatment was incomplete; in 389 it was hurried, that is, sufficient time was not given to the injection or to the application of the calomel ointment; in 685 it was taken more than three hours after the exposure; in 133 the date of onset of the disease did not correspond with the time claimed for exposure.

In this way, we are able to ascertain the reasons for the "failure" in 1,480 cases, and reduce the percentage from 62.72 to 12.06. Nor can we be certain that all of the latter were really instances of true failures, though we have no evidence to the contrary. It is of interest to note that among the 685 patients designated as being over the three-hour limit, 252 had remained all night with the girl, and sixty-two were spoken of as being quite drunk. In addition to those, and included variously in the statistics given, 170 could be spoken of as intoxicated, meaning that it was noticeable from their actions that they had been drinking. It is furthermore worth while to note that of the total number of venereal cases studied, 1,155 men had intercourse, at the time of infection, more than once. The number of these who did or did not take prophylaxis was not calculated.

THE PROPHYLACTIC RATE AS AN INDEX TO THE EXPOSURE RATE

General inquiry, made in a number of ways among the men, proved that almost all who had exposed themselves in France had taken prophylaxis at one time or another, but they had not invariably taken it after each exposure. A questionnaire in one city, answered by 353 men who acknowledged that they had had intercourse, disclosed the fact that only twelve of them had never taken prophylaxis at any time. This would indicate, therefore, that the prophylactic rate, in an organization, corresponds pretty closely to the exposure rate.

At Tours, with 353 men who had exposed themselves, prophylaxis had been taken 1,162 times, or 3.29 times per man.

At St. Nazaire, with 10,140 men, it was used 47,220 times, or 4.65 times per man.

Among the Thirty-Fifth Engineers, at La Rochelle, there was a group of forty-two men, each of whom had taken prophylaxis more than ten times during a period of four months; four of these had taken it more than twenty times, and one, twenty-seven times. None of them had contracted venereal disease.

THE USE OF THE PROPHYLACTIC PACKAGE

The United States Navy discarded the package after Secretary Daniels declared against it. The United States Army had used it for some time and still permitted it, but the officials had never laid very much stress on it, mainly for the reason that the men would make use of the package instead of going to the stations. There were a few officers in the army who took the same view as Secretary Daniels. These believed that it formed a kind of invitation to the men to have illicit sex relation. The packages were not given free, but were furnished at a nominal cost, and only on application.

The American Army in France at first did not issue tubes at all, but allowed the Red Cross to do so. These were collapsible gelatin tubes containing 33⅓ per cent. calomel ointment, 1 per cent. phenol, and 1 per cent. camphor.

After the armistice, the issuance of these was not forbidden, but it was not heartily favored by the chief surgeon, and consequently they were given out only in a few places, and not in sufficient number to warrant any reliable data concerning their usefulness. During this post armistice period, owing to the large number of men on leave, the chief surgon sanctioned their use for men who were traveling, and who were not able to have station facilities for prophylaxis.

After a trip of inspection to the leave areas, General Pershing sent out a telegram that all organizations should issue these packages to their men. Immediately there was a very general demand for them, but the supply was soon exhausted, so that only a few organizations could be supplied.

It was stated, by some officers, that these tubes proved to be almost worthless in the prevention of disease. It is my opinion that they were not as efficacious as a station, because in many instances no washing facilities and no trained assistant were available, and that the combined ointment was not so good as the other form of treatment. But I wish to state emphatically that there are no collected statistics, nor are there any available in the American Expeditionary Forces, which have any valuable bearing on the efficiency of the tube. All such statements, so far as concerns the American Expeditionary Forces, are simply based on some one's unauthoritative opinion.

The Australian army issued what was called the blue packet. It contained three tubes of 33⅓ per cent. calomel ointment, and one tube of 10 per cent. argyrol. One of these was given to each man as he went on leave.

The British army adopted small collapsible tubes of calomel ointment with 2 per cent. thymol. They were issued on application, and were employed in England to a considerable extent but not much in France.

The French apothecaries put up a number of different kinds of packages. One made by Roberts and Company, in Paris, under the name of "Dreadnought," contained one collapsible tube of calomel ointment 33⅓ per cent. and one tube containing 1 dram (4 c.c.) of 10 per cent. argyrol. The price, 5 francs, was almost prohibitive for the enlisted man; they were, however, used to a considerable extent by the officers. Individual packets were prepared in large numbers by medical officers, who gave them out to line officers. These could hardly be called packets, for they usually consisted of a bottle of protargol, 2 per cent., a syringe, and a small box of calomel ointment.

The prophylactic outfit is not as good as the station; but when it contains all of the materials necessary, with proper directions as to their use, there is no reason why it would not be almost as efficacious. At any rate, even if it is not as good, it is far better than nothing, and should be used in every instance by men who have not access to stations. If it prevents in only 20 per cent. of the cases it is of value.

The proper package should contain one collapsible tube of 33⅓ per cent. calomel ointment, made up with lanolin and lard; one collapsible tube of 10 per cent. argyrol in a solution of equal parts of water and glycerin; one piece of soap for a thorough washing, and one 7½ grain (0.5 gm.) mercuric chlorid tablet, with directions for making the solution and washing after the cleansing with soap and water. In addition to this, concise directions, with illustrations of each step, should be contained in the box.

Some work bearing on the effects of antiseptic agents in the prevention of chancroid was done at Base Hospital No. 9 in Paris, but there were so few experiments that the results did not prove anything. The indications were, however, that a thorough washing with soap and water was the most effective agent against the occurrence of chancroid. In view of the large number of chancroids found in France, and on account of its never having been proved that Ducrey's bacillus can be destroyed by calomel ointment, it was urged that a thorough washing be insisted upon in every instance, and that this be followed by an irrigation of 1: 1,000 mercuric chlorid. As far as could be observed from the figures, this addition to the protargol and calomel ointment was effective for all disease in more than 99 per cent. of cases when taken within the first hour.

DOES THE KNOWLEDGE OF PROPHYLAXIS TEND TO INCREASE SEXUAL EXPOSURES?

As I have stated, up to the present, there is very little statistical evidence to prove whether or not the knowledge of prophylaxis increases or decreases sexual exposure. No figures were recorded in the American Expeditionary Forces on this point, so that all of the statements as to the increase of exposures among the soldiers are based solely upon opinions and probabilities.

Bachman found that, in a given number who took prophylaxis and in a given number who did not take it, the exposure rate was about the same.

It has been claimed by a former secretary of the navy and others that the prophylactic tube is especially harmful, in that it acts as a suggestion to sexual intercourse.

I believe that just the contrary is true. If a man has a prophylactic tube in his pocket, it suggests to him the prevention of disease, and brings to his mind the fact that the girl with whom he may have sex relation is probably infected. This picture of disease undoubtedly detracts from the glamour and romance of the association, and makes him face the sordid and unpleasant spectacle of venereal disease and its terrible consequences.

It is, moreover, believed, and on evidence, that the more prophylaxis is urged and talked about, the more will the average man associate in his mind the danger of disease with sex relation. Whenever these two things, disease and illicit intercourse, become strongly coupled, the force of temptation is modified.

Another reason for the belief that the propaganda of prophylaxis does not increase exposures is this, that the danger of disease has been largely laid at the door of the professional prostitute. So long, therefore, as the man does not go with this class but cohabits with women who are known to him, he feels that there is no danger of infection, and consequently prophylaxis does not enter into the consideration. In France, among the principal reasons for not having taken treatment was the assertion that the girl was not a public woman and consequently was free of disease.

It should be recognized that since the professional harlot has been legally banned in America, men do not fear the clandestine type, for they are persuaded by the woman that she is not promiscuous and is perfectly safe.

The idea to be firmly implanted in every man's mind is that every woman, except his wife, with whom he may have intercourse is dangerous. He must be made to believe the fact that practically all women addicted to illicit sex relation in any degree are promiscuous. The unmarried woman who has sex relation with only one man is very rare.

After careful consideration, I do not believe that the advocacy of public prophylaxis will, in any way, increase immorality. On the contrary, I firmly hold that it will decrease it. The prevention of disease must inevitably promote the general well-being of society, and in no other way can wholesome thinking and collective morality be so powerfully stimulated as by constant consideration of this fact.

RESULTS OF PROPHYLAXIS

In 126,000 treatments given in Base Sections No. 2, 1.2 per cent. were failures. In 27,000 treatments in Base Section No. 1, 0.8 per cent were failures. In 9,642 treatments in the Le Mans area, nineteen cases of venereal disease were discovered. In 11,400 treatments in the La Rochelle district there were only nine cases of disease, while in 6,524 treatments at a station in Brest, only five infections developed. I made a careful study of the records of the last named station, and can vouch for them as correct. One base hospital reported a series of 800 treatments without an infection. In Base Hospital No. 9, 269 treatments were given over a period of nine months with only two cases developing. One officer sent in a report comprising a study of 10,000 cases in which prophylaxis had been taken within the first hour; the failures were 0.08 per cent.

TABLE 1.—RESULT OF PROPHYLAXIS AT NORFOLK

Time After Exposure	Venereal Prophylaxis	Venereal Disease
1 hour	674	—
2 hours	657	4
3 hours	298	2
4 hours	223	1
5 hours	156	3
6 hours	285	4
7 hours	247	5
8 hours	359	16
9 hours	272	9
10 hours	190	10
11 hours	195	13

A study of the combined reports in the whole American Expeditionary Forces showed that, in a record of 242,000 prophylactic treatments, only 1.3 per cent. were failures.

The results among the negro troops are even more convincing than these figures. It was found impossible to induce the negroes to appear voluntarily for prophylactic treatment after exposure. The number of exposures was enormously high, and those who took prophylaxis were very few. A study of one organization showed that 93 per cent. had exposed themselves in two months. These troops had access, for the most part, to the lower grade prostitute, among whom it is known that disease is very widespread, registering almost 100 per cent. The annual rate among the colored soldiers at St. Nazaire had reached the alarming extent of 625 a thousand.

TABLE 2.—RESULTS OF PROPHYLAXIS AT THE ASIATIC STATION

Hours Subsequent to Exposure	Number of Treatments	Number Followed by			Totals	Percentage of Failures
		Gonorrhea	Chancroid	Syphilis		
1	3,453	7	20	4	31	0.897
2	4,400	27	43	3	73	1.659
3	3,104	26	31	3	60	1.932
4	2,034	19	20	2	41	2,015
5	1,216	28	16	3	47	3.865
6	1,179	21	20	1	42	3,562
7	742	13	16	1	30	4.043
8	862	23	18	0	41	4.756
9	534	17	11	1	29	5.430
10	645	10	12	1	23	3.565
More than 10	1,470	30	27	4	61	4.149
Total	19,639	221	234	23	478	2.433

It was decided, after a conference, that we would require all of these men, after returning from liberty, to take prophylaxis. This meant the establishing of a system of compulsory prophylaxis, regardless of exposure.

The rate immediately dropped and within three months it went down to 110. As compulsory prophylaxis was more and more rigidly practiced, and a better system of guards instituted around camps and working places, the rate continued to drop, finally, reaching 35 per thousand per year.

In one organization of 1,800 colored men in St. Nazaire, the new cases per month prior to compulsory prophylaxis had been from 50 to 80; after its establishment, the number dropped materially, varying between 2 and 5. At Brest the rate was reduced from 480, before compulsory prophylaxis, to 48 after compulsory prophylaxis. At Bordeaux, it dropped for the same reason from 325 to 50, and for several weeks it was below 30.

This fine achievement was due almost entirely to the universal use of prophylaxis, since other regulations were just about the same as they had always been. Fifty per cent. of the men were allowed leave from 5:30 to 9:30 p. m., and no new restrictions were imposed.

RESULT OF PROPHYLAXIS IN THE UNITED STATES

The work of Riggs in the United States Navy stands out as among the best, if not the very best, and it was based upon the most careful observation.

His first report from the United States Naval Station at Norfolk, Va., gave the figures reproduced in Table 1. Alcohol was present as a factor in 37.5 per cent. of the cases. Only one patient out of 365 claimed accidental infection of syphilis.

Later Riggs gave an analysis of 19,639 prophylactic treatments, given at the Asiatic Station. These showed 653 venereal infections. It will be seen, from Table 2, that out of 3,453 treatments there were thirty cases of disease, or 0.897 per cent. of failures.

It appears that the proportion of chancroid in the list is very high. According to our observations in France, we found, as already mentioned, that a thorough washing with soap and water followed by a mercuric chlorid irrigation was necessary to prevent chancroid. The absence of this preventive measure may furnish a partial explanation of the question presented by Riggs' statistics.

Surgeon Henry of the United States Navy reported 529 prophylactic treatments with four cases of gonorrhea following; two of these men had received treatment more than twelve hours after exposure, and another did not have an official record of having taken it at all, so that we have only one authentic failure in the 529 exposures. He states further that in a crew of 200 men, no venereal cases were under treatment, a condition that was previously unknown.

W. F. Davidson took special care with his prophylactic station, and reported 127 exposures with one failure. This case was questionable because the gonorrhea did not develop until one month after exposure. In a later series of 317 cases there was not a single failure.

Bachman reports 504 men who had been exposed 1,301 times and who used prophylaxis after each exposure. Of these men, two reported with gonorrhea. There was, in addition, 302 men who had had 763 unprotected contacts. Among these was one case of syphilis, twenty-six cases of gonorrhea and twelve cases of chancroid. The percentage of infection of the first group was 0.25 per cent. and that of the second group, 12.58 per cent.

The number of individual contacts among the 504 men who took prophylaxis was 2.53, and the number in the 302 who took prophylaxis was 2.52 times, so that the number of exposures in each series was about the same.

This also indicates that the feeling of safety of prophylaxis did not encourage sex contact.

Holcomb seems to be very adverse to the use of prophylaxis, and does not wish to view it in a favorable light; but in spite of this he admits that in 1,385 exposures, which were treated within eight hours, only nineteen developed disease, or a percentage of 1.37.

In connection with the report of Holcomb, it must be remembered that the value of prophylaxis must be judged from individual ships, where both the officers and men take an interest in the prevention of disease. On many ships the prophylactic station is a part of the latrine and is just about as uninviting. The men are given all night leave and many week-end leaves, and very little is done to safeguard them from infection by the adoption of either disciplinary or educational measures covering prophylaxis.

Among 1,561 prophylactic treatments given in a camp in the United States, only seven men were infected with venereal disease, and all of these took the treatment twenty-four hours after exposure.

Wolbarst reports an instance of two men who had repeated intercourse with the same girl during one night. She was suffering from active syphilis, and had local lesions on the labia majora and around the anus. One of these men applied to Wolbarst, who used 33⅓ per cent. calomel ointment for five minutes over the places which seemed likely to be infected, and instructed the man to apply the same ointment every four hours. The man who was so treated remained free, but the other one, who had no treatment, developed syphilis.

A hospital steward in the navy became interested in the efficiency of the naval prophylactic tube, and voluntarily exposed himself with a woman who had a chancre on the labium. He used prophylaxis immediately, and escaped infection. Another man who did not use prophylaxis had been infected from the same woman. Three other men had had relations with this woman, and two of them used prophylaxis nine hours later, while the other used nothing. All three were infected. Still another man who had two contacts with her within the space of an hour used the treatment immediately after the last contact and escaped infection.

CONCLUSIONS

The observations in the American Expeditionary Forces, together with the studies which have been made in America, have proved beyond a doubt that prophylaxis is of the utmost value, and the fact has been established beyond doubt that when taken within one hour it is almost 100 per cent. effective.

The fundamental principle in preventing disease is to prevent exposure to that disease; consequently, all measures which would militate against illicit sex relations are to be used. But it is known that this relation can be limited and controlled up to a certain point, after which no prohibitive measures of any kind, or forces of moral suasion, will be effective. It is for this group that prophylaxis should be insisted on.

With this aid, covering 30 or 40 per cent. which cannot otherwise be reached, we are able to talk in terms of the abolition of venereal disease. It is no utopian, unpractical dream to look forward to the time when venereal disease will be rarely seen.

THE DIAGNOSIS OF BRAIN TUMORS BY THE BÁRÁNY TESTS

WITH REPORTS OF CASES PROVED BY OPERATION OR NECROPSY *

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This paper calls attention to and emphasizes the value of a complete ear examination by the so-called Bárány tests as an aid to the neurologist and brain surgeon. Such an examination, when carried out by a skilled otologist, will frequently clear up many of the difficult and perplexing cases, as will be illustrated by the case histories reported. The details of these case reports are unfortunately not complete, since I was merely a consultant and was requested to render an opinion based on my own findings, irrespective of the general history of the case or of the recorded observations by other specialists.

Even at the risk of repetition, it might be mentioned that in the so-called Bárány tests, we examine an additional "special sense"—a sense that cannot be tested and analyzed by the usual methods of neurologic examination. The localizing value of an additional special sense needs simply be mentioned to be fully appreciated by neurologists. Its function is that of sensing body motion. The "end-organ" is in the inner ear and is excited by moving lymph impinging against

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* Read before the Neurological Society of Philadelphia, March 24, 1922.

* This article is abbreviated in The Journal by the omission of several case reports. The complete article appears in the author's reprints.

ciliated hair cells. It is connected with the central nervous system by a most elaborate and extensive network of nerve pathways. These pathways have not all been definitely traced anatomically as yet; however, a sufficient number have been demonstrated histologically and clinically, and these furnish a satisfactory basis for the study and examination of cases. The histologic contributions of Cajal, Bárány, Sachs and others are so definite that they need not be commented on. The clinical observations, however, require more careful discussion. It is known that, when the endolymph in the semicircular canals is set in motion, it produces a certain eye movement. There must be, therefore, a nerve pathway between the semicircular canal stimulated and the eye muscles producing this movement. Similarly, movement of the endolymph produces in the individual a conscious and definite impression of body rotation in a certain direction. This, too, can occur only as a result of impulses traveling along nerve pathways between the ear and the cerebral cortex. These two phenomena—an eye movement and subjective sensation of body rotation, or vertigo—have been demonstrated to be invariably present in a recorded series of examinations totaling almost 100,000. When a lesion occurs along these tracts, stimulation of the endolymph fails to produce these responses. A lesion in one location may abolish one response only, while a lesion in other locations may abolish both responses; still others may cause only a partial impairment or even an exaggeration of the same responses. Examinations of a large number of brain cases over a period of many years have shown that lesions in certain locations produce a definite group of phenomena on stimulation, more definite for some lesions and less definite for others. Thus, tumors located in the cerebellopontile angle give the most constant complex of findings, so constant that in a number of cases in which the neurologic data were most confusing and even indicative of lesions elsewhere, these tests were the only means of localizing the lesions accurately.

The typical picture, in brief, is this: There is total deafness with no responses whatsoever from the horizontal and vertical semicircular canals on the affected side. On the opposite side the hearing is good; the vertical semicircular canals produce no responses at all, while the horizontal canal produces good nystagmus, vertigo and past-pointing. The nonresponsive and deaf ear on the affected side is accounted for by the neoplasm destroying the eighth nerve, while the absence of responses from the vertical semicircular canals of the opposite side is probably the result of pressure. There are many variations from this typical picture, but every case must exhibit: (1) evidence of a peripheral lesion, and (2) evidence of a central lesion, especially pressure against the brain-stem. Such a combination can be produced only by a lesion in the cerebellopontile angle which is, of course, a central lesion; but by destroying the eighth nerve on that side it gives the picture of a peripheral involvement. In many cases in which the neurologic findings are most conflicting, the Bárány findings are most conclusive; in fact, we can say without hesitation that for tumors in the cerebellopontile angle, these tests are practically absolute. Since a large percentage of all brain tumors are located in the cerebellopontile angle, a method that is so helpful in either locating these tumors or excluding them from that region at once becomes of the utmost importance. What is more, we are convinced that these tests would demonstrate the presence of such a lesion in that region months or years before the appearance of the usual definite and discernible clinical data.

TUMORS OF THE CEREBELLOPONTILE ANGLE

The following cases will illustrate these facts:

Case 1.—Mrs. B. S., admitted to hospital, June 17, 1921, with loss of vision and disturbance of equilibration, two and a half years before had experienced a peculiar crawling sensation in her left ear, which was attributed to a cold. A couple of months later the patient became pregnant for the second time, and during pregnancy the ear condition became worse. This pregnancy was marked by continuous nausea and vomiting, whereas the first pregnancy had been absolutely normal.

As the patient advanced toward term, the ear became worse, and after delivery was much aggravated. In September, 1919, she began to have transitory difficulty in maintaining her equilibrium. This was in the form of a tendency to fall to one side or the other, but was relieved by supporting herself against something for a minute or so. Hearing in the left ear became impaired. These attacks continued a few months. In September, 1920, she began to have transitory attacks of blindness. In December, 1920, vision became impaired noticeably between the blind spells, became poorer and poorer, and finally was reduced to light perception. Jan. 11, 1921, headaches of a very severe and intense character developed, lasting a day at a time and returning at intervals of several days. In February, or four months before admission, all vision was lost, and with it the ability to walk alone. She vomited only three or four times during her illness since the last pregnancy. The headaches continued in increasing severity. Most careful neurologic studies were made in a large western city, but apparently no localizing phenomena could be detected, for in May a subtemporal decompression operation was performed with considerable relief.

On admission, the patient was rather worn and ill looking, mentally clear and alert, and not depressed in spirits. She was totally blind, but hearing was not markedly impaired for ordinary conversation.

Movement of the extremities was normal.

There was partial paralysis of the left side of the face, shown by failure to draw up the corner of the mouth on that side as well as on the other side, and a tendency for the upper lid to lag on closing. Sensation was not impaired.

She was totally blind in both eyes. There was right and left internal strabismus. The pupils were dilated and fixed. The conjunctiva was clear and both disks were choked.

The tongue protruded in the midline with no tremor. The teeth were in fair condition.

The biceps, patellar and Achilles reflexes were present and apparently equal on the two sides. The right biceps was not as prompt as the left, but was as forcible. There was no ankle clonus or Babinski reflex. There was slight left hand dysmetria, also adiadokokinesis to a very slight degree on the same side. The heel-to-knee test revealed a slight dysmetria with the right leg. There was a distinct tendency to fall during the Romberg test, as well as in walking.

The ear examination, made the day following the patient's admission to hospital, disclosed the typical findings observed in cases of cerebellopontile angle tumor: that is, the left ear was stone deaf, and stimulation of all the canals on that side produced no responses. The hearing on the opposite side, however, was good, and stimulation of the horizontal canal produced very active nystagmus and past-pointing, while stimulation of the vertical canals produced no responses. The nystagmus obtained was not of the pure horizontal type, but was oblique, or so-called "perverted," which furnished additional evidence of pressure against the brain-stem. In the report to the brain surgeon we indicated that the patient had a cerebellopontile angle tumor on the left side, and suggested that it was probably an encapsulated growth, because there was no evidence of cerebellar involvement.

This examination was made before the patient was studied neurologically and without a knowledge of the neurologic aspects of the case. At operation, June 24, a large encapsulated tumor of the left cerebellopontile angle was uncovered.

It is interesting to note that the patient's first symptoms were referred to the ear. Although totally deaf in the left ear at the time of examination, she was unaware that she was suffering from more than a slight impairment of hearing. From experience with these cases we are convinced that, had she had a careful and complete ear examination with the Bárány method of testing, a much earlier diagnosis of her case would have been made. She would have been spared the needless palliative subtemporal decompression operation, would have had a better chance for the preservation of her vision, and would have been in better condition to survive the extirpation of the tumor.

Case 2. K. L., a woman, admitted to the Mount Sinai Hospital, Jan. 10, 1921, complaining of headache and dizziness, had begun to have attacks of severe frontal headaches in August of the preceding year. During these attacks she became dizzy, and the vision was blurred. Several days before admission, the patient suddenly fainted, and on regaining consciousness complained of a very severe headache. On admission she presented the appearance of a nephritic, which was corroborated by examination of the urine. The media of the right eye were clear; the nerve head was buried in an exudate, with numerous recent large hemorrhages. There was marked papilledema. The cornea of the left eye was steamy, and the fundus could not be seen.

Neurologic examination revealed ataxia of gait and station; the patient was unable to walk without support, and, in walking, the trunk did not follow the limbs. The knee jerks were markedly increased on both sides, especially the left. Ankle clonus was present on both sides. There was a Babinski reflex, and Gordon's sign on the left side. On the right side Gordon's sign was present at times. The right external rectus was paralyzed. There was some ataxia in both upper extremities. The sphincters were sometimes disturbed, but not definitely so.

The patient had been treated for glaucoma and nephritis, but on January 22 she was sent on a stretcher to the ear dispensary for examination of the ears. She was too deaf and too apathetic for a complete study. Deafness was total on the right side and partial on the left. All that I was able to do was to douche both ears. She could not be made to do any of the pointing tests. The findings were definite, however, in that the only functioning semicircular canal (the left horizontal) produced a vertical instead of a horizontal nystagmus. Stimulation of the right or deaf ear produced no responses whatsoever.

This was the typical picture of a cerebellopontile angle tumor on the right side. Operation several days later verified the diagnosis. It was interesting to note that a prolonged and careful neurologic examination by a highly skilled neurologist pointed to nothing more definite than a "basal lesion." On the other hand, the ear examination carried out in less than fifteen minutes, without the slightest cooperation on the part of the patient, pointed out the exact location of the lesion.

Case 4.—D. H., a man, aged 30, examined by me, January 27, had been deaf in his left ear for the last five years; had staggered to the left, and had had slight weakness on the left side of the body, and numbness on the left side of the face. There had been definite attacks of vertigo. He was unable to chew well on the left side. Examination disclosed a spontaneous nystagmus on looking in every direction. Turning produced a nystagmus of fair duration but of a perverted kind. The vertigo was much shortened, only seven seconds in turning to the right and nine seconds in turning to the left. The left ear was totally deaf, and stimulation produced no responses from any canal. The right vertical canals did not respond to stimulation, while the horizontal canal gave a fair response. The hearing in the right ear was good. A diagnosis of a tumor in the left cerebellopontile angle was made.

The patient was operated on soon after that, and died two days later. Necropsy confirmed the diagnosis.

It is interesting to note that in this case the deafness came on five years prior to examination—most likely being due to an involvement of the eighth nerve by the tumor. A neoplasm, therefore, must have been there at least five years. It is also interesting that a digital examination at the time of operation failed to reveal the tumor. If no necropsy had been available later, the diagnosis would never have been confirmed.

Case 6.—A. A., a woman, had been a patient at one of the hospitals since Sept. 19, 1921. She had had frequent headaches followed by vomiting up to the age of 38, when they ceased until recently. In June, 1920, she noticed that her vision was failing. This was getting progressively worse, but had not reached the stage of total blindness.

Physical examination showed that there was no ataxia of gait to either side; all the reflexes were hyperactive but equal; there was no weakness, no astereognosis, adiadokokinesis or dysmetria. There was no disturbance of sensation or of the sense of position. Both eyes had choked disks.

Ear examination revealed the left ear stone deaf, with no response to stimulation. Hearing was good in the right ear; the horizontal canal responses were prompt and active; vertical canals gave no responses; in others words, this was a typical picture of the cerebellopontile angle tumor on the left side, and operation and necropsy verified that diagnosis.

It is interesting to note that the patient was studied for more than a month by the most skilled neurologists and clinicians without any focalizing sign being discovered. She had all the symptoms of a brain tumor, but no signs to point to its location. The ear examination pointed out accurately in a very few minutes the location of the neoplasm.

TUMORS OF THE POSTERIOR FOSSA

Although tumors of the cerebellopontile angle furnish the most definite complex of findings in the Bárány tests, yet they are not the only types of lesion in which these tests are useful. Tumors of the posterior fossa generally show rather definite findings on vestibular examination. In these cases the vertigo and past-pointing responses are particularly affected, while the eye responses are either normal or exaggerated. The following cases will serve as illustrations:

Case 8.—C. R., a man, aged 40, referred for examination from Martins Ferry, Ohio, Jan. 7, 1921, had been well until March, 1920, when he began to complain of dizziness and pain in the back of his head. The dizziness was aggravated on looking up. He kept on working, however, until November of that year, when he noticed a weakness in his right arm and hand. This was particularly noticeable when he attempted to write. The condition progressed slowly until eight weeks before examination, when he was compelled to go to bed. Vomiting appeared at that time. He never had any pain. For the last ten days, he had complained of double vision.

This patient was referred directly for an otologic examination because of his dizziness. The vestibular tests disclosed that hearing was normal in both ears. Turning produced marked nystagmus, but shortened vertigo with poor past-pointing. The douching tests showed that both eighth nerves readily conducted stimuli from both labyrinths The responses, however, suggested pressure within the fourth ventricle. The quick component of nystagmus emanating from the left cerebrum appeared to be interfered with.

It was, of course, evident that the patient's vertigo and other symptoms were the result of a brain lesion, and from an ear standpoint the differential diagnosis lay between a left-sided, subcortical cerebral lesion and one in the right posterior fossa. The marked impairment of the vertigo on stimulation, however, taken together with the other findings, seemed to suggest that the lesion was probably located in the right posterior fossa in the region of the angle, but not involving the right eighth nerve.

The patient was then referred for a neurologic examination. In walking, the right leg was held stiff and was placed in front of him, after which the left leg was brought up to it. The foot was not dragged. The Romberg sign was present; there was a tendency to fall to the right. There was an absence of contraction of the masseter muscle on the right side. The pterygoid action was not at fault. He could move the jaw from side to side. The angle of the mouth was not drawn as well to the right as it was to the left. He could use both arms, but the left arm seemed stronger than the right one (he was a right-handed man).

Biceps jerk and triceps jerk active plus plus on the right. Biceps jerk and triceps jerk not present on the left side. The finger-to-nose test was not performed accurately with the right hand; there was a tendency for it to go to the right of the nose. Adiadokokinesis was present on the right side, rotation being slow and at times irregular and sometimes associated with a coarse tremor. The patient could make all movements with his legs, but the right leg was a trifle weaker than the left. The knee jerks were equal on both sides and were not increased. Irritation of the soles of the feet caused a marked defense reaction. There was a Babinski reflex on the right side, while on the left side there was a tendency to one. The heel-to-knee test was fairly well performed, but not as accurately with the right as with the left. The patient appreciated direction of passive motion in his feet, toes and fingers. There was no headache. He stated that the right hand felt as though it were benumbed with cold. The tactile and pain sense was good in both arms. He complained of numbness of the right side of the face, but the tactile and pain senses were normal. The pulse was normal. Moving the patient about, which was necessary for the examination, made him vomit. He complained of occipital discomfort. The tongue was protruded straight. The jaw possibly went to the right when the mouth was wide open. Sensation of the right cornea was impaired. His stereognostic sense was normal.

Operation several days later revealed a large glioma of the right cerebellum.

HIGHER LESIONS

In lesions located "higher up," the Bárány tests will also be of value. Unfortunately, up to date not a sufficient number of such cases have been carefully studied and followed to the necropsy table to make the findings more than merely suggestive. In supratentorial lesions the vertigo responses will be found either normal or subnormal, but the past-pointing will be exaggerated both in extent and duration. Case 11 was one of the several of this type we have seen:

Case 11.—E. T., a man, admitted to Mount Sinai Hospital, Dec. 29, 1920, complained of constant headache, and pain in the left ear. The headaches started two months before admission, and became steadily more severe and persistent. They were more marked over the temporofrontal region. In addition to headaches, there was considerable pain over the left auricular region. He had frequent attacks of dizziness followed by fainting spells, but no frothing at the mouth. Vomiting occurred every morning after breakfast only. When the patient did not eat breakfast, there was no vomiting.

The patient was well nourished, with no dyspnea or cyanosis. The head, neck, chest and abdomen were negative. The eye grounds were normal. The preliminary, general and neurologic studies suggested a basal lesion.

An ear examination Jan. 7, 1921, nine days after admission, disclosed that the vestibular responses were all present, indicating that the pathways from both ears throughout the brain-stem and cerebellum were intact. However, the responses were exaggerated, especially the past-pointing, and this was interpreted as probably due to an irritation of the pathways. If the symptoms were due to a neoplasm, the neoplasm would have to be situated where it could produce the most irritative effects on the cerebellum. The cerebellum itself, however, appeared to function normally. It was thought that a supratentorial lesion directly above the cerebellum could produce such an irritative effect. The only evidence to suggest the side on which such a lesion could be situated was the fact that the cerebro-ocular tracts for the quick component of nystagmus to the right appeared more affected than the corresponding component for nystagmus to the left. This suggested a left-sided lesion.

A careful neurologic examination made four days later revealed not marked but distinct right-sided weakness. Movements on the right side were more sluggish than on the left. The knee jerk on the right side was more marked than on the left. There was no ankle clonus on either side nor Babinski reflex but there was a distinct Gordon's sign on the right side. Sensations were normal on both sides. The lower abdomen and cremasteric reflexes on the right were hardly obtainable. There was also a distinct homonymous hemianopsia. The gait was very uncertain. There was evident asynergia, and he dragged the right side more than the left. There were murmurs at the aortic orifice. In view of the right-sided symptoms and hemianopsia, the neurologist presumed that the lesion was in the left hemisphere and involved the left internal capsule as far back as the radiation. As to the nature of the lesion it was difficult to determine, but the indications favored a neoplasm.

Operation later disclosed a large abscess in the left occipital lobe.

In cases of neoplasm of the pituitary body the first effects of the pressure are exerted against the vestibulo-ocular tracts. In these cases the examination reveals an exaggerated nystagmus, but normal vertigo and past-pointing. A large number of pituitary cases examined and verified by operation gave this vestibular picture.

SUMMARY

1. In cases of cerebellopontile angle lesion the Bárány tests are absolute. By means of them these lesions can be definitely located or excluded long before the appearance of the ordinary clinical findings.

2. Lesions of the posterior fossa generally give fairly constant findings in the Bárány tests. I believe that they are of great value in the differential diagnosis between a subtentorial or supratentorial lesion.

3. The Bárány tests are also helpful to a lesser degree in lesions in the middle or anterior fossa.

Health in Russia.—*The World's Health,* a monthly review published at Geneva by the League of Red Cross Societies, notes in the March number that the populations of Moscow and Petrograd had decreased 49.6 and 71 per cent., respectively, between 1918 and 1920, and that the tendency toward depopulation is quite general among all other Russian cities. That the death rate had much to do with this reduction seems clear: for Moscow and Petrograd it was 28 and 43.7 per thousand, respectively, in 1918, and 46.2 and 69.1 per thousand, respectively, in 1920. Inquiry into the asylums for the insane disclosed that before the war these institutions were able to accommodate only from 10 to 20 per cent. of the certified insane cases, and that now they are half empty. The mortality in the asylums has tripled, and is now 30 per cent. of the total number of cases. Medical superintendents of both the asylums and hospitals suffer a high mortality from overwork, undernourishment, tuberculosis and suicide. In 1920, of the 2,000 physicians in Kharkof, 203 contracted typhus and sixty-six died, a case mortality of 33 per cent.

SOME OF THE FACTORS CONTRIBUTING TO TOXICITY OF BOTULINUS TOXIN BY MOUTH *

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Botulism, a comparatively rare disease in this country, but one apparently increasing in prevalence, is caused by eating food contaminated with botulinus toxin. Botulinus toxin is a poisonous substance elaborated by *Bacillus botulinus* and quite analogous to the better known toxins produced by *B. diphtheriae* and *B. tetani.* These three toxins are usually considered as the only true bacterial exotoxins. They resemble one another in many respects, but differ quite markedly in others.

The bacteria-free filtrates from cultures of these three organisms are exceedingly toxic for experimental animals. Thus, it is possible to produce diphtheria toxin of which 0.001 c.c. kills a guinea-pig. Tetanus toxin is usually more potent, so that only 0.000001 c.c. is necessary to produce the same effect. Botulinus toxin, as ordinarily produced, is often ten times more potent than tetanus toxin.

Botulinus toxin, similarily to the other two toxins, is easily destroyed by heating to a comparatively low temperature. Heating to 80 C. destroys it practically at once.[1]

In the case of *B. tetani,* it has been found that the antitoxin produced by immunization with the toxin of any one strain will neutralize the toxin produced by any other strain of *B. tetani.* All the strains of *B. diphtheriae* have been similarily considered to be homologous.

Some recent work[2] would seem to indicate that there are slight differences in this respect among different strains of diphtheria bacilli, but this work is not yet generally accepted.[3] In the case of *B. botulinus,* however, it has long been known that there are two distinct types of toxin.[4] The individual strains within each of the two groups of *B. botulinus* are entirely homologous (as judged by toxin-antitoxin neutralization), but the two groups designated type A and type B show no cross-neutralization.[5] In addition to the grouping by toxin-antitoxin neutralization, the various strains of *B. botulinus* have been differentiated in our laboratory by other immunologic tests, such as complement fixation, precipitation and agglutination reactions.[6] Recently Bengtson[7] has described a strain of a botulinus-like organism, the toxin of which is not neutralized by either of the two type antitoxins. It appears that in the case of *B. botulinus* we are dealing with a group of bacteria, the members of which have very similar cultural characteristics and cause similar symptoms in man and experimental animals, but differ from each other in their immunologic reactions.

In addition to the properties of being relatively thermolabile and of stimulating the production of specific antitoxins when injected into animals, the true bacterial toxins are known to give rise to symptoms and to cause death in animals only after a characteristic incubation period, thus differing from the metallic and alkaloidal poisons, which act more rapidly. Although this incubation period may vary within certain limits with the dose of toxin, it can never be reduced below a certain minimum, no matter how large the dose injected. Thus, for tetanus and diphtheria toxins it has never been reduced below from eight to twelve hours. We have found that in the case of botulinus toxin the period of incubation can be reduced so that the first symptoms appear in about thirty minutes, and death occurs in from one and one half to two hours after injection. Thus, the minimal incubation period in the case of botulinus toxin is much shorter than is the case with either diphtheria or tetanus toxins.

We have noticed[8] that when massive doses (from 0.3 to 0.5 c.c.) of the toxic filtrate from a botulinus culture are injected intraperitoneally into mice, the animals may show a marked reaction immediately after the injection, and may die in from five to fifteen minutes. The symptoms, however, are of an entirely different character from those characteristic of the specific botulinus poisoning. Moreover, such toxic filtrates, previously heated in a sealed tube to a temperature sufficient to destroy the specific toxin, still killed mice when massive doses were injected. We have also found that botulinus antitoxin does not neutralize this toxic effect of massive doses of the culture filtrate. The substance causing the rapid death is thus not the true botulinus toxin, since it is thermostable and is not neutralized by antitoxin, in addition to acting without an incubation period.

Our experiments indicate that the toxicity of massive doses of the filtrates from botulinus cultures is due to the high concentration of ammonia salts in them. Moreover, the filtrates from cultures of other proteolytic organisms, such as *B. proteus* or *B. sporogenes,* when injected intraperitoneally in massive doses into mice give rise to similar symptoms and cause death within fifteen minutes.[9]

These observations have practical significance in connection with the detection of botulinus toxin in suspected foods. Bengtson[8] has recently recommended that this diagnosis be made by the injection of large doses of extracts of suspected food intraperitoneally into mice. However, such foods may be contaminated with other proteolytic organisms than *B. botulinus,* and may cause the death of injected animals on account of the ammonia salts they may contain. We wish to emphasize, therefore, the necessity of controlling such injections by simultaneous control injection of antitoxin.[10] Moreover, since strains of *B. botulinus* may be encountered which produce toxins not neutralized by the usual type antitoxins,[7] even such control is not adequate. Two other controls must be included in which the thermolability of the toxic product is tested. This can be accomplished best by heating two samples of the suspected food respectively in an open tube (after having rendered it distinctly alkaline to volatilize the ammonia) and in a closed tube (after rendering it neutral) before injecting them into control animals.

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To sum up, we find that the specific botulinus toxin is quite analogous to diphtheria and tetanus toxin in all the essential properties identifying it as a true bacterial toxin. It can be isolated from cultures by filtration. It kills experimental animals in small doses with symptoms characteristic of the disease. It is thermolabile, and it is neutralized by a specific type antitoxin. Symptoms of poisoning appear after a characteristic incubation period, but this period is appreciably shorter than in the case of either tetanus or diphtheria toxin.

DIFFERENCES OF BOTULINUS TOXIN FROM OTHER BACTERIAL TOXINS

There is one characteristic, however, in which botulinus toxin differs very sharply from either tetanus or diphtheria toxin. Neither of the latter two toxins is poisonous when taken by mouth even in large doses, whereas botulinus toxin is toxic by mouth in very minute amounts. This property seems to indicate a fundamental difference in the nature of botulinus toxin, as compared to that of diphtheria or tetanus toxin.

The lack of toxicity by mouth of tetanus and diphtheria toxin has long been ascribed to the fact that they are readily destroyed by the digestive juices. The first question to settle, therefore, was whether botulinus toxin—which is toxic by mouth—is resistant to the conditions it encounters in the stomach and intestines.

We have found[11] that botulinus toxin resists an acidity fully equivalent to that of the stomach even when exposed to it for twenty-four hours at 37 C. It is less resistant to alkali, and is reduced in potency about ten times when kept for twenty-four hours in a weak alkaline solution ($p_H = 8.0$). In view of this relative instability of botulinus toxin in mildly alkaline reaction and its marked resistance to acid reaction, it seems likely that botulinus toxin is in the main absorbed from that part of the digestive tract which is acid in reaction, namely, the stomach and upper duodenum. However, the destructive effect of alkali is not very marked, and there may still be some absorption from the intestine.

We have found[12] that neither trypsin nor pepsin has any destructive effect on botulinus toxin. This cannot be ascribed to some ferment-inhibiting action of the toxin, as in the control experiments the digestive action of pepsin on edestin or of trypsin on casein was not decreased by the presence of botulinus toxin.

As a result of the properties described above, botulinus toxin is not markedly weakened by its passage through the stomach and intestine, and thus might be absorbed into the circulation. However, bacterial toxins have heretofore been looked on as belonging to the class of proteins of the nature of albumoses (toxalbumoses). At the present time it is not considered that proteins of the complexity of albumoses are ordinarily absorbed as such from the normal intestine. The fact that botulinus toxin resists both peptic and tryptic digestion, and that it is absorbed directly through the digestive tract, suggests that it must be of a much simpler structure than an albumose. There is another possibility, however, namely, that botulinus toxin or some substance associated with it increases the permeability of the intestine and thus permits a complex molecule of toxin to be absorbed. Some of our experiments indicate that the crude filtrate from botulinus cultures may, in fact, contain substances capable of increasing the permeability of the intestine for botulinus toxin.[13]

If crude filtrate is saturated with ammonium sulphate, the precipitate which is obtained contains all the toxin, the soluble fraction being nontoxic. This precipitated toxin, however, shows new properties. The relation between the size of the minimal lethal dose by mouth and that by intraperitoneal injection of the original toxin is 1,000 : 1. If the precipitated toxin is redissolved and similarly tested, the relation between the minimal lethal dose by mouth and that by injection becomes 100,000 : 1; that is, while the toxicity by injection remained unchanged, the toxicity by mouth decreased 100 times as a result of the precipitation of toxin.

Suspecting, as we stated above, that the toxicity of crude botulinus toxin by mouth may be due in part to the increase in permeability of the digestive tract, we ascribed the diminution in toxicity of precipitated toxin to its separation from the supernatant fluid, which might contain the substances affecting the permeability of the intestinal tract. Indeed, we succeeded in restoring to purified toxin most of its toxicity by mouth by adding to it proper amounts of the fraction soluble in saturated ammonium sulphate.

Besides differing from other bacterial toxins in that it is toxic by mouth, botulinus toxin differs from them also in other respects. Thus precipitation with ethyl alcohol, even when carried out at 0 C., practically destroys botulinus toxin, while both tetanus and diphtheria toxins can be obtained in a highly purified condition by precipitation with alcohol. This effect of alcohol on botulinus toxin had been previously suspected.

PROTECTIVE EFFECT OF ALCOHOL

In several recent outbreaks of food poisoning resulting from eating food contaminated with botulinus toxin, some of those exposed escaped altogether, or exhibited only mild symptoms. The investigators who studied these outbreaks observed that some of those who escaped severe poisoning had partaken rather freely of alcoholic beverages during the meal.[14] Our results in vitro pointed in the same direction, and in direct experiments we found that the introduction of alcohol by mouth immediately after botulinus toxin would protect a guinea-pig against at least three times as much toxin as would kill a normal guinea-pig in twenty-four hours.[15]

These experiments have shown, moreover, that the relative amount of food present in the stomach markedly influences this protective effect of alcohol, thus suggesting that the effect of alcohol on botulinus toxin in vivo may be analogous to its action in vitro—namely, that the toxin is precipitated and denatured by the direct contact with alcohol. The excess of food which may be present will serve to diminish this denaturing action of alcohol on toxin. In the course of these experiments it was noticed that also in absence of alcohol, the presence of food in the stomach tends to increase the activity of botulinus toxin. The same dose of toxin which is fatal to a starving guinea-pig in four days kills a guinea-pig receiving 3.5 gm., of rolled oats with the toxin in eighteen hours. It seems, therefore, that active digestion actually increases the potency of botulinus toxin.

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RESULTS OF ACIDIFICATION

We have stated earlier that botulinus toxin is not destroyed by the acidity equal to that of the stomach.[11] In a number of experiments, whenever one of the steps in the manipulation of toxin resulted in increase of its hydrogen ion concentration, we have often observed that this change seemed to increase its potency. In view of these casual observations, we suspected that the greater potency of toxin during active digestion (as compared with its potency in the empty stomach) may be due at least in part to the increased secretion of acid. We decided, therefore, to study more critically the question of the effect of acid on botulinus toxin. Careful titrations of toxin acidified in vitro disclosed a remarkable increase in its potency.[11] Thus, starting, for instance, with the crude botulinus filtrate of which 3×10^{-6} c.c. represents a minimal lethal dose for a mouse, by mere adjustment of the hydrogen ion concentration of the filtrate to that approximately equal $p_H = 4.0$, we usually obtained a product killing mice quite regularly in the dose of 3×10^{-18} c.c., and occasionally in the dose of 3×10^{-21} c.c. That this extraordinary increase of potency of botulinus toxin is directly due to the effect of acidification was definitely shown, since the proper neutralization of the solution of this highly potent toxin resulted in its returning to its original titer (of M. L. D. = $\times$ 10^{-6} c.c.). Moreover, if such neutralized solution of toxin is again brought to acidity of $p_H = 4.0$, its potency increases again to a degree almost as high as that observed on the first acidification.

In all the experiments thus far performed, we have used the filtrate of a single strain of *B. botulinus*. Even with this single strain, some batches of the filtrate failed to yield a high potency toxin on acidification by the usual procedure. In a growing culture the toxin very quickly loses the property to yield a product of the potency indicated above (M. L. D. = 3×10^{-18} c.c.). As the culture grows older, the crude toxin assumes a more stable form, which is not changed to such a great extent by acidification. However, if a culture is filtered (through unglazed porcelain) at the state when it is capable of yielding the product of this extremely high potency, such filtered toxin keeps this property for a considerable period, if preserved in the dark at low temperature and under a vacuum. However, our most recent results indicate that probably all batches of toxin may be increased in potency if proper conditions of acidification, time and temperature are found for each.

The highly potent product obtained from the crude filtrate of *B. botulinus* is thermolabile. It is destroyed by heating to 80 C. for a few minutes. Moreover, it cannot be produced by acidifying the heated (80 C.) botulinus filtrate.

We find that Type B antitoxin had no protective power against acidified toxin of Type A, while the latter is efficiently neutralized by even a small amount of homologous (Type A) antitoxin. In fact, we found that whereas the injection of 0.1 c.c. of Type A antitoxin is sufficient to protect the mice only against 100 lethal doses of the crude Type A toxin, this small amount of antitoxin is sufficient to protect mice against many million lethal doses of the acidified toxin of Type A. This and other similar results suggest that the protective power of botulinus antitoxin against varying numbers of lethal doses of the high potency (acidified) toxin apparently does not follow the "law of multiple proportions" as formulated by Ehrlich.

The high potency toxin produces symptoms and death in animals only after an incubation period. The injection into mice of many millions of minimal lethal doses of this high potency toxin is never followed by death of the animals before the expiration of from one and one-half to two hours. With decreasing doses, the incubation period is accordingly lengthened, and when very small doses are injected (3×10^{-21} c.c.) the incubation period is lengthened to forty-eight or seventy-two hours, and some of the animals recover. We have never had a mouse die after an injection of less than 3×10^{-21} c.c. of acidified toxin.

The highly toxic product obtained from the crude botulinus filtrate by acidification is thus in every respect analogous to true bacterial toxins. It is active in minute amounts. It is thermolabile, it can be neutralized in a specific manner by a homologous antitoxin, and it kills only after an incubation period. As a product of botulinus toxin, it should also be toxic by mouth. We found that acidified toxin kills when fed, but the dose required to accomplish this effect is just as large as the dose of crude filtrate from which the high potency toxin was prepared, in spite of the fact that, when injected intraperitoneally, the acidified toxin is many million times more potent than the crude toxin. In view of the experiments described above, we feel that this result can be interpreted to mean that placing the crude filtrate in the stomach consists essentially in an acidification in vivo with a resulting increase in potency similar to that which can be accomplished by acidification in the test tube. Therefore, when given by mouth, there can be no essential difference in potency between crude toxin and toxin acidified in vitro before feeding.

SUMMARY

It might be said that the crude filtrate from a botulinus culture, known as botulinus toxin, is of a composite nature containing both the specific botulinus toxin and some substance or substances nontoxic in themselves but capable of increasing the permeability of the intestine so as to permit the absorption of the specific botulinus toxin. Botulinus toxin can be absorbed by this route by virtue of the fact that it is resistant to the conditions of the hydrogen ion concentration and to the enzymes found in the digestive tract. The specific botulinus toxin is capable of an extraordinary increase in potency when it encounters the condition of hydrogen ion concentration similar to that present in the stomach during active digestion. This increase in potency is so marked that were only an infinitesimal quantity of the acidified toxin absorbed into the general circulation, it would be sufficient to kill the animal. Since the potency of acidified toxin is again reduced when it is neutralized (as would occur in the small intestine), it seems likely that botulinus toxin is absorbed to a large extent from the stomach and upper duodenum.

DYSPITUITARISM

REPORT OF A CASE OF POSTERIOR LOBE INSUFFICIENCY CONTROLLED BY ORGANOTHERAPY *

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Pituitary disease in the last few years has occupied a conspicuous place in medical literature. Many instances of disturbances of function of the pituitary gland have been reported, as well as experimental studies of its physiology.

For a number of years we have observed a patient in whom the alleviation of symptoms through organotherapy has been so striking that a brief report should be submitted.

REPORT OF CASE

History.—L. M., a Russian Jew, aged 38, was first admitted to the medical clinic, Feb. 22, 1916, complaining of sleepiness. In November, 1914, the patient first noticed that he began to feel sleepy and drowsy while at work or when walking. This symptom increased until June, 1915, when he consulted a physician. Occasionally, while working, his head would fall forward, and he would drop off into a profound slumber. Sometimes while people were talking to him, or while on the street, he has been compelled to sit down and sleep. Ocasionally, before sleeping, he felt dizzy, and objects swam before his eyes. Once, while walking, he fell, going into a profound sleep. He said it seemed as if a cloud came over him. He made no outcry to his knowledge, and had no muscular twitching. Severe frontal headaches, lasting about twenty minutes, began in December, 1915. They recurred at irregular intervals, sometimes weeks apart. Since the present illness began, his memory has been defective.

In 1906, the patient weighed 210 pounds (95 kg.) His weight remained fairly constant until 1913. In 1914 he weighed 270 pounds (122 kg). In 1915, he first consulted a physician. He was given thyroid tablets, and his weight decreased to 246 pounds (111 kg.) in a short time.

For several months in 1916, the patient urinated at least five times during the day and ten times at night. He did not know the amount voided in the twenty-four hours, but thought that single voidings were often as much as a pint. He had drunk about eight glasses of carbonated water daily.

Early in 1916, his sexual powers weakened. For nearly eight months in 1916, he had been troubled with severe and drenching night sweats; these were apparently uninfluenced during the period of thyroid administration.

Physical Examination.—In 1916 the patient was obese, of average height, and sturdy. The skin was soft, elastic, and moist in the axillae. The panniculus was abundant and evenly distributed. There were no pads in the supraclavicular fossae. The hands were short, relatively broad, and spade-like. There were no supernumerary nipples; the mammary glands were not hypertrophied. The hair on the head was abundant. The facial, axillary, thoracic and suprapubic hair showed a normal growth and distribution. The external genitalia were normally developed. There was no edema. The feet were short and thick.

The lips were cyanotic. The pupils were equal, and reacted actively to light and accommodation. The fundi were normal. The sclerae were clear. The patient wrinkled his forehead well on looking upward. There was a well marked von Graefe's sign. There was an occasional stare on fixing his gaze. Convergence was strong, but, when converging, both upper lids were raised. The patient had an extra peg-shaped tooth situated posterior to the right middle upper incisor; there was no spacing. There was considerable pyorrhea alveolaris. The tongue was moist and coated white. The tonsils were hypertrophied; the pharynx was reddened. The patient breathed through his mouth, and his speech suggested nasal obstruction.

The neck was short and thick. The cricoid cartilage was at the upper end of the sternum. The thyroid gland was not palpable.

There was no general lymphatic glandular enlargement.

The thorax was large, deep anteroposteriorly and laterally; the epigastric angle was obtuse. The lungs were normal throughout except for slight prolongation of expiration.

The heart was normal. The abdomen was negative.

The urine, February 23, was acid, and the specific gravity was 1.019. There was no albumin, and no sugar.

A blood examination, February 25, revealed erythrocytes, 6,170,000; leukocytes, 7,500, and 90 per cent. hemoglobin. There were 56 per cent. polymorphonuclears, 38.5 per cent. lymphocytes, 5 per cent. large mononuclears, and 0.05 per cent. transitionals. The Wassermann reaction was negative.

Roentgen-ray examination of the sella turcica, February 24, showed it to be normal in size and outline.

Sugar tolerance was low on two estimations about one week apart. Perimetric determinations of the visual fields showed a slight bitemporal contraction.

A diagnosis of dyspituitarism was made.

Treatment and Course.—The patient left the hospital, March 8, 1916, and was given anterior pituitary extract for several months, but no improvement was observed. He was then given the whole gland extract, and after about one month slight improvement was noticed. However, he lost weight slowly, and drowsiness persisted, though not so marked as before. At this time, he was also placed on a reduction diet. The improvement on whole gland extract after three months was slight.

September 6, 1916, he was placed on posterior lobe extract, and there was remarkable improvement within a few days. October 1, he weighed 212 pounds (96 kg.), which was 56 pounds (25 kg.) less than when treatment was started. He received the posterior lobe for about one month, when the supply was exhausted. He was again placed on whole gland, and one week later complained of severe headaches, drowsiness, frequent urination, and loss of sexual power. He was again placed on posterior lobe extract, and the relief of his symptoms was marked within forty-eight hours. He has been on posterior lobe extract intermittently since September, 1916.

At times when he had no extract, there was recurrence of all his symptoms. One grain (0.065 gm.) of posterior lobe daily was sufficient to keep him free of symptoms. After the use of posterior lobe extract for one year, his weight was 209 pounds (95 kg.), and he was rarely drowsy at work; he was seldom awakened more than once to void at night, and he had only an occasional frontal headache. The patient remained well and did not return for several months.

In January, 1918, his weight was 230 pounds (104 kg.). There was recurrence of the drowsiness, and severe headaches, which usually diminished as the drowsiness disappeared. There was increase of frequency in voiding at night. He developed an acute exacerbation of a chronic suppurative otitis media, and was treated by an otologist.

In February, 1921, the patient developed acute tonsillitis, which was followed by nephritis. There was an exaggeration of his previous symptoms. The posterior pituitary lobe extract was given again in somewhat larger doses without any other treatment except rest. In eighteen days he lost 52 pounds (24 kg.). There was general diminution of the swelling of his face and legs; voiding at night diminished to two times, though his urine continued to show a moderate cloud of albumin and an occasional cast.

Since March, 1921, he has felt very well. He has taken about one grain of posterior lobe extract a day, and has had no symptoms. He weighs 215 pounds (98 kg.), and has continued to work as a shoemaker.

The blood sugar, March 30, 1921, on a fasting stomach was 0.133 mg. per hundred cubic centimeters. Two hours later, after receiving glucose for a tolerance test, it was 0.239 mg. per hundred cubic centimeters. A basal metabolism reading on that date was 8.2 per cent. above normal.

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COMMENT

We wish to emphasize in this study that (1) obesity, (2) drowsiness, (3) headache, (4) frequent nocturnal urination, (5) loss of sexual power and (6) impairment of memory have been relieved and controlled over a period of six years by posterior lobe extract.

After six years' treatment with posterior lobe extract, despite the control of symptoms, sugar tolerance remains low.

A BASIS FOR THE PREVENTION OF CANCER

RECOGNITION THAT INJURY, INFLAMMATION AND IRRITATION ARE IMPORTANT FACTORS IN CAUSATION [*]

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In a number of textbooks, some recent, and in an occasional current review, one encounters discussions of the cause or causes of tumors that minimize or treat lightly any alleged influence of irritation in the production of neoplasms, particularly malignant growths. In a comparatively recent publication [1] it is stated that "we are still a long way from finding an agent or method that will produce a cancer in every animal to which it is applied." One is tempted to inquire, Have we reached that stage in tuberculosis, diphtheria, pneumonia, syphilis, and have we any reason to expect to attain such an ideal in our study of the etiology of tumors?

This article is presented with the intention to combat the tendency indicated, and to summarize some of the accessible data which, I believe, go far to establish the conviction that, of all the possible factors operative in producing cancer, irritation occupies a position of first importance. The belief is not new; much of the evidence, and some of that more recently acquired, is most convincing; I am not aware that it has been lately collated.

Ewing,[2] in his study of precancerous conditions, has cited many of inflammatory nature. Injury does not include all forms of injury, nor even a single form, but rather different types variously manifested; prolongation or frequent recurrence of action constitutes an important factor; when one speaks of irritation as a cause of cancer one is prone to think of all types of injury, e. g., recent wounds, broken bones and pyogenic infections, including definite suppurative processes, with none of which does tumor production appear to be frequently and intimately associated. Regressing through more than half a century to the remoter phases of such relations so strongly urged by Virchow often yields us nothing convincing. Percival Pott's study of chimney-sweeps' cancer (1775) is far distant; the kangri stove cancer, and the betel-nut chewers' cancer, for which even Ellis' [3] most recent accurate study is inconclusive, are not encountered, and one is prone to overlook the wealth of evidence that their history records. That soot-cancer, kangri stove cancer and betel-nut cancer are phases of malignancy due to irritation is clearly proved. Chimney-sweeps' cancer has fallen into new lines which include soot-cancer, pitch-workers' cancer, tar cancer (both acquired and experimental), charcoal-burners' cancer, briquette-makers' cancer, paraffin cancer, anthracene cancer, anilin dye cancer, grease-workers' cancer, and possibly other forms of industrial and occupational [4] disease. As further examples of irritation in cancer production should be added smokers' cancer of the lip, tongue, gingival and buccal mucosa, cancer due to faulty dentures, plates and bridges, roentgen-ray cancer, arsenic cancer, including sheep-dip cancer,[5] manure warts and cancers, and cancers arising on dermatoses and on tuberculous, syphilitic, blastomycetic, leptothritic and allied infections.

EXPERIMENTALLY PRODUCED CANCER

Practically all information concerning experimentally induced cancer in animals recognizes irritation—often prolonged—as the only established factor. Tar cancer, produced by Yamagiwa and Ichikawa, Tsutsui, Fibiger and Bang, and Murray and Woglom,[6] follows the repeated, frequently long continued, application of coal tar or of substances derived from it. Bloch and Dreifuss [7] have shown that tar cancers can be produced in rabbits, but that mice are more susceptible; they have seen as many as twenty metastatic nodules in the lung of an animal with experimentally induced tar cancer. Definite malignancy of these lesions has been established by progressive growth, autoplasts, metastasis and death of experimental animals. For those committed to the microbic or parasitic origin of tumors it is interesting to note that the cancer-producing irritant resists heating to 300 C. (572 F.) and is carried over during distillation. The results seem convincing, even though a single agent responsible for the change has not been isolated; this is not surprising if we recall that at least 125 different substances have been isolated from coal tar.[8]

That the irritation produced by animal parasites may develop into cancer has long been recognized; inflammation and tumor of the appendix have been known to have such an origin, and Ferguson has seen cancer of the bladder produced by the protracted action of the bilharzial eggs in the submucosa; aside from statistical proof concerning cancer of the rectum and of the bladder among people suffering from bilharziosis, the anatomic evidence presented by Ferguson [9] is conclusive; as in other forms of irritation, time is an important element, months to years of infestation or reinfestation being the rule, to which, however, there are many exceptions. This relation of bilharziasis to vesical and rectal cancer has been fully supported by the observations of Fairley,[10] and more recently by

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1. The Experimental Production of Cancer, editorial, J. A. M. A. **76:** 1404 (May 21) 1921.

2. Ewing: Pub. Cornell Univ. Med. College, Studies from the Dept. of Pathology, Bact., Exper. Path., Exper. Therap. **14,** 1914; Neoplastic Diseases, Ed. 2, Philadelphia, 1922, p. 475.

3. Ellis, A. G.: Betel-Nut Chewing and Its Effects, Arch. Int. Med. **28:** 252 (Sept.) 1921.

4. For review of Occupational Cancer, consult Ross, H. C.: J. Cancer Res. **3:** 321 (Oct.) 1918. For studies of anthracene cancer, consult O'Donovan, W. J.: Brit. J. Dermat. **33:** 291 (Aug.-Sept.) 1921; Epitheliomatous Ulceration Among Tar Workers, ibid. **32:** 215 (July), 245 (Aug.-Sept.) 1920. For further data on industrial cancer with special reference to tar and pitch and epithelioma, consult Annual Report of the Chief Inspector of Factories and Workshops for 1919, London, 1920, pp. 60 and 110; for 1920, London, 1921, p. 126.

5. Pye-Smith: Lancet **2:** 210, 1913.

6. Much of the literature is given by Murray and Woglom, Seventh Scientific Report of the Investigations of the Imperial Cancer Research Fund, London, 1921, p. 45. Consult also Yamagiwa and Ichikawa: Mitt. a. d. med. Fak. d. k. Univ. zu Tokyo **17:** 19 (March) 1917, details of experiments with illustrations. Deelman, H. T.: Nederlandsch Tijdschr. v. Geneesk. **2:** 2395, 1921. DeVries: Ibid., p. 2415.

7. Bloch and Dreifuss: Schweiz. med. Wchnschr. **51:** 1033, 1921.

8. U. S. Dept. Labor Month. Rev. **21:** 109, 1920.

9. Ferguson: J. Path. & Bacteriol. **16:** 76-794, 1911.

10. Fairley, N. H.: Proc. Roy. Soc. Med. 13: 1 (Nov.) 1919.

Kazama [11] in his study of the relation of Japanese schistosomiasis to cancer of the intestine.

Those who require clinical evidence supported by experimental data may read of the production of cancer of tongue and stomach in rats by Fibiger,[12] who used *Spiroptera neoplastica;* Kopsch [13] induced tumors in frogs by means of the nematode *Rhabditis pellio;* Bullock and Curtis [14] appear to have produced sarcoma in the liver of rats by feeding eggs of *Taenia crassicolis,* the neoplasm developing in connection with the cysticerci. It is important to note that in Fibiger's [15] spiroptera cancer, metastases and transplants grow without and do not contain the parasite, the epithelial cell having acquired the ability to proliferate without any known accessory irritant, stimulant, auxiliary or other extrinsic factor; to its progeny the cell transmits acquired characters. In this connection it is necessary to state specifically that no one believes any nematode or other parasite a specific cause of all tumors or of any group of tumors; but the evidence that irritation induced by the parasite is frequently followed by malignant tumor seems fully established, both clinically and experimentally. The belief that cancer might be due to coccidia, advanced by Pfeiffer, Darier, Wickham, d'Albarran and others, appeared to be satisfactorily set aside by the comprehensive studies reported by Fabre-Domergue [16] thirty years ago; the structural resemblance of some definite coccidial growths to cancer obviously depends on the reaction in certain cells of the host due to the irritation brought about by the parasite—a further evidence of similarity of such activities to malignant growths.

ETIOLOGIC RELATIONSHIP OF INFECTION

In the present state of our knowledge, a specific microbe etiology for neoplasms is unacceptable, nor is it possible favorably to consider the relation between fungi and tumor growth so strongly urged by Greco;[17] the more recent evidence of microbic influence in malignancy, presented by Young,[18] more conservatively by Robertson,[19] and by Nuzum,[20] cannot be ignored. Cancer arising in lupus of skin, nose or larynx, associated with or in tuberculous lungs [21] and buccal cancer, notably lingual epithelioma, and rectal malignant disease, following, associated with, or more probably superposed on lesions of tertiary syphilis, must be recalled. Though few would go as far as Palacio,[22] who believes that cancer is usually preceded by syphilis, the tendency to ignore syphilis as a factor in malignancy is too extreme; its relation to cancer of the tongue presented by that master of syphilology, Jonathan Hutchinson, a half century ago, has been supported by Butlin, Bland-Sutton and many others, indeed, by all careful clinical observers [23]; Power,[24] Bloodgood [25] and others [26] have wisely insisted on the added influences of individual susceptibility and particularly of irritation. Teeth were bad centuries before lingual cancer became frequent; syphilis does not appear to have added much, but syphilis plus irritation, particularly tobacco, mark the notable increase, to such an extent that Power thinks that as women now smoke they, too, will suffer. In Bloodgood's [25] compilation of 160 cases of lingual disease, smoking could be excluded in only two.

My thought is that the infection bears an etiologic relation becuse it is manifested by a reaction of irritation and not because there is what, under other conditions, might be regarded as any specific connection between the tubercle bacillus, the spirochete, blastomycetic fungus, various diphtheroids, cocci or other organism, and the new growth. In a manner resembling, but clearly quite different, the micro-organism in some way liberates one or more toxic substances which irritate, frustrate repair, and lead to a lawless cellular proliferation similar to that following the continued irritation produced by soot, tar, pitch, paraffin or other substances possessing allied possibilities, and the irritation accompanying certain animal parasites. In this connection it is interesting to note that no infective process exclusively or even largely suppurative tends to tumor formation. The cytologic reaction in purely suppurative lesions, such as abscesses, is not reparative; it is protective. Repair follows; and only when repair is constantly frustrated does the tendency to neoplastic evolution become manifest. It seems clear that many tumors result from disturbances of reparative processes. The relation may be immediate or remote; surely all are agreed that keloid may be so designated; the phenomena of repair in a severed nerve and the evolution and structure of amputation neuromas indicate the relation. Masson [27] has studied ten neuromas in inflamed appendixes; Gretsel,[28] recognizing that in the greatly disturbed area of the repairing stump the tendency to neuroma production is highest, goes so far as to suggest excision of a segment of the nerve above, thereby forestalling attempted neurogenesis in the amputation wound. Nassetti [29] has presented a study of sarcomas in scars, especially those following war wounds.

CANCER AS RESULT OF PROLONGED IRRITATION

Hamilton [30] has fully reviewed our knowledge of so-called anilin tumors of the bladder. Curschmann compiled 177 cases. Hamilton cites evidence to show that irritation must be prolonged from two years (the shortest on record) to thirty years, the average exposure being nineteen years. It is interesting to note that bladder tumors in dye workers appear earlier in life than is usual for vesical growths. As in roentgen-ray cancer, the tumor may develop long after exposure to the exciting cause has ceased. Luenenberger records an instance in which a man worked in dyes seven years, developed cystitis, transferred to another department two years, left the factory, and two years later developed blood in the urine and was operated on for bladder tumor. Schwerin reports cases in which tumors appeared from eight to twenty years after the patients left the factory. The nature of the active body is unknown; one may infer from Hamilton's review that she might believe that arsenic is the factor. A most interesting fact is that the chemical agent passes the barriers to its absorption and presumably through the excreting cells of the kidney, and finally exerts its action on the mucosa of the bladder; that the other structures appear to escape is most suggestive of some cytochemic electivity of action, the contemplation of which must arouse all sorts of speculation as to the possibility of such activity of this and other substances on other organs, particularly on secreting or protecting cells. The protracted latent period, and the fact that contact with dyes may have long ceased, recall those instances of smokers' cancer that appear after the habit has been discontinued.

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[11] Kazama, Y.: Gann **15:** 22 (Aug.) 1921.

[12] Fibiger, cited in Experimental Production of Tar Cancer, editorial, J. A. M. A. **77:** 127 (July 9) 1921. J. Cancer Res. **4:** 367, 1919. Wood: Proc. New York Path. Soc. **21:** 122, 1921. Fibiger and Bang: Hospitalstidende **64:** 51, 1921.

[13] Kopsch: Die Enstehung von Granulationsgeschwulsten und Adenomen, Karzinom und Sarkom durch die Larve der Nematode Rhabditis pellio, Thesis, Leipzig, 1919.

[14] Bullock and Curtis: Proc. New York Path. Soc. **20:** 149, 1920, with references to earlier observations and experiments, and interesting discussion. Bullock, Curtis and Rohdenburg: Proc. Soc. Exper. Biol. & Med. **18:** 29-30, 1920.

[15] Fibiger: Compt. rend. Soc. de biol. **83:** 321, 692, 950, 1160, 1920.

[16] Fabre-Domergue: Ann. micrographie, 1892, pp. 49-67, 97-110, 145-164, 221-236, 579-587, 603-614.

[17] Greco, N. V.: Origine des tumeurs (Etiologie du cancer, etc.) et observations de mycoses (blastomycoses, etc.) Argentina, Buenos Aires, 1916.

[18] Young, J.: Edinburgh M. J. **27:** 212 (Oct.) 1921.

[19] Robertson: Brit. M. J. **2:** 929, 1921.

[20] Nuzum, J. W.: Surg., Gynec. & Obst. **33:** 167 (Aug.) 1921; discussion, p. 205.

[21] Harris: J. M. Res. **28:** 471, 1913.

[22] Palacio: Presse Med. Argentina **6:** 33, 1919.

[23] Lydston, G. F.: Am. J. Surg. **29:** 33 (Feb.) 1915.

[24] Power, D'Arcy: Brit. J. Surg. **6:** 336 (Jan.) 1919.

[25] Bloodgood, J. C.: Cancer of the Tongue: A Preventable Disease, J. A. M. A. **77:** 1381 (Oct. 29) 1921.

[26] Separate papers by Sebileau, Vallas, Ferrand and Fernet: Bull. méd., Paris **33:** 617, 627, 629, 632, 1919, dealing with several phases of cancer of the tongue; Ferrand's paper is on the early diagnosis; Fernet discusses the semeiologic value of leukoplakia.

[27] Masson, P.: Lyon chir. **18:** 281 (May-June) 1921.

[28] Gretsel: Zentralbl. f. Chir. **47:** 1395, 1920. Consult also suggestions of Huber, G. C., and Lewis, Dean: Amputation Neuromas, Arch. Surg. **1:** 85 (July) 1920.

[29] Nassetti, F.: Tumori **8:** 1 (April) 1921.

[30] Hamilton, Alice: J. Indust. Hyg. **3:** 16 (May) 1921.

For inducing malignancy usually prolonged, chronic irritation is necessary, but many exceptions occur; Ophuls [31] recalls to us that an indeterminable percentage of tumors follows a single injury—sarcoma more frequently than carcinoma; but he also includes a few benign growths, such as fibroma, chondroma, osteoma, lipoma and neuroma; the latter, he says, is always traumatic and is not true tumor. Dr. Ellis permits me to refer to a patient in St. Agnes Hospital who received a cinder burn on the cheek in what was supposed previously to have been healthy skin; after two weeks the excised lesion was clearly epitheliomatous. According to Hazen,[32] cancer resulting from burns shows a greater tendency to metastasis than most other cutaneous epithelial neoplasms due to other causes; he presents a study of thirty-seven squamous-cell growths arising in precancerous dermatoses; of ten basal cell cancers, six arose in ulcers and one in the scar of the burn. Mishell [33] reports cancer of the hand following a sulphuric acid burn. Møller [34] records sarcoma of the eye, the part first removed containing a splinter; the tumor recurred and later developed local and distal metastases; the injury preceded the tumor by two or three months.

A physician, approaching 60 years of age, of massive proportions, for many years weighing 280 pounds (125 kg.) and over, a profuse sweater, found, after a heated period in July, several small warts distributed on the back, along the lines subjected to suspender pressure and friction. Although a man of the cleanliest habits, he could not satisfactorily cleanse his back; almost constant moisture, most marked and most abundant and persisting longest under the suspenders, a recognizable excess of oily matter in the perspiration, and the friction of clothing resulted in irritation. Near where the suspenders crossed, just under the leather part, the lesions were more conspicuous, more inflamed and at times bled. With scissors, curved on the flat, the small warts were clipped off and the bases touched with iodin; suspenders were discarded, and the back bathed daily with 60 per cent. alcohol. No excrescent papillomas returned. Two that had been rubbed off, leaving ulcerating areas from 0.25 to 0.5 cm. in diameter, the larger just under the crossing point of the suspenders, took on the appearance of rodent ulcers. I have no doubt that they became indolent basal-cell epitheliomas. Dr. William M. Sweet gave a number of roentgen-ray treatments, after which the areas healed promptly; although the patient lived twelve years after the incident, there was no recurrence.

No reasonable doubt of the cancerous nature of the ulcerative process, or or irritation as the cause, can be entertained. Almost surely excision would have been safer and more certain, and in every way preferable; however, the patient's disinclination to consider an operation swayed opinion, and good fortune favored healing without further trouble.

Often irritation may be of a recurring type or may act over a long period:

A man having a large congenital angioma involving the chin, lower lip and cheek came to the Jefferson Hospital at irregular intervals on account of recurring irritation from shaving and uncleanly habits, soiled rags having been used to remove dripping saliva. As no surgeon would promise excision of the large congenital but extending angioma without danger to life and without resulting deformity, the patient declined operation; for more or less prolonged periods inflammation and irritation would disappear and then recur; finally, however, after about fifteen years, the patient returned with such extensive epitheliomatous evolution that operation could promise no relief.

Wyeth [35] reports an epithelioma of the hand in a patient, aged 58, following a series of injuries, infections, inflammations and ulcerations that had passed through various stages of evolution, finally becoming epitheliomatous, and requiring radical treatment about forty-seven years after the initial injury; the diagnosis at various times had been erysipelas, elephantiasis, tuberculosis, warts, syphilis and finally cancer. This tendency of chronic cutaneous irritation and ulceration to end in cancer has led English authorities to require factory and workshop inspectors [36] to report all cases of persisting ulcers among workers; in addition to the irritative and ulcerative manifestations noted above, they also include the inflammatory and necrotic process attributed to irritation by chromium salts used in the industries, conditions called chrome holes, chrome ulcer, chrome eczema and allied processes, and it is noted that after the age of 35 years the tendency to epitheliomatous transformation is greater. Bowen,[37] among these precancerous dermatoses, includes Paget's disease of the nipple, xeroderma pigmentosum and keratosis senilis. Lynch [38] reports a relatively rapid epitheliomatous evolution in a pellagrous ulcer; even oriental sore may assume the histologic appearance of epithelioma.[39]

Not only do irritative reactions, long continued or otherwise, lead to cancer, but it is equally important to recognize that benign processes, such as warts and moles, may be transformed into highly malignant growths by acute trauma or more prolonged injury. Levin [40] has found that a certain amount of previously induced irritation increases the incidence of takes when Flexner-Jobling tumor is implanted in the testicles of rats, and Nuzum [20] has shown that trauma makes more active the growth of the transplantable tumor with which he experimented; in other words irritation increases susceptibility, incidence and growth; my hope is that this article contains satisfactory evidence that chronic inflammation and irritation actually induce malignancy.

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[31] Ophuls, W.: California State J. Med. **19**: 54 (Feb.) 1921.

[32] Hazen, H. H.: Cutaneous Cancer of the Extremities, J. A. M. A. **55**: 837 (Sept. 4) 1915.

[33] Mishell, D. R.: A Case of Cancer Following a Sulphuric Acid Burn, J. A. M. A. **73**: 1936 (Dec. 27) 1919.

[34] Møller: Ugesk. f. Læger **83**: 1239, 1921.

[35] Wyeth, G. A.: New York M. J. **114**: 685 (Dec. 21) 1921.

[36] London Letter, J. A. M. A. **74**: 405 (Feb. 7) 1920. Brit. M. J. **2**: 852 (Dec. 27) 1919. Abstract of Literature of Industrial Hygiene **3**: 1, 1921.

[37] Bowen, J. T.: Precancerous Dermatoses, Arch. Dermat. & Syph. **1**: 23 (Jan.) 1920. S. E. Sweitzer (J. A. M. A. **69**: 179 [July 21] 1917) records thirty-three of forty-three skin cancers due to precancerous dermatoses or chronic irritation; some were due to acute injury. In the discussion, Lain states that epithelioma of the inner canthus of the eye is due to attempts to remove dust and other foreign particles, obviously both, and the usual methods of removal are irritants.

[38] Lynch, K. M.: J. Cancer Res. **2**: 77 (Jan.) 1917.

[39] Macadam, W.: Brit. J. Surg. **7**: 487 (April) 1920.

[40] Levin: J. Exper. Med. **15**: 163, 1912.

IRRITATION AND CANCER IN ALIMENTARY CANAL

Nowadays, nobody doubts that cancers of the stomach and duodenum frequently are preceded by peptic ulcer. Many surmises have been put forth as to the frequency of the relation; but, as MacCarthy[41] has stated, exact percentages can never be given. Accurate information as to the cause of gastric ulcer may not be at hand; that hot drinks, infection (syphilitic and otherwise), circulatory disturbance (embolism), acute or chronic gastritis, secretory abnormality, vagus or other nerve disturbance, trauma, pyloric delay, and allied influences, may be factors, is suggested, and in each of these irritation occupies a prominent place. Practically all treatment, medical and surgical, as directed toward cure of the chronic type, is based on recognized irritation either as a cause of the ulcer or as a cause of delayed healing and consequent malignancy, or of both. Papillomatous proliferations are not infrequent about gastric hair balls and string balls, and though gastric cancer in mice is exceedingly infrequent (two squamous of the cardia, one tubular of the pylorus, in 16,000 necropsies on mice), the one pyloric growth observed by Slye[42] and her co-workers apparently resulted from a hair ball in the stomach. Cancer of the intestine is also rare in mice; the one case observed in Slye's stock arose in a chronically prolapsed rectum, in which, of course, chronic irritation was present. Stasis, foreign bodies and other factors make irritation and inflammation almost constant factors in gastro-intestinal diverticulosis; Mellon, Soble, and Davidson and Fowler[43] insist on the frequent origin of cancer in such cases. According to Goldstein,[44] there are on record 325 cancers and seventeen primary sarcomas of the appendix; the symptoms are those of recurring or chronic appendicitis. There is something interesting and suggestive in the occurrence of cancer in the alimentary canal in areas particularly liable to irritation—the lip, tongue, pyloric and duodenal segment, appendix and cecum, sigmoid and rectum; intervening portions are primarily involved.

Some years ago, Dr. D. Braden Kyle brought to my attention a middle-aged man[45] with cancer of the tongue, histologically diagnosed:

> The man was a slater, and while at work habitually carried nails in his mouth from which, by the skilful use of his tongue, he delivered nail after nail, head-on, as needed; the ovoidal cancerous mass, centrally located, marked the area subjected to pricks and other irritation, to which, possibly, may be added some chemical action exerted by the metal.

Lathers' cancer of the tongue has been described but, in a somewhat careful review of literature, I have not encountered the reports.

> A middle-age woman of fine physique, apparently in perfect health, negative family and personal history, began to take on fat; disinclined to give up rich foods and more or less sedentary habits, she decided on active purgation. The patient told me that she took from 2 to 4 ounces (60 to 120 gm.) of Epsom or Rochelle salt daily—had taken "loads" of it, to use her words, sometimes using cascara and compound cathartic pills as substitutes or in addition, especially when the scales did not satisfy her desire to reduce. She lost some weight, probably only a few pounds, but was gratified to find the tendency to gain apparently under control; she was abnormally sensitive on the subject of weight, and concealed the fact that she was subjecting herself to active, even violent, purgation, usually complaining of severe, unrelievable constipation. After several months, considerable pain in the lower abdomen appeared, at first mildly annoying, later, at times, severely so; facts as to her general health are not accessible, but some weeks, possibly two or three months after she last spoke to me concerning her "reducing" treatment, and somewhere about two years after its inauguration, the patient consulted Dr. Bloodgood in Baltimore. Exploratory incision disclosed an inoperable cancer of the sigmoid.

Of course, proof of causative relation between the violent purgation and the evolution of the cancer is inconclusive; but, surely, knowing as we do how frequently rectal irritation, diverticulitis and allied factors precede cancer in these parts, it is no far cry to the assumption that repeated or long continued, often violent purgation and obstinate constipation, are not without danger.

MULTIPLE CANCER DUE TO IRRITATION

Roentgen-ray cancer surely must be regarded as an irritation reaction. Three Philadelphia roentgenologists, all medical men, have died of cancer; I have examined specimens from each case; two of the patients were repeatedly operated on in the Jefferson Hospital, and the specimens removed have been carefully studied in our laboratories. Each manifested the usual features of this disease; to one, a heavy smoker, I wish to refer particularly:

> While the initial, so-called precancerous, phenomena were evolving on a finger and probably on the dorsum of the hand, the lower lip, near its center, assumed the appearance of early epithelioma. Dr. John H. Gibbon and I urged excision, to which the patient consented. Dr. Gibbon removed the usual wedge-shaped piece about six weeks after the appearance of the lesion; histologically, the superficial changes were hyperkeratinization, papillomatous excrescences, a very slight basal infiltration and noteworthy overgrowth of the rete; no one could doubt the definitely cancerous nature of the condition.[46] There was no recurrence of the labial growth, and not until ten years later did the roentgen-ray cancer complete its course, which passed through local evolution, axilliary lymph-node invasion, repeated operation, recurrence, and finally pulmonary metastasis which caused death.

An interesting fact in this case lies in operative cure of one cancer in a person having another, both new growths, due to irritation by apparently—at least to the best of our knowledge—two entirely distinct irritants. The history indicates a rather marked predisposition on the part of the patient to malignancy; nevertheless, a cure resulted in one area when all the cancerous and potentially cancerous tissue was removed. My memory is that he never discontinued smoking.

CANCER OF BREAST

Probably with regard to no organ more than the mamma have controversy and uncertainty reigned relative to the influence of injury in the evolution of neoplasms and especially of malignant disease. Some have regarded clearly established injury as incidental, not causal; cases in which cancer developed in an area subjected to stay-pressure[47] (traumatic mastitis), the production of tar sarcoma [48] in the mamma of the rabbit and the constant histologic evidences of chronic irritation, involutional changes, chronic mastitis, so-called cystic disease of the breast,[49] and irritative, reactionary or inflammatory disease of the nipple and ducts are ignored. We are asked, what is the injury or what is the nature of the irritant? In most instances we do not know. However, every student of morbid histology who has examined these organs in early cancer, or both mammae when only one was cancerous, knows that evidences of irritative reaction are almost if not quite constantly present and as indubitably defined as the reactionary lesions seen in the tongue, lip, cervix, prepuce, vulva, etc., when irritated and becoming cancerous.

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[41] MacCarty (W. C.: Am. J. Roentgenol. **7**: 451 [Sept.] 1920) summarizes his views and gives references to seven publications by the author and his colleagues, based on study of 507 simple chronic ulcers and 895 carcinomatous ulcers. Urrutia: L.: Arch. Españ. de Enf. d. Ap. Digestivo **2**: 579, 1919. Mayo, C. H.: Carcinoma Developing on Gastric Ulcer, J. A. M. A. **77**: 177 (July 16) 1921.

[42] Slye, Maude; Holmes, Harriet F., and Wells, H. G.: Tr. Chicago Path. Soc. **10**: 209, 1917. Fuller report in J. Cancer Res. **2**: 401 (July) 1917; literature. Ibid. **6**: 57 (Jan.) 1921.

[43] Davidson and Fowler: Surg., Gynec. & Obst. **33**: 177 (Aug.) 1921, Mayo, W. J.: Diverticulitis of the Large Intestine, J. A. M. A. **69**: 781 (Sept. 8) 1917.

[44] Goldstein, H. I.: Am. J. M. Sc. **161**: 870 (June) 1921; literature given.

[45] The patient was a brother or brother-in-law of a physician; should this report come to the attention of any one familiar with the case, I would be grateful for further details.

[46] It is shown in Figure 147, p. 321, of my Manual of Pathology, Ed. 5.

[47] Cheatle: Brit. M. J. **1**: 492, 1911.

Paine [50] and Clare [51] believe that carcinoma is induced by irritation and inflammation, and it is further held that cancerous mammae in man and mice are always inflamed, an opinion which I share. Forgue and Chauvin [52] found history of trauma more frequent than heredity in melanic cancer of the male breast. All the evidence seems to me conclusive that the reactions preceded the cancer, and that irritation as a factor cannot be disregarded. Although he is surely right, I do not know what percentage of surgeons agree with Bloodgood [53] "that the complete removal of the breast is a definite protective procedure in certain nonencapsulated lesions of the breast which may be included under the terms chronic mastitis." Then you would excise all chronically inflamed mammae? Not at all, but subject every one to the most careful scrutiny and to discriminating examinations by men of experience, men who know their morbid anatomy, at least that of the breast, and realize their fallibility—these are the safest.

Again, it is to be recalled that in all probability some of these breasts are potentially cancerous—sure to develop cancer—even though the microscope may not disclose the fact. The demonstration of this truth by Murray and Woglom in experimental cancer, referred to elsewhere in this article, is of the utmost importance in our effort to interpret many facts with regard to cancer. In addition to the admitted clinical and histologic evidence that injury may be a factor in the production of mammary growths, legal opinion may also be cited; damages have been assessed [54] on the recognized relation.

HODGKIN'S DISEASE

Many observers look upon Hodgkin's disease as an infection. Whether one accepts the infective agents suggested by Sternberg, by Fraenkel and Much, by Bunting and Yates, or possibly some other organism, there is much to indicate that primarily the process may be of the nature of an infective reaction; but many cases, sooner or later, manifest such definite neoplastic characters (visceral metastasis, nodes in kidney, lung and liver) that their sarcomatous nature appears obvious. Assuming that it may have an infectious beginning, the interpretation would be that the irritative reaction induced by the organisms eventually converts cells, that primarily arose as a part of a reaction to infection, into cells that took on the attributes of malignancy, for example, as we understand that process in clearly recognized sarcoma. Such a possibility explains those instances in which improvement follows the application of vaccines, operation, the roentgen-ray, radium and possibly arsenic or other medication, and later the process appears to relapse or recur with evidence of greatly enhanced malignancy; the latter condition or stage has been termed Hodgkin's sarcoma, as distinguished from the earlier, possibly distinct manifestation called Hodgkin's granuloma. There are good reasons for asserting some essential difference between the two groups of cases or the two stages of the process, no matter what view one holds as to the explanation. Those who have seen many cases of Hodgkin's disease have recognized these striking differences, and Yamasaki, Levin, Mueller [55] and others have written with various views as to the nature of the transformation.

IRRITATION AND CANCER OF VULVA, UTERUS, ETC.

I have talked with no experienced gynecologist who did not believe that childbirth, erosion, ulceration or other form of injury or chronic irritation was the usual antecedent of cancer of the cervix uteri. More than twenty years ago, Cullen [56] recognized the relation. Ewing [57] states that the earliest cervical carcinoma that he has seen arose in chronic erosion; a few early excisions that I have seen fully support this view; Eden and Lockyer [58] describe the transformation of erosions into epithelioma. A common belief that erosions are simple ulcers is probably erroneous; it is not unlikely that they are neoplastic, as stated by McCann. Polak[59] records cancer of the cervix after supravaginal hysterectomy, notes that cancer of the cervix occurs in 2 per cent. of uterine fibroids, and thinks that complete removal of the organ should be practiced in all such operations when the cervix has been traumatized by childbirth, or is eroded, or otherwise irritated. Soubeyran and Peyron [60] have reported cancer of the uterus developing about a foreign body left in the organ twenty-two years. The experimental production of uterine cancer in animals by the injection of scarlet red oil has been asserted [61] but not fully verified. The only primary epithelioma of the female urinary meatus in my experience was preceded by evidence of long continued irritation. Keratoses, leukoplakic vulvitis, and other evidences of indolent inflammation practically always precede cancer of the vulva; Taussig [62] believes that cessation of ovarian function is also a factor.

OTHER IRRITATION CANCERS

Cancer of the gallbladder or bile ducts with cholelithiasis, and cancer of the urinary bladder with vesical calculi, are other illustrations of irritation cancer.

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[48] Yamagiwa, Suzuki and Murayama: Mitt. a. d. Med. Univ. Tokyo **25**: 189, 1920; photomicrographs of neoplasm.

[49] Ellis: Publications from the Laboratories of the Jefferson Medical College and Hospital **1**: 1904; Ann. Surg. **38**: 336, 1903. Syms, Parker: Evolution of Cancer of the Breast, J. A. M. A. **69**: 454 (Aug. 11) 1917; bibliography.

[50] Paine, A.: Lancet **2**: 693 (Oct. 2) 1920.

[51] Clare, T. C.: Lancet **2**: 1298 (Dec. 25) 1920.

[52] Forgue, E., and Chauvin, E.: Rev. de chir. **57**: 1 (Jan.-Feb.) 1919.

[53] Binnie's Regional Surgery **1**: 584, 1917. Those who do not see a relation between chronic breast lesions and mammary cancer should read this admirable presentation. Lukowsky: Deutsch. Ztschr. f. Chir. **167**, 1921.

[54] Irritation of Tumor Necessitating an Operation, J. A. M. A. **77**: 642 (Aug. 20) 1921.

[55] Mueller, T.: J. M. Res. **42**: 325 (June-Sept.) 1921; literature given.

[56] Cullen: Cancer of the Uterus, New York, 1900, p. 651.

[57] Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919, p. 526.

[58] Eden and Lockyer: Gynaecology, London, 1920, p. 524.

[59] Polak, J. O.: New York State J. Med. **21**: 45 (Feb.) 1921. Other observers may be consulted in discussion on Precancerous Uterus, Section on Obst. & Gynec., Roy. Soc. Med., Oct. 9, 1919; Brit. M. J. **2**: 530, 1919. McCann: Proc. Roy. Soc. Med. **13**, Section on Obst. & Gynec., p. 3, discussion, p. 9.

[60] Soubeyran and Peyron: Gynec. et. Obst. **1**: 4, 1920.

[61] Yamagiwa and Ohno: Gann **12**: 3, 1918. The Experimental Production of Cancer, editorial, J. A. M. A. **76**: 1404 (May 21) 1921.

[62] Taussig, F. J.: Precancerous Lesions of Skin of Vulva, Arch. Dermat. & Syph. **1**: 621 (June) 1920.

Irritation is recognized as a factor in production of papilloma of the vocal cords in singers and speakers; it is also known that papilloma may follow war gas injury; my colleague, Dr. Chevalier Jackson, permits me to mention two cases of laryngeal papilloma developing in gassed soldiers; he knows of another case in the literature; the tendency of laryngeal warts to become cancerous is well known, and no doubt continued irritation facilitates the transformation.

There is evidence that intrinsic structural changes, benign growth, goiter, inflammation, calcification and allied processes in the thyroid may be followed by malignant disease.[63]

It is believed that solar irritation may be a factor in the production of cutaneous cancer;[64] as many as eleven skin cancers in the production of which sunlight was believed to be active have been seen in one patient.

So long ago as 1814, Hey in England and Roux in France noted the influence of irritation in the production of preputial and other forms of penile cancer, a fact now universally conceded; DaCosta, Chetwood and also Wolbast[65] have noted the infrequency of penile cancer in Jews. Barney found phimosis in 85 per cent. of one hundred cases of penile cancer. Bashford attributes the new growth to accumulated secretion, uncleanliness and consequent irritation; he also observes that cancer of the penis is unknown among Mohammedans. I have never seen cancer of the penis in a patient in whom there was no phimosis or other local impediment, and whose habits were those of scrupulous cleanliness. My colleague, Dr. H. R. Loux, concurs in this view and, so far as we can recall, we have never seen cancer of the penis in a Jew who had been properly circumcised. Dr. Loux has seen cases in which incomplete freeing of an adherent prepuce has been followed by cancer; really these are cases of phimosis by adhesion with possibilities not unlike those incident to narrowing, either congenital or acquired.

A relation between cancer of the lung and forms of irritation has long been known, but the more recent studies of Margaret Uhlig[66] with regard to lung cancer, attaining epidemic proportions among workers in cobalt mines of Saxony, more vividly brings to mind the probability that some pulmonary malignant neoplasms arise on a basis of irritation. Schmorl is quoted as believing that lung cancer is unusually frequent about Dresden, and attributes the incidence to the influence of sandstone industries on workers. Winternitz has shown that the reparative processes following the introduction of hydrochloric acid into the bronchi may give rise to histologic appearance resembling cancer. Moise[67] has adduced further evidence in favor of the view that cancer of the lung may be due to bronchial irritation. My colleague Dr. Chevalier Jackson permits me to refer to a case of pulmonary carcinoma following the presence of a foreign body in the lung for more than thirty-five years, the patient coming to necropsy in the Jefferson Hospital.[68] Harris[21] presents part of the evidence of interrelationship between pulmonary tuberculosis and cancer.

LIMITATION OF HISTOLOGIC DIAGNOSIS

It is well for the profession to recognize that even the histologic diagnosis of malignancy has its limitations; laboratory men of large experience are thoroughly familiar with instances in which careful, even exhaustive, examination of numerous sections yielded no satisfactory result or led to a diagnosis that later seemed disproved by the clinical evidence. The best qualified and most conscientious histologist may not be infallible; errors incident to random sampling occur, and furthermore, it is fully established that there is a stage in malignancy during which a positive diagnosis by histologic examination is quite impossible. With regard to the first of these, no argument is necessary. Random sampling, examination of a single block or, still worse, a lone section or so with negative finding must be open to error. Gastric ulcers, only a part of which is epitheliomatous, are not uncommon; I recall an ulcer less than 0.5 cm. in diameter, excised from the tongue for diagnostic examination, only one area of which seemed cancerous. Several years ago a patient was admitted to the Maternity Department with a mamma that seemed clinically puzzling; a supposed abscess was incised, pus was obtained, some of the tissue was histologically inflammatory and enlarged lymph-nodes subsided; nevertheless there was an underlying cancer clinically suspected but not histologically demonstrable in the tissue examined. Dr. Gibbon sent me a mamma about which he was suspicious; he had removed the breast and axillary contents. Many blocks were examined before indubitable cancer was found; interrupted, serial sections of the auxiliary mass finally disclosed a lymph-node no larger than a grain of wheat, and not a large grain of wheat at that, in which implantation had occurred; I have no doubt that we have missed other infiltrations because busy routine rarely permits an exhaustive study of all specimens.

Every discerning student of cancer must have apprehended that reactions to irritation and other cell changes preceding cancer must be potentially malignant before it is possible, by means at present available, to demonstrate histologically the impending malignancy; a cell or tissue must be preparing, and finally must be prepared to infiltrate before the process is manifested. Murray and Woglom[6] appear to have placed evidence of this fact on a secure experimental basis, by transplanting into the experimental animal (autoplasty) small fragments of the irritated and reacting tissue, and at the same time subjecting other parts to histologic study. They have shown that fragments may grow, give rise to metastasis (visceral and otherwise) and kill when evidence of malignancy was not determinable in the sections examined from the area of primary irritation and growth; in other words, the process was potentially—really already—cancerous but not as yet histologically malignant. This enables me better to understand those instances in which biopsy yielded nothing indicative of cancer, although subsequent developments clearly proved that the process was malignant. Naturally, a cell has made necessary preparations to do a thing before it does it; histology rarely, if ever, tells us what a cell is going to do before it does it, although many of us are constantly deluding ourselves into the belief that we can deduce the future of a cell from a study of the past or present or both—it is possible to be right, but the practice is probably not a safe one. Often difficulty in reading aright what

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63. Spiese and Brown: Ann. Surg. **74**: 684, 1921.

64. McCoy, J. N.: The Solar Keratoses and Cutaneous Cancer, Arch. Dermat. & Syph. **1**: 175 (Feb.) 1920. Montgomery, D. W., and Culver, G. D.: M. Rec. **100**: 625 (Oct. 8) 1921.

65. Literature cited is given by Wolbast, M. Rev. of Rev. **27**: 363, 1921.

66. Uhlig, Margaret: Virchows Arch. f. path. Anat. **230**: 76, 1921.

67. Moise, T. S.: Primary Carcinoma of the Lungs, Arch. Int. Med. **28**: 733 (Dec.) 1921.

68. Case reported by Drs. Edward Weiss and F. H. Krusen, J. A. M. A. **78**: 506 (Feb. 18) 1921.

is present makes one hesitate or feel very uncertain; much less can one tell what a cell is going to do when neither it nor any ancestor has yet done the thing in the particular case under investigation; the fact that other cells, in other cases, similarly situated, have followed certain or uncertain courses, may be suggestive, even helpful; but it offers nothing conclusively applicable in any other case.

APPLICATION TO PREVENTION AND TREATMENT

The practical application of our recognition of irritation as a frequent antecedent of malignant disease becomes obvious. It is not necessary to assume that there is a specific tumor excitant, cytologic, microorganismal or chemical, but that cancer often arises under influences the nature of which we cannot at present accurately define, but which tentatively may be termed irritative, fully recognizing how vague and unsatisfactory the designation must be. Fortunately, for practical purposes, this particular indefiniteness is no impediment to our understanding the application to prevention and to treatment. Every delay in the healing of any nonsuppurative process in which the normal tendency to repair is unduly prolonged, no matter where—skin, mucosa, lip, eyelid, tongue, stomach, intestine, rectum, bladder, mamma, vulva, uterus, prepuce or elsewhere—every irritated gland, wart or mole, becomes a source of suspicion; women, especially those who have borne children, must be impressed with the necessity for frequent and careful examination and that they must not await the appearance of symptoms; smokers must know the dangers. All are agreed that the general practitioner, the family physician, must be the disseminator of knowledge and the missionary to the masses; often he has known and been timid; occasionally, unfamiliar with advancing science, he has been a nodding sentinel; the few of this group must be awakened to their responsibilities.

The alarming increase in ignorant but aggressive cults must be controlled. Recently there came to my knowledge a patient with advanced inoperable cancer of the breast who contracted with a chiropractor for and received 100 treatments for "milk-cake"; she was given massage, "adjustments," rough manipulations that often brought tears; she developed spinal and other metastasis and endured hopeless torture through many months before death came to her relief. Hundreds of these cases could be compiled; they are known in every large clinic. The uneducated, deluded or malicious exploiters must be suppressed.

The phobia of cancer-phobia must be suppressed; the older of us recall how filtration of water supplies was fought because the propaganda injured the repute of cities and induced typhoid hysteria; but water filtration came and the very prints that opposed it became the most advanced and active advocates. Education in venereal prophylaxis is progressing. Education as to the dangers from malignant disease, now strongly promulgated by special societies—for example, the American Society for the Control of Cancer—must be continued and extended to national, state and county organizations, but most of all by the family physician and by the nurse; all state health agencies must be increasingly vigilant, and medical men brought in contact with industrial workers must constantly urge the dangers incident to many occupations. When possible, the lesions antecedent to cancer must be better known, and processes that may end in malignancy must be recognized early.

More than forty years ago, Billroth observed that cancer did not develop in the normal mamma; it is doubtful whether it ever arises in the absence of some antecedent lesion; often, as in the skin, such phenomena may be recognized, and it is equally likely that concentrated clinical and pathologic inquiry may lay these processes open to diagnosis in other tissues and organs as well as in the breast. These beginnings of malignant disease, even those processes that may precede it and constitute possibilities, must be better known and treatment directed toward potential dangers of cancerous evolution, if the best results are to be attained. Therein lies prevention, which here, as elsewhere, is far more promising than the best results attainable by any method after malignancy has fully developed.

A CASE STUDY OF INTERMITTENT CLAUDICATION (LIMPING)

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The disease with which this study deals belongs to a group that presents evidence of a peculiar neurovascular pathology. The symptoms throughout the group seem to be brought about largely by spasmodic contraction of some part of the vascular system—sharply intermittent, or more or less continuous. In intermittent claudication this spasmodic feature apparently plays an important part, whether the pathology of arteriosclerosis or obliterating endarteritis is demonstrable or not. Consequently, we find intermittent claudication discussed by some authors under arteriosclerosis; by others, among the angioneuroses. The latter include such conditions as Raynaud's disease, intermittent articular dropsy and scleroderma.

In the case I am presenting, the only evidence I found of vascular disease was a very moderate degree of sclerosis. Because of this, and other facts to be referred to later, my case in its present stage must be regarded as an angioneurosis or angiospasm.

The patient's history presents several salient points associated with intermittent claudication: He was a Jew; he was of middle age, 45; he had used tobacco and alcohol excessively over a period of twenty years. At one time in the whisky business, he used between a pint and a quart of liquor daily, but without apparent effect on his health, or ability to get on. These conditions we find emphasized as especially prominent in the etiology of the disease.

Four months previous to admission to hospital, on a day when he had been walking more than his custom (he had moved about mostly in an automobile), he noticed that his left leg "began to play out on him." It felt "draggy," numb and painful. He quickly discovered that if he rested for a minute or two, the tired feeling and discomfort would disappear and he could resume comfortable walking. He learned, however, that precisely the same lameness reappeared on covering so much as a distance of two city blocks. The brief rest would bring about relief, and on walking again the sense of discomfort would be repeated. This condition had persisted practically unchanged from the onset. The left arm had been similarly affected a number of times, the disability appearing first two months after symptoms were noticed in the leg. It was less severe in the arm, and the occurrence of attacks there bore no relation in point of time with attacks in the leg. More than ordinary exercise of the arm precipitated the symptoms there, and, as in the leg, rest brought quick relief. The patient had observed that leisurely exercise, such as playing billiards, did not induce the symptoms to anything like the same degree as continuous walking. Recently, after a busy day's work in his country store, the occasion being a special sale, the leg became much more readily incapacitated and more painful, as did also his arm. There was a sensation in the leg as of jerking spasmodically without evidence of muscular motion. I was unable to learn whether or not this jerking sensation was synchronous with the beating of the heart. The patient had never been able to observe any change in the color of his leg or foot, either during or between the attacks. (Pallor or cyanosis of the extremity is frequent in the definitely sclerotic type of the disease.) Nor did I find on several examinations any change of color in the extremities affected. The patient had noticed that a clonus of the affected leg developed if it was raised in a flexed position when tired or during an attack.

The patient's abstinence from alcohol and tobacco since the onset of his trouble has made no appreciable difference in the symptoms. The man in his efforts to combat the disease took Turkish baths, massage and electricity twice weekly, practically since the onset. It is possible that the exercise tended to offset any good that he might have received from his other therapy.

The patient had a sallow complexion, was well nourished and was moderately bald. We found no anomalies of the viscera. A differential blood count gave normal results: hemoglobin, 80 per cent.; urine, normal; specific gravity, 1.012; phenolsulphonephthalein test, 55.9 per cent. in two hours; blood chemistry, normal; blood sugar tolerance, normal. Roentgen-ray examination of the aorta by Dr. J. F. McCollough was suggestive of a slight narrowing of the arch.

Erb regards the pulsation in the dorsalis pedis and posterior tibial arteries, especially the dorsalis pedis, as practically a pathognomonic symptom in intermittent claudication. In the case here reported, the pulsations in these vessels were much more reduced on the affected side, while they could be distinctly felt in the opposite leg. I emphasize this finding because I believe that it has an important bearing on the diagnosis in my case. The presence of this sign is definite indication of disease of the arteries of the affected extremity. Its absence would indicate the disease to be of an angioneurotic character. However, we must bear in mind that there is a spinal variety of this disease, as Dejerine [1] has pointed out, due to sclerosis of the vessels of the cord, in which the pulsations in the dorsalis pedis and tibialis are also unaffected. The fact that in our patient the pulsations on the affected side were distinctly lessened suggests the consideration that what appears to be a functional angiospastic condition may sooner or later develop into the definitely organic form.

Oppenheim,[2] who first separated the benign from the organic form of the disease, says that he "by no means excludes the possibility of the functional angiospastic form sooner or later developing into the organic form in accordance with our experience that an arteriosclerotic process or an obliterating endarteritis may develop from vasomotor disturbances." Oppenheim cites a case, apparently of the angiospastic type, in which gangrene developed after fifteen years. There arises also a suspicion as to the possibility of pyramidal tract sclerotic involvement, by reason of the clonus which has been mentioned.

It should be noted that the left radial pulse was weaker than the right, and there was a constant difference of ten points higher registry on the left side in the blood pressure of the upper extremities. There was also a difference of from twenty to twenty-five points in pressure, depending on whether the patient had been at rest for a day or so; the higher records were registered under fatigue and anxiety. The systolic and diastolic pressure range was between 120-85 and 164-105.

There was no change in superficial or deep sensibility or vibratory sense; superficial and deep reflexes were present and equal on the two sides, and were moderately active; there was no Babinski phenomenon; sensation for pain, temperature and pressure was good; the left palpebral fissure was slightly narrower than the right; there was slight flattening of the left side of the face; the pupils were 2.5 by 2.5 mm., slightly irregular, and limited in excursion to light; accomodation was good; the eye-grounds negative. The blood and spinal fluid were negative for syphilis. The patient had had a penile sore twenty-five years previously. There was no other skin lesion; syphilitic treatment was given for a few months at that time. Several years later he was married, and though his wife miscarried twice, there were two healthy living children. Dr. Adolph Koenig, who referred the patient to me, in the light of the probability of the existence of syphilis, administered potassium iodid and mercury for three months, and though well tolerated, it did not reduce the symptons.

During the last three weeks the patient had discontinued the baths, massage and electricity; under rest and a quieter mental attitude the attacks had become much less frequent, and he was able to walk greater distances without provoking the seizures.

In connection with this case it is interesting to note Bing's suggestion that a group of disturbances of considerable intensity, but of fleeting character, which have been considered as neuralgias are probably due to vascular spasms in the central nervous organs, or in their posterior roots. In this connection he mentions attacks in the limbs or in the region of the trigeminus, where there is an absence of pressure points along the nerves in question, and he reminds us of the spasmodic character of tabetic crises; also, when the spasm is of cerebral origin (the temporary paresis of an arm or leg, or temporary motor aphasia) he believes that the condition may be due to vascular spasm.

While it is true that intermittent claudication is a rare condition, there is reason for believing that a similar neurovascular pathologic condition may be responsible for a number of other diseases of obscure etiology more frequently than is generally understood. We have only to consider the manifold symptoms which are possible as a result of vascular spasm through the various portions of the central nervous system, as well as in the vascular supply of the body viscera, to realize the importance of this etiologic factor. As an example of a mechanism similar to that incident to intermittent claudication, we can mention the attacks of angina pectoris with its diseased coronary arteries. The various manifestations of angioneurotic edema strongly suggest a similar mechanism in the finer capillary arterial and venous systems. As a result of the localized edemas of an angioneurotic character occurring in portions of the brain or cord, we may have results simulating those of tumor, and it is not improbable that in some cases in which a tumor diagnosis has been made, and no tumor found, the cause has been one of angiospasm. Likewise, various neuralgias, migrainous attacks, and certain transient palsies, seem to have as their basis the ischemia and spasm which figure so prominently in intermittent claudication.

818 Westinghouse Building.

Appropriations for Ambulatory Sick.—A survey of 100 of the largest cities of the United States was made by the executive committee of the Medical College of Virginia to ascertain the amount of money being appropriated by them for the treatment of ambulatory sick. Sixteen cities were visited and questionnaires were sent to eighty-four, ten of which did not reply. Five of the cities that reported made no appropriations. The eighty-five cities on which the report was based, containing about one fifth of the population of the United States, gave an average per capita appropriation for this work of 13 cents. Forty-one cities reported an appropriation of less than 10 cents per capita.

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[1] Dejerine, in Bing: Nervous Diseases, p. 226.

[2] Oppenheim: Text-Book of Nervous Diseases, Ed. 5, **1**: 587.

THE AMOUNT OF OPIATES USED IN THE LEGITIMATE PRACTICE OF MEDICINE

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In all discussions of the narcotic question in the United States, no figures have ever been obtainable of the amount of opium and its alkaloids used in the ordinary practice of medicine. In the report of the Special Committee of Investigation appointed by the Secretary of the Treasury in 1918, on the traffic in narcotic drugs, it is said that the yearly consumption of opium in the United States for the period 1910-1915 averaged 491,043 pounds. It further says:

> It has been stated that about 90 per cent. of the amount of these drugs entered for consumption is used for other than medical purposes. While this statement is probably extreme, a comparison of the per capita consumption in this country with that of other countries indicates that this country consumes from thirteen to seventy-two times as much opium per capita as is consumed by other countries, the records of which were available. The following table [Table 1] brings this out more clearly:

TABLE 1.—PER CAPITA CONSUMPTION OF OPIUM BY UNITED STATES AND CERTAIN FOREIGN COUNTRIES *

Country	Population	Total Annual Consumption Pounds	Consumption per Capita, Grains
Austria	46,000,000	3,000-4,000	½-⅗
Italy	33,000,000	6,000	1
Germany	60,000,000	17,000	2
Portugal	5,500,000	2,000	2½
France	40,000,000	17,000	3
Holland	6,000,000	3,000	3½
United States	92,000,000	470,000	36

* The population is that given for 1910.

> As the average dose of opium is 1 grain, the amount consumed in the United States per annum is sufficient to furnish thirty-six doses for every man, woman and child. When it is considered that the greater portion of our citizens do not take a single dose of opium year after year, it is manifest that this enormous per capita consumption is the result of its use for the satisfaction of addiction.

Since the Harrison law requires a record to be kept in each hospital of the amount of opium and its alkaloids purchased and the amount consumed, it would seem possible, by calculating from the number of patients treated in the hospitals and the amount consumed, to obtain a fairly accurate idea of the amount of opium and its alkaloids used in the legitimate practice of medicine. From previous investigations it is known that from 2 to 2.25 per cent. of the population are sick in the year, and that from 18 to 23 per cent. of these patients are sufficiently ill to be in the hospital. On the basis, therefore, of 23 per cent. of 0.0225 per cent., that is, that 0.005175 per cent. of the population are hospital patients, one obtains an approximation of the amount of opiates used in the practice of medicine. If, therefore, without taking any account of the illness or the injury which brought the patient to the hospital, without discussing the therapeutics, and scattering the hospitals over a sufficient area in the United States to prevent local peculiarities from coming in, it would seem that a fair estimate can be obtained. This has been done, and the statistics here presented are from the records of hospitals for the years 1920 and 1921, and these hospitals are scattered from New England to the Pacific coast; from the populous Middle Atlantic states; from the Northwest and Great Lakes down the Mississippi Valley to the Gulf and the borders of Mexico, and along the Rocky Mountain states to complete the area covered. They are from hospitals dealing with general medicine and surgery; special hospitals devoted to the care of children and maternity cases; industrial hospitals of large industries, and hospitals caring for cancer cases, in which the use of the opiate is a necessity in large amounts; so that they comprise hospitals using a minimal amount of opiates, hospitals using a maximal amount, and large hospitals in general medicine and surgery using average amounts.

TABLE 2.—HOSPITAL PATIENTS

	No. of Patients	Grains of Morphin	Grains of Heroin	Grains of Opium	Grains of Codein
1920	412,196	148,448.22	11,708.12	109,073.76	176,438.80
Amount per patient	....	0.3600	0.0281	0.2646	0.4280
1921	442,921	140,603.18	8,730.48	173,169.36	220,262.64
Amount per patient	....	0.3174	0.0197	0.3909	0.4995
Totals	855,117	289,052.40	20,438.6	282,143.12	396,701.44
Amount per patient	....	0.3387	0.0239	0.3277	0.4637

The intention, at the beginning, was to calculate only from hospital patients; but the statistics of some of the hospitals have made it impossible to separate hospital bed patients from the ambulatory dispensary patients. This seemed, at first appearance, a disadvantage; but on second thoughts it proved the reverse, as it gives the difference between the amounts used among all patients and the amounts used solely for bed patients. There is an interesting difference between the two in that the amounts of morphin, codein and heroin used are less among the dispensary patients, but the amount of opium is more per patient. This agrees with the rational therapeutics that one would expect to find for the morbid conditions usually presented.

In Tables 2 and 3 the variation between the two years is averaged up in the total. We see, therefore, that in caring for the hospital patients there is prescribed during the year an amount equivalent to giving each patient ⅓ grain of morphin, 1/42 grain of heroin, ⅓ grain of gum opium, and practically ½ grain of codein.

TABLE 3.—HOSPITAL AND DISPENSARY PATIENTS

	No. of Patients	Grains of Morphin	Grains of Heroin	Grains of Opium	Grains of Codein
1920	780,428	80,372.175	5,350.84	367,419.545	228,799.215
Amount per patient	....	0.1030	0.0068	0.4607	0.2932
1921	920,494	115,372.03	5,129.46	383,601.257	295,288.91
Amount per patient	....	0.1253	0.0056	0.4167	0.3208
Totals	1,720,922	195,744.205	10,480.30	751,021.302	524,088.125
Amount per patient	....	0.1137	0.0061	0.4365	0.3045

In hospital and dispensary patients, we find necessary an amount equivalent to giving each patient about 1/9 grain of morphin, 1/164 grain of heroin, ½ grain of gum opium, and practically ⅓ grain of codein.

To obtain the amount of opium necessary to be imported into this country, we must translate these terms of alkaloids into terms of gum opium, and we must therefore consider for a moment the chemistry of their preparation. In every 100 parts of opium, the U. S. Dispensatory states, there are 10 parts of morphin and 3/10 of a part of codein. Cushing gives 5/10 of a part of codein. We will use the 3/10, as it will produce a larger total, and we shall thus obtain an amply sufficient supply. The amount of opium required is therefore governed by the amount necessary to obtain the amount of codein used. Codein, moreover, is obtained from the mother liquor of opium after the morphin is crystallized out. If we, therefore, have enough opium to give us the codein, we shall have an excess of morphin. Heroin is diacetylmorphin, and is made by treating morphin with acetyl chlorid. Dionin, on the other hand, is ethylmorphin, and is made by the action of ethyl iodid in the presence of an alkali on morphin. The necessary amounts of dionin and heroin, therefore, are easily obtainable from the excess of morphin which remains after the demands in medicine are satisfied, since, as we have said, the opium used to obtain the codein contains thirty-three and one-third times as much morphin as codein.

In calculating, therefore, the amount of opium required on the basis of the amount of codein desired, we are amply providing for the alkaloids here mentioned and usually employed in medical practice.

Among the hospital patients, taking 0.4637 grain as the necessary amount of codein for each patient yearly, it must be equivalent to 0.3 per cent. of the total amount of opium required for each patient yearly, since gum opium contains 3/10 part of codein per hundred parts of opium. Each patient, therefore, will require 154.56 grains of opium yearly to make the necessary amount of codein. By adding to this 0.3277 of gum opium required as opium, we have 154.88 grains. If we add the maximal amount of gum opium as calculated for the dispensary patients of 0.4384, we get 154.99 grains. In either case it is practically 155 grains of opium that is necessary to produce the amount of codein plus the amount of gum opium necessary to obtain both gum opium and its alkaloids of codein, morphin, and the synthetic heroin and dionin. One hundred fifty-five grains of opium will give 15.5 grains of morphin; and as each patient in the hospitals requires, according to our calculations, only 0.3387 grain yearly, there will each year remain an excessive amount of morphin.

Two and twenty-five hundredths per cent. of all the population are sick in this country each year. At present, the population of the United States is given as being 106,000,000. Two and twenty-five hundredths per cent. of this number is 2,385,000. Multiplying this by the 155 grains for each patient and dividing the result by the 413 grains in an avoirdupois ounce, and again dividing that quotient by 16 ounces, we obtain 55,943½ pounds of opium. Opium is distributed medically in Troy ounces of 480 grains to the ounce and 12 ounces to the pound, but is bought in avoirdupois ounces of 413 grains to the ounce and 16 ounces to the pound. This is calculating on the basis of every one being as sick as the hospital patients. Taking, however, the amount required by the hospital and dispensary patients combined, which perhaps is a fairer estimate, we find that the amount of codein required is 0.3045 grain; and, adding the amount required of gum opium in the dispensary, 0.4365 grain for each patient, we have 101.9 grains for each person required to give the desired amount. Multiplying, therefore, the 2,385,000 patients by 102 grains, we find that 37,117 pounds will be required.

Thus, it is seen that the amount of opium required in the practice of medicine depends on whether we calculate by the amount of codein used only among hospital patients, or whether we calculate by the amount of codein required in hospital and dispensary patients together. Somewhere between 37,500 and 56,000 pounds is probably nearer the truth. Calculating from the 77 per cent. dispensary patients and 23 per cent. hospital patients combined, we have 23 per cent. of 2,385,000, or 545,550 patients as hospital patients, requiring yearly, at 155 grains for each patient, 12,796 pounds of opium, and 1,839,451 patients as dispensary patients requiring, at 102 grains each, 28,393 pounds of opium, or a total of 41,189. To assure an ample amount for even an increased demand of codein, 45,000 pounds of opium may well be considered an abundant amount of opium to be imported each year for medicinal use. This is less than one-tenth the actual amount now imported, and supports the statement of the Treasury Report on Traffic in Narcotic Drugs that 90 per cent. of the amounts of these drugs entered for consumption is used for other than medical purposes.

These figures do not include the practice of dentistry and veterinary medicine; but the excess of morphin obtained in making the codein beyond that required in the practice of physicians will be more than ample to supply the legitimate needs of the dentists and veterinary surgeons.

43 East Seventy-Second Street.

NONPARASITIC CYSTS OF THE LIVER

REPORT OF CASE

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Nonparasitic cysts of the liver are exceptional. Moschowitz, in 1916, found only eighty-three cases in medical literature.

There are two varieties: (1) Those which are usually associated with cysts of the kidney. These are always congenital, even when found in adult life. They are more common in females than in males, and are usually excessively numerous.

(2) Those not associated with cysts elsewhere. They are of all sizes, and may number from one to a dozen. A special variety of this group is the solitary hepatic cyst, such as found in the case here reported.

According to Allbutt and Rolleston, this is rare. The cysts occur at the free border of the liver, and have a thin strand of hepatic tissue over them. Bland Sutton, who reports one such case, suggests that these cysts probably form from the dilatation of bile ducts, which subsequently fuse and form the cyst. They are found only in women, and may be associated with tight lacing. In the two cases reported by Mayo, the cysts contained from a pint to a quart of clear fluid. In Bland Sutton's case also there was a quart (liter).

Multiple cysts are not amenable to surgical treatment. The solitary cyst may be treated by enucleation of its wall, as is done in hydatids. This, however, is difficult, and the hemorrhage is likely to be severe. Simple drainage is said to be adequate in most cases.

REPORT OF CASE

A white woman, 5 feet 4 inches (162 cm.) high, weighing 265 pounds (120 kg.), the mother of thirteen children, the deliveries of all of whom had been normal, with negative personal and family history, was first seen in consultation three days prior to the operation. At that time she was complaining of vague upper abdominal pains, mostly in the epigastrium, and radiating to the right hypochondrium. There had been constipation and indigestion, but no attacks of acute pain. The patient was extremely obese, but even through her thick abdominal wall it was possible to feel a mass in the right upper quadrant, apparently the size of a fetal head. An umbilical hernia of small size was also present. The abdomen was otherwise normal. Operation was advised, and the patient was admitted to the hospital, March 27, and operated on the same evening.

A Mayo-Robson incision was made in the gallbladder region, and a mass, about the size of a grapefruit, which looked at first to be a greatly distended gallbladder, presented itself. The mass, however, arose from the lower border of the liver itself, and was lying in the gallbladder fissure. The liver substance of the right lobe was continuous with the anterior cyst wall. The posterior surface of the cyst was formed in part by the anterior wall of the gallbladder. The gallbladder was normal. The contents of the abdominal cavity were well walled off with large abdominal packs. The cyst was aspirated, and about 600 c.c. of clear fluid was removed. The cyst wall was then phenolated, as much as could be safely removed was excised, and the remainder was closed with a purse-string suture of No. 2 catgut, around a rubber tube drain.

The fluid removed was clear, colorless, and with a specific gravity of 1.006. There was a slight bloody sediment, but no sugar or albumin. Its reaction was neutral. The Rivalta test was negative. The Gram stain was negative. No tubercle bacilli were found. A careful search for hooklets, ova and parasites was made, but none were found. There was no growth on blood agar or plain boullion.

The umbilical hernia was also repaired.

The patient made an uninterrupted recovery.

COMMENT

1. Solitary nonparasitic hepatic cysts are extremely rare.
2. They are found only in women.
3. The diagnosis is only by inference, as they present no peculiar symptoms.
4. Simple drainage will usually effect a cure.

104 St. Charles Place.

HYPERTHYROIDISM IN CHILDREN BEFORE PUBERTY

REPORT OF CASE

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From a review of the voluminous literature in hyperthyroidism, one is impressed with the rarity of exophthalmic goiter in children before puberty, especially in children under 5 years of age. Of 3,477 cases compiled by Sattler, only 184 were in children under 15 years of age. In 1908, Schkarin found five cases in the literature. His patient, a girl, aged 4½ years, was the sixth. White, in 1912, reported a case of congenital exopthalmic goiter. Klaus, in 1914, reported a case of hyperthyroidism in an infant, aged 9 months, making a total of eight cases of hyperthyroidism in children under 5 years of age reported up to the present time. I have reviewed both American and foreign literature carefully for the last twenty years and find eighteen cases reported in children under 12 years of age. I find only two cases in which operation has been performed. My patient was six years old, the youngest one that has been reported as operated on.

REPORT OF CASE

History.—A white American girl, aged 6 years, admitted to my service, Jan. 25, 1921, complained chiefly of choking and dyspnea. The family history was negative. The child had a normal delivery. She had had measles and tonsillitis, but the history otherwise was negative.

The mother had noticed a goiter on the child's neck for the past year. Apparently it was growing larger. The child tired greatly when playing, and had to sit down and rest. She had choking sensations, palpitations, nervous, crying spells, apprehensions, hot and cold flashes, cold hands and feet, fainting spells, and memory lapses. There had been marked loss of weight in the last six months.

Examination.—The eyes reacted to light and accommodation; there was a slight lagging in following the finger, and a widening of the palpebral fissures. The tonsils were enlarged and cryptic; pus was expressed from the right tonsil. There was uniform enlargement of the thyroid gland, with mild trocheal tug. The heart was slightly enlarged. There were blowing systolic murmurs over the aortic area. There were pulsations in the neck. There was definite tachycardia. The radial pulse was 120 lying down; standing, 140. The lungs were resonant throughout. Breath and voice sounds were normal; there were no râles. There was marked tremor of the outstretched hands. The knee jerks were active.

The urine was normal. Examination of the blood revealed: leukocytes, 7,800; polymorphonuclear neutrophils, 68 per cent.; lymphocytes, 30 per cent.; large mononuclears, 2 per cent.; erythrocytes, 4,320,000; hemoglobin, 75 per cent.; coagulation time, four minutes; Wassermann reaction, negative.

A diagnosis of hyperthyroidism was made.

Treatment.—The child was kept in a quiet room at absolute rest in bed. Special attention was given to a nourishing diet, and the usual medical measures were employed for three weeks without any improvement. A tonsillectomy was performed. Both tonsils were cryptic and contained pus. There were no postoperative complications, and the patient was kept in bed for two months longer without any apparent improvement. We thought that the removal of the foci of infection in her tonsils, a probable predisposing cause of the hyperthyroidism, would lead to improvement in the toxic symptoms. Instead of improving, however, the child was gradually losing weight, and it was decided to operate.

Operation and Result.—Under gas-oxygen anesthesia, a collar incision was made. The infrahyoid muscles were separated and retracted, and the gland was exposed and delivered. Both lobes and the isthmus were uniformly enlarged, adherent and hypervascular. A partial thyroidectomy was done, removing three fourths of both lobes and the isthmus. After complete hemostasis the wound was closed in the usual manner without drainage. The child reacted well to the anesthesia, talking when returned to bed. She had no complications. Convalescence was smooth, and she showed daily improvement. The sutures were removed on the third day; the wound was clean. She was discharged from the hospital two weeks after operation, greatly improved.

Histologic examination of the specimens revealed hyperemia with increased vascularity, comparative absence of colloid, extensive cellular hyperplasia, and interstitial fibrosis. The pathologic diagnosis was exophthalmic goiter. The child gained weight steadily, and entered school. She kept her work up with the average child of her age. One year after the operation she had grown considerably and was enjoying perfect health. The pulse was 75, the heart was normal, and she was completely relieved of all toxic symptoms.

COMMENT

This is the only case of hyperthyroidism I have found in children before pluberty in the examination of several hundred goiter patients. Exophthalmic goiter in the young is a most serious condition. It may appear at an early age. C. H. Mayo had a marked case beginning at the age of 5 years; the patient was operated on at 7 with great benefit. Sawyer performed a single lobectomy on a girl, aged 10 years. The patient made an uneventful recovery. The pathologic diagnosis was colloid and exophthalmic goiter. These two cases are the only ones I can find in the literature in which the patients underwent operation. My patient is the youngest that has had a bilateral resection for hyperthyroidism.

The ordinary physiologic enlargment of the thyroid gland seen at puberty must not be confused with this condition. The former is probably the enlargement of the thyroid gland, which takes place at this time of life to meet the needs of the body and is not attended by any symptoms of disease. Exophthalmic goiter, on the other hand, is a poisoning of the system by the excess of secretion. In such cases some form of medical treatment should be instituted to improve the condition; when, however, medical treatment is ineffectual, surgical treatment should be instituted before consequent terminal degeneration.

PERINEAL ABSCESS COMMUNICATING WITH URETHRA IN BULBOMEMBRANOUS PORTION

REPORT OF CASE SIMULATING EXTRAVASATION OF URINE *

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Extravasation of urine into the perineum, between the deep perineal (Colles') fascial and the superficial layer of the triangular ligament is of rather frequent occurrence, and requires prompt surgical interference to avoid gangrene and extensive sloughing, resulting often in a high mortality from shock and sepsis.

Rupture of the urethra occurs most often in the bulbomembranous portion—the fixed portion of the urethra. It is due to trauma, either direct trauma to the perineum, or to the indirect trauma from urinary pressure behind the obstruction of the urethra, usually stricture, which is the most common at this point. The extravasation extends forward along the bulb to the scrotum, and then upward under the abdominal fascia.

Given a history of sudden sharp pain in the perineum accompanying injury or strain, followed by marked difficulty of urination, or complete retention, the first thought should be rupture of the urethra. Bladder drainage should be immediately accomplished, either by urethral catheter or suprapubic puncture or cystotomy, and at the first sign of perineal induration or swelling, free incision should be made lateral to the bulb through the deep fascia.

Unfortunately, a majority of these cases are not seen until several hours after rupture has occurred and extensive extravasation has taken place. The case here reported of abscess formation under the deep perineal fascia, extending forward to the scrotum and upward under the abdominal fascia, simulates an extravasation. The roentgenogram illustrates the route taken from the bulbomembranous portion forward alongside the bulb and spreading in the region of the scrotum.

REPORT OF CASE

History.—K., a man, aged 49, admitted to the hospital, Feb. 6, 1922, complained of difficult, frequent and painful urination, with pain and swelling in the scrotum. The receiving staff made a provisional diagnosis of epididymitis. The onset of the symptoms occurred about four days before, and rapidly progressed to the stage of the severity noted. There was no history of injury or strain, with sudden pain and difficult or bloody urination. The patient admitted, however, that for one week previously he had been troubled with frequent urination, slight pain, and difficulty. He denied present or previous gonorrheal infection, although the urethral secretion contained pus and intracellular, gram-negative diplococci. When seen a few hours later, the patient appeared decidedly toxic. The temperature was 103.4 and the pulse 110.

On examination, the outstanding feature was the enlargement of the scrotum—about three times normal. There was edema, redness and tenderness, which extended upward, involving the right inguinal region, with redness extending to the costal margin. There was no discoloration of the scrotum or the surrounding tissues. The scrotum transilluminated well. The perineum was slightly swollen and tender. There was a slight sensation of fluctuation.

The patient was voiding a small amount of urine about every ten or fifteen minutes, with marked difficulty and pain. The urine was free from blood, but contained a large amount of pus. Attempts to enter the bladder by the urethra were unsuccessful.

A provisional diagnosis of perineal abscess with possible extravasation of urine was made.

Operation and Result.—Under gas-oxygen anesthesia, the bladder was opened suprapubically, and about 300 c.c. of foul urine evacuated. There was considerable infiltration of the structures beneath the abdominal fascia, but no extravasation of urine. Incision was made through the abdominal fascia, parallel with, and internal to, Poupart's ligament. A large amount of pus was evacuated. The patient was placed in the lithotomy position, and an incision made through Colles' fascia in the midperineum, lateral to the bulb. A large amount of pus was evacuated. Incisions were made through the fascia, and the dependent portion of the scrotum on both sides, and a small amount of thin, sero-purulent fluid seeped out.

There was an immediate drop in the temperature. The discharge of pus from the wounds rapidly decreased. All the wounds except the suprapubic wound healed on the fourteenth day, the patient passing some urine by the urethra. Le Fort sounds of 18, 20 and 25 caliber were passed with slight difficulty. On withdrawal, a considerable amount of pus escaped from the urethra. The urethra was injected with 50 per cent. sodium bromid, and a roentgenogram made. The perineum was again opened, and the cavity, noted in the roentgenogram, drained. The patient began passing urine by the urethra, all the urine being passed this way by the twenty-first day without difficulty. All wounds healed.

COMMENT

Interest attaches to this case principally in that we were able to visualize by a roentgenogram the urethral outline and the course taken by the abscess in its progress forward under Colles' fascia, which is identical with that taken by extravasating urine when rupture of the urethra occurs in the perineal portion. Abscess of this type occasionally occurs back of a urethral stricture, and is often complicated by extravasation of urine due to communicating slough into the urethra, the urine taking the line of least resistance, which is into the perineum rather than through the stricture. In this particular case this condition was not present, as there was at no time any urine outside the urethra, and the patient was passing urine by the urethra at the time the roentgenogram was made, which would indicate that the line of least resistance was through the urethra and not into the abscess cavity, and that the communication with the urethra was anterior to the cut-off muscle, the action of which prevented the bromid solution from passing into the bladder, thus diverting it into the cavity outside the urethra. The abscess probably began as an infection of a follicle of the bulb, or of Cowper's gland.

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* From the urologic department of the Kansas City General Hospital.

Clinical Notes, Suggestions, and New Instruments

A BEDSIDE TELEPHONE

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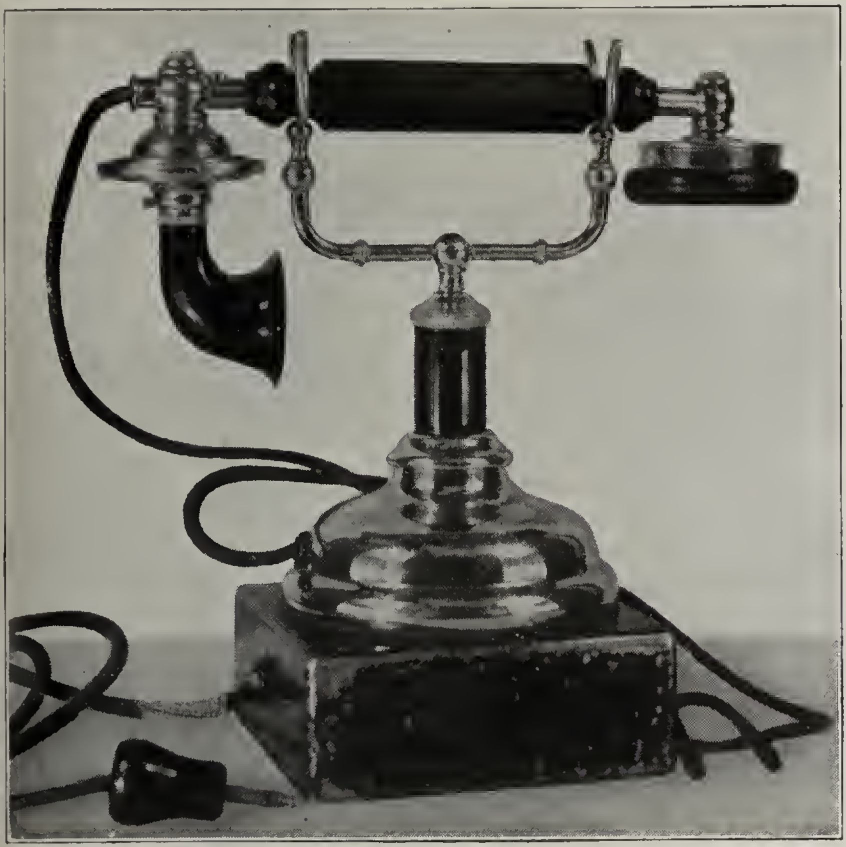
The oft repeated statement that we spend one third of our lives in bed is probably true for the average person. In that one third the average physician certainly has many telephone calls. The number, of course, depends entirely on the character of his practice. It does not apply to the city specialist, who sees to it carefully that his name is omitted from the residence list of the telephone directory. The man doing family practice, or emergency or industrial surgery, must literally sleep with his telephone. Before the World War I was for many years surgeon to a railway, light and power company. For ten years the telephone herewith illustrated was a source of great comfort and convenience.



Bedside telephone.

It combines the bell in the base with the continental type of hand telephone, with the receiver and transmitter in one piece, and can comfortably be used with one hand without raising the head from the pillow. It is provided with a plug, to fit jacks in the bedroom, sleeping porch, library and breakfast room. It has the great merit of requiring only the self-contained bell for this variety of locations, and does not demand defacing the house with unsightly wall bells that ring when they are not wanted.

To patients in the hospital, the bedside telephone is often a great convenience. Short convalescences may be a source of comfort and entertainment for the convalescent. For the business man recovering from some surgical procedure, which keeps him in bed only because postural rest is necessary, the bedside telephone is something more than a matter of passing interest. It enables him to keep in touch with his business in an easy way that satisfies his mind, and lessens the urgency to get out of bed or go home sooner than the necessities of the case make advisable. In this way it is a valuable addition to our surgical therapeutics.

My own telephone was assembled. The upper part is an Ericson, which did not at that time have a bell. I had a bell box attached, which, however, was "foreign equipment," and quite against the rules of the Bell Company. After much argument I was permitted to use it as a sort of laboratory experiment, with the express understanding that it should not establish a precedent for its use by others

About this time I built a new residence just outside the city limits, and had it liberally supplied with jacks in the various sleeping and living rooms, and garage. There were twelve in all, and I paid for the equipment and installation. I knew nothing then about a service charge for jacks. It was only when pruning down overhead expenses at the time I went into military service that I discovered that I had been paying a service charge of twenty-five cents a month on each jack. In other words, for equipment which belonged to me I had paid the company about $300 for a supposed service that had not cost them one cent, as no repair had ever been required. The attention of public service commissions is invited to this. It must be a local rule of the Oregon commission. On a recent visit to Los Angeles I found twenty rooms at the Good Samaritan Hospital equipped with jacks, and the ordinary desk telephone circulating between them. The entire charge for this was one dollar a month, and no service charge for the jacks.

The Ericson phone is now made by the Federal Telephone and Telegraph Company, with the bell in the base, and recently the Western Electric has added a similar instrument to its output. That will, I fancy, do away with talk about "foreign equipment," and the medical profession, and then patients, may have an adaptable bedside telephone.

The attention of telephone companies is invited to the economic importance of this real need. The Directory of the American Medical Association contains the names of 159,250 physicians, and a list of 6,794 hospitals. It is believed that the medical profession will find this bedside telephone a great convenience to themselves for night use, and to some of their patients during convalescence.

HEART BLOCK AS A FAVORABLE INFLUENCE IN THE PROGRESS OF CHRONIC FIBRILLATION

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President, Good Samaritan Dispensary; Consultant Cardiologist, Lincoln Hospital

I have already reported quite a number of examples of heart block in rheumatic hearts with mitral stenosis, in which the heart block had acted favorably in preventing the evil influence of fibrillation of the auricle.

A few days ago an illustration of another variety of the same compensating mechanism came under my observation in the person of an elderly man (Mr. L. P. H. F.) whom I saw for the first time in April, 1919, when he was 70 years of age.

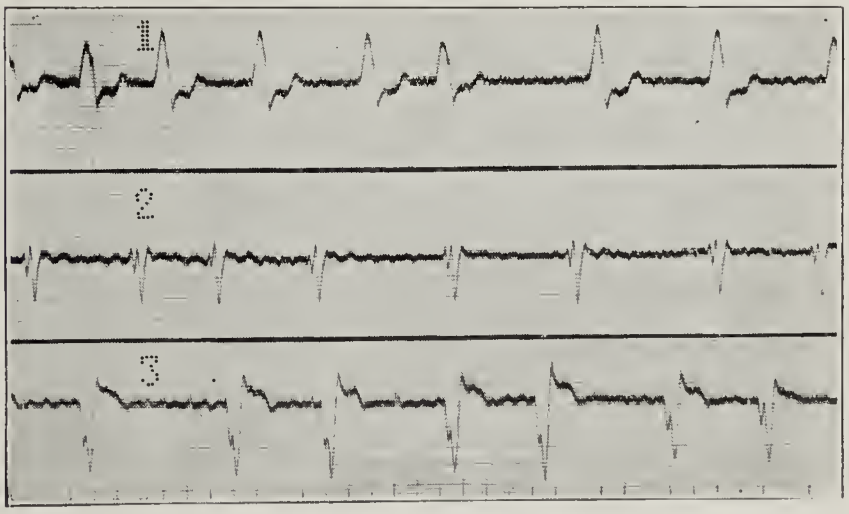


Fig. 1.—Fibrillation of auricle compensated by heart block, April, 1919.

The electrocardiogram, taken in 1919, revealed a fibrillation apparently partially blocked by a bundle branch lesion. Additional observations on his heart made in May, July and October of that year gave much the same picture as the one taken in April, 1919, excepting that in October the block did not appear so efficient and the heart had speeded up a little.

Figure 1 is the electrocardiogram of April, 1919, and Figure 2 of March, 1922, the latter being taken in the man's seventy-fourth year.

During the interval of three years, the patient has been actively engaged in business and has lost but little ground as to his general condition.

There has been practically no digitalization of his heart during this time.

Incidentally, it may be remarked, in connection with the present controversy as to the advisability of the routine use of the electrocardiograph, that without the use of this instrument it would be impossible to demonstrate the true cardiology of this case; and there are many others in the same category.

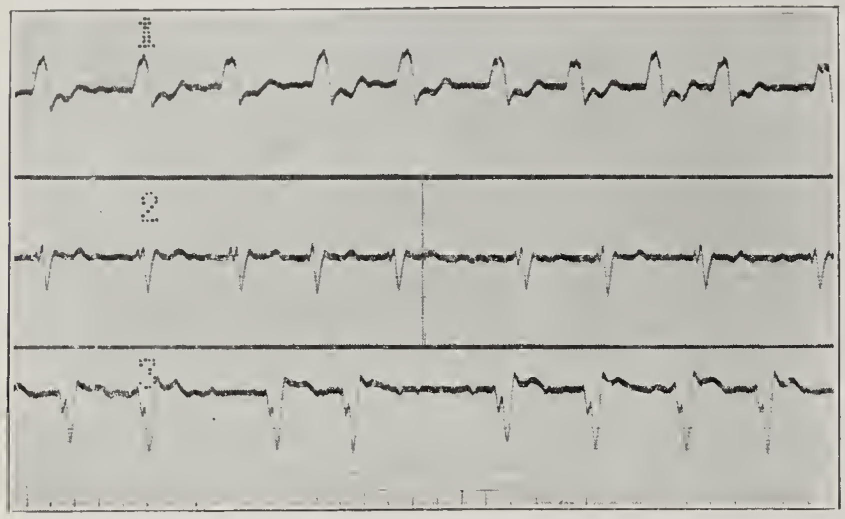


Fig. 2.—Fibrillation of auricle compensated by heart block, March, 1922.

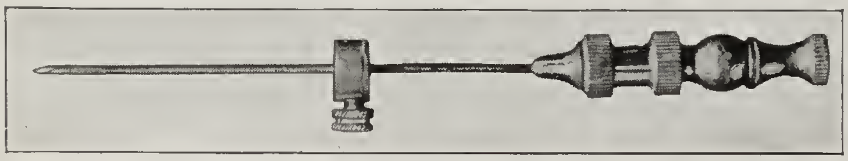
109 East Sixty-First Street.

STOP FOR CISTERNAL PUNCTURE NEEDLE

Hubert S. Howe, M.D., New York

Puncture of the cisterna magna, as described by Ayer, is a procedure which is invaluable in some conditions. It is indispensable in the treatment of meningitis with spinal subarachnoid block, when no fluid can be obtained through spinal puncture. The procedure is obviously not without risk, on account of the proximity of the medulla. Ayer has carefully worked out the proper technic and gives it about as follows:

The patient is placed in the lateral position with the neck moderately flexed, but maintaining the spine and head in a horizontal plane. The needle is inserted in the midline just above the spine of the axis, and directed forward and upward in line with the external auditory meatus. The cistern is entered at a depth of from 4 to 5 cm. This distance is much less variable than that of spinal puncture in the lumbar region. Ayer has also shown that if the cistern is entered at this angle there is a space of from 2.5 to 3 cm. between the dura and the medulla. He advises that a scratch be made on the needle 6 cm. from the tip, and that it never be inserted deeper than this. As there is some resistance as the needle passes through the dura, and a little more force must be used to penetrate it, it is conceivable that the needle, even in the most careful hands, might go in farther than desired. In order to make this impossible, I have devised a simple stop. It is a short, cylindric piece of nickel-plated brass, 4 mm. in thickness and 8 mm. in diameter, with a hole in the center large enough to admit an 18 gage needle. In order to hold it firmly in place, there is a screw on the side. This stop is placed on the needle at a distance of 5.5 or 6 cm. from the tip, and makes it impossible to insert the needle more than this distance. It should never be used on a steel needle, as the pressure of the screw might crack the needle at this point. A gold needle is tough and not brittle, and is the most satisfactory.



Stop for cisternal puncture needle.

The stop is made by James T. Dougherty, 409 West Fifty-Ninth Street, New York.

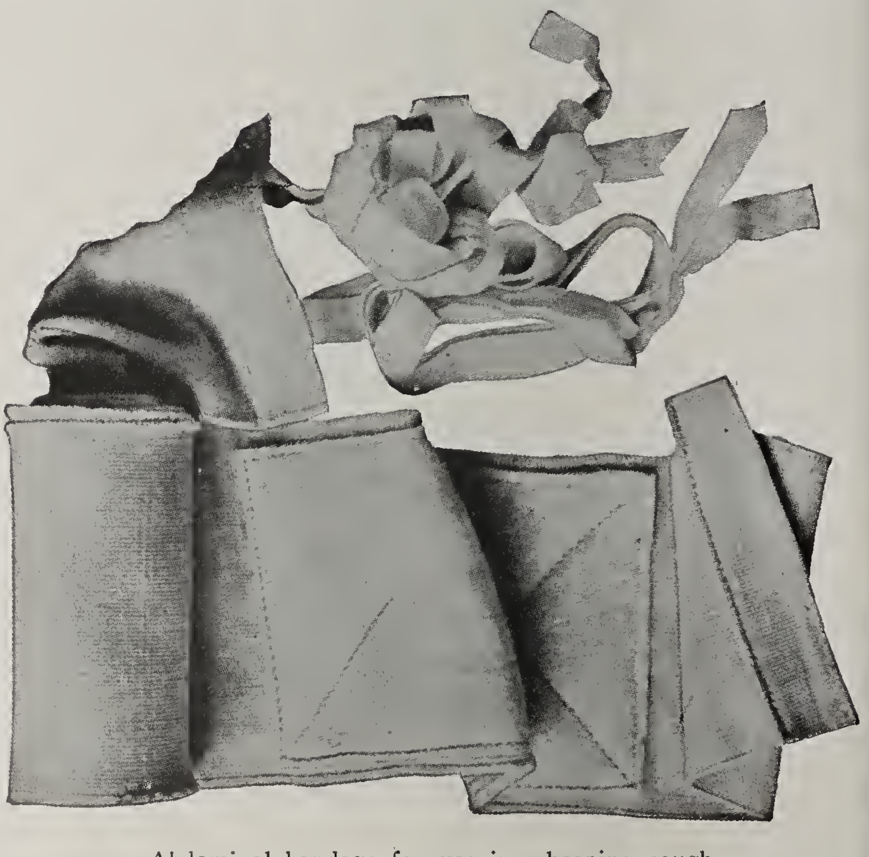
131 East Sixty-Seventh Street.

AN ABDOMINAL BANDAGE FOR PATIENTS WITH WHOOPING COUGH *

Paul Luttinger, M.D., New York

A child during a paroxysm of whooping cough tries frantically to clutch at some support. Various attempts have been made to supply a thoracic or abdominal support for such children. In 1904, Kilmer [1] reported eighteen consecutive cases of whooping cough treated with a special abdominal belt. Three years later, he [2] reported 550 cases treated with his elastic belt (improved model); a general improvement was noted in 95 per cent. of the cases, especially in the reduction of vomiting spells. The original Kilmer belt constricted the thorax as well as the abdomen, was rather heavy, and its price was beyond the means of the average dispensary patient. These drawbacks induced me to devise the bandage here described, which can be obtained for about one dollar.

It is made of the best staple Sea Island cotton, specially woven, so that although it does not contain any rubber, it will stretch considerably (to nearly double its length). This porous weave insures coolness. It will stretch without narrowing, and the feathered edges will not ravel, thus adding greatly to the life of the bandage. At one end of it, there is a reenforced rectangular patch which covers the umbilicus and is resistant enough to prevent the formation of umbilical or other hernias, which often occur during an attack of pertussis. The other end of the bandage has two double tapes sewed to it, so as to go around the body and prevent it from displacement. The sizes for younger infants have a reenforced edge for safety-pins.



Abdominal bandage for use in whooping cough.

The bandage can be washed with soap and warm water, dried on a flat surface without stretching, and ironed crosswise. This procedure will restore its elasticity.

The length of the bandage is 5½ yards (stretched) and 3 inches wide for infants less than 1 year old. Those older than a year take a 4 inch bandage, while those over 2 years take a 5 inch bandage with tapes. The bandage can also be obtained in 6, 7 and 8 inch widths, according to the age of the child.

I found these bandages very serviceable in all stages of whooping cough. When applied early, they positively lessen the number of vomiting spells, and thereby contribute to better nourishment and resistance to the infection. The child is comfortable, and the older children often cry for it. They

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* Demonstrated before the Clinical Society of the Bronx Hospital, March 13, 1922.

[1] Kilmer, T. W.: A Study of Eighteen Consecutive Cases of Whooping Cough Treated by the Elastic Abdominal Belt, J. A. M. A. **43**: 1749 (Dec. 10) 1904.

[2] Kilmer, T. W.: Whooping Cough: Five Hunderd and Fifty Cases Treated by the Abdominal Belt, J. A. M. A. **49**: 1750 (Nov. 23) 1907.

seem to feel a sense of security with it as they have "something to cough against."

I do not think the bandage has any direct influence on the paroxyms. The improvement noticed by Kilmer was probably due to its indirect effect of promoting the general comfort and preventing vomiting. It is possible that this is due to pressure on the vagus, as it has been noticed by ocean travelers that tightening the abdomen often prevents sea-sickness.

In view of the decided benefit derived from the wearing of the abdominal bandage, particularly the almost immediate disappearance of the vomiting, I strongly recommend its use in every case of pertussis.

The bandage is manufactured by Becton, Dickinson & Co., Rutherford, N. J.

1173 Washington Avenue.

TABES DORSALIS PLUS TERTIARY CUTANEOUS SYPHILIS

B. Barker Beeson, M.D., Chicago

Mr. H., aged 57, of German birth, a wood-worker, consulted me in November, 1920, on account of "sores" which had been present on his back for several months. He was seen through the courtesy of Dr. O. W. McMichael, who had previously treated him for pulmonary tuberculosis. The patient had contracted syphilis in Brazil in 1898. The only medication consisted of pills and a salty liquid (probably potassium iodid), which were taken for six months.

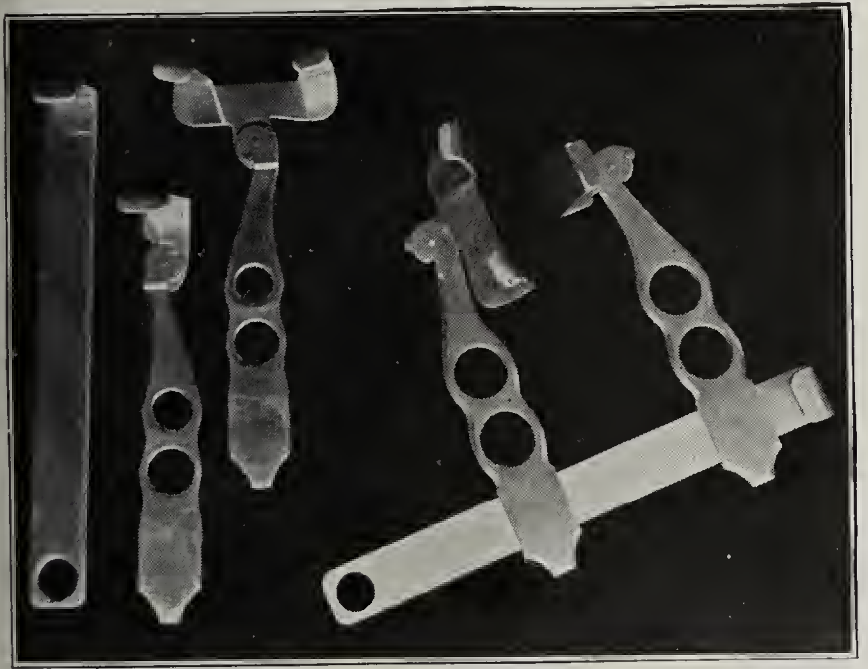
The lesions on his back proved to be well-marked serpiginous syphilids. Further examination revealed distinct ataxia, Argyll Robertson pupils, and an absence of both the patellar and Achilles tendon reflexes. The Wassermann reaction performed with the blood was four plus. An examination of the eyegrounds by Dr. Otto Wipper revealed that they were normal. These findings showed the case to be one of tertiary skin syphilis combined with a characteristic tabes.

7 West Madison Street.

CONVERTIBLE RETRACTOR

A. N. Bessesen, M.D., Minneapolis

The intent of this invention is to conserve space and to give a larger sphere of application, in that the individual parts of the instrument can be used singly and, in case of need, combined quickly to form a strong, self-retaining retractor. In this case the double blade tends to prevent rotation of the instrument in the wound. It doubles the number of retractors, at no increase in cost over the single, self-retaining retractor.



Convertible retractor: at left, each instrument in separate outline and as used individually; at right, instruments assembled and as used as a self-retaining retractor.

301 Donaldson Building.

A CASE OF URETHRAL CALCULUS OF FIFTY-THREE YEARS' DURATION *

Charles S. Hirsch, M.D., Philadelphia

So far as I have been able to find in the literature, the carrying of a urethral calculus for fifty-three years, which occurred in the case here reported, is without parallel: A carpenter, aged 65, swallowed a pin when 12 years old. A few days later, while riding horseback, he was seized with a sharp pain in the penis, attended with blood oozing from the meatus. Fearing to tell his parents of his condition, he continued to carry what he thought was the pin, and did not consult any physician about the ailment. Urination was only slightly interfered with, but the presence of a foreign substance in the urethra persisted, with comparatively little pain, to which he became accustomed. As the foreign body gradually grew larger and urination became more difficult, he overcame the obstacle by drawing on the side of the urethra, kneading it, as it were, thus allowing the urine to escape alongside it. He married at 25, was the father of six healthy children, and experienced little difficulty or pain on intercourse, the ejaculations apparently not being interfered with. The urinary difficulty went on, from dribbling until the obstruction finally was complete. When he was admitted to the Jewish Hospital, the bladder was distended to a point above the umbilicus. The penis, scrotum and perineum were markedly red and edematous. There was a well defined area of bulging and a fluctuating mass about the size of a hen's egg at the perineal-scrotal junction which was thought to be a suppurative cowperitis. This was accordingly drained, and the larger stone was found embedded in the abscessed cavity. This was removed, a metal catheter inserted to relieve the retention (markedly bloody urine), and the other stone found in the membranous and prostatic urethra. The larger stone weighs 410 grains (26.5 gm.), and the smaller, 130 grains (8.4 gm.).

Stones removed from urethra.

900 Pine Street.

Treatment of Hiccup by Pressure on Carotid Sheath.—Dr. Adam D'Alessandro of Philadelphia describes a method of treating hiccup in adults which he has employed with success in two cases. The left carotid sheath is grasped by the thumb and forefinger at the anterior border and midway between the origin and the insertion of the sternocleidomastoid muscle. The sheath is compressed tightly for about one minute, and in both cases in which the method was tried the hiccup ceased instantly. Recently a colleague tried the treatment in another case, and the hiccup ceased at once.

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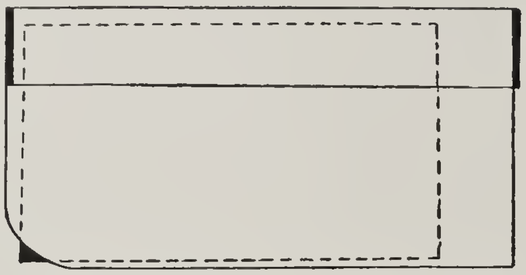
* Reported before the Philadelphia Urological Society of the American Urological Association, March 27, 1922.

A SCARIFIER FOR SKIN TESTS AND VACCINATIONS

Frank C. Dudley, M.D., Brooklyn

The physician who has tried to make many scratches for skin reactions on the back of a struggling child with a dull scalpel will appreciate this new device. It consists of an ordinary safety razor blade enclosed in a metal envelop so that only one corner of the blade is exposed.

The depth of the scratch is controlled by projection of the blade from its protecting envelop and can be adjusted to any desired depth. The razor blade is so sharp that no pain is felt when a scratch is made, and, besides, a child cannot see any knife to make him afraid.



Scarifier for skin tests and vaccinations, the razor blade projecting at the lower left-hand corner.

A physician with this instrument can make the scarifications for skin tests very rapidly because he does not have to worry about cutting too deep, even if the child should struggle violently.

The instrument is easily sterilized by boiling or with alcohol, and a new blade can be inserted easily when needed.

PAROXYSMAL TACHYCARDIA OF FOURTEEN AND A HALF DAYS' DURATION, WITH RECOVERY

Mitchell Bernstein, M.D., Philadelphia

History.—S. A., housewife, aged 30, native born, Jewish, complained of palpitation of the heart, and occasional precordial pain. Her mother, three brothers and one sister were living and well. She had been married ten years, and had one child, aged 9. She had measles and scarlet fever in childhood. Menstruation began at 14 years of age and had been regular. During the first menstrual period, in 1905, the patient was suddenly seized with an attack of palpitation of the heart which lasted for an hour, and ceased abruptly. Similar attacks occurred about every two years until 1920, when they occurred monthly; in 1921 the attacks became weekly, and during May, June and July almost daily.

The only warning of an approaching attack was an occasional dropped beat noticed by the patient just before the acceleration of the heart rate; the same phenomenon often followed the termination of the tachycardia. The attacks came on and ended suddenly, continuing usually from one hour to sixty-three hours, and, excepting the first one, had no relation to the menstrual period.

Present Illness.—July 21, 1921, at 2 p. m., while the patient was in bed in the Jefferson Hospital, and without any apparent warning, the heart rate increased from 100 to 228 a minute. After ninety-six hours, the patient insisted on being taken home, where the attack continued until 7:30 a. m., August 5. During this period of fourteen days, seventeen and one-half hours, the heart rate never fell below 180 a minute. The patient's face was dusky and at times ashen-white. Exophthalmos was marked; the veins of the neck were engorged; the respirations were shallow, and oppression was a frequent complaint. Precordial pain was intense, especially over the second and third left interspaces; hyperesthesia was marked over the left side of the neck and the precordium. After the sixth day a thrill was palpable over the entire precordium. Cardiac dulness at the height of the attack extended 2¼ inches (5.5 cm.) to the right and 4½ inches (11.5 cm.) to the left of the midsternal line. The liver extended 2 inches (5 cm.) below the right costal margin. The skin of the entire body was cold.

On the twelfth day of the attack, râles were noted at the bases of both lungs, both legs were slightly edematous, and there was severe pain along the right internal saphenous vein a little below the knee. The temperature rose to 101 F.; a marked glossitis occurred, and the urine contained a trace of albumin, a few pus cells, and a few granular casts.

Physical Examination Between Attacks.—Between attacks the patient was well nourished; the pupils reacted to light and accommodation; the mouth, lungs, abdomen and extremities were normal, as was the heart also, except that the sounds were weak. The systolic blood pressure was from 100 to 110, and the diastolic from 60 to 80.

The urine occasionally had a trace of albumin; the specific gravity varied from 1.005 to 1.025; from four to sixty leukocytes to a field were present, and there were occasional hyaline and granular casts.

Sugar tolerance, June 22, was: blood sugar 0.133 per cent. One hour after ingestion of 100 gm. of glucose, 0.22 per cent. The roentgen ray disclosed nothing abnormal in the heart, neck or chest. Vision in the right eye was 20/30; in the left eye, 20/50; the pupils were equal (4 mm.) and reacted to light and accommodation; the tension was normal, and the muscular movements were normal. Ophthalmoscopic examination detected nothing abnormal in either eye.

The basal metabolism was normal.

Treatment.—Many remedies were tried to combat these attacks: morphin, epinephrin, pituitary extract, chloral, bromids, tincture of digitalis, quinidin sulphate and pressure on the eyeballs and on the vagus nerve. On the thirteenth day of the attack, infusion of digitalis in 4 dram (15 c.c.) doses, was given every six hours for three doses, and then every four hours until nausea and vomiting occurred. A total of 32 drams (120 c.c.) had been given when suddenly the heart rate fell to 100 a minute, where it remained until August 8, the patient taking only one teaspoonful (4 c.c.) of the infusion of digitalis three times a day. August 12 and August 18, the heart rate was 66 a minute.

It is interesting to note, however, that on August 29, August 30, and September 1, although digitalis was still being given the patient, seven attacks occurred, lasting from one hour to two and one-half hours each. The most recent attack was in January, 1922, lasting about two days.

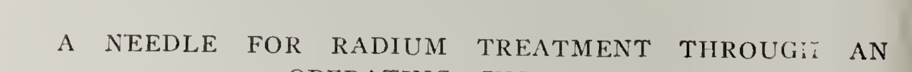
1337 Spruce Street.

A NEEDLE FOR RADIUM TREATMENT THROUGH AN OPERATING CYSTOSCOPE

Russell D. Herrold, M.D., Chicago

It is generally agreed that the value of radium treatment of carcinoma is greater when the radium can be placed directly into the tumor tissue than on surface application.

A new needle capsule has been devised which may be introduced through a cystoscope in certain cases in which a suprapubic operation is not advisable. It may be of value in postoperative treatment or prophylactic treatment of papillomas, a large percentage of which may become malignant later.



Needle for radium treatment through an operating cystoscope.

The needle, as illustrated, consists of two parts: a hollow cylindric silver capsule with solid conical point at one end and threads made on the inner surface of the other open end to hold the cap or second part, which consists of a spherical head screw, made to fit the cup of the Bransford Lewis cutting forceps. There is a hole through the cap for threading a braided silk cord. A smaller capsule is also being made for radium emanation.

A patient with carcinoma of the bladder is being treated with satisfactory results with the capsule needle by the direct needling of the tumor through the Brown-Buerger operating cystoscope. The cystoscope and forceps are then removed, leaving the capsule of radium for several hours, after which it is removed by means of the silk thread connecting to the outside through the urethra.

ACUTE PERIPROSTATITIS SIMULATING ACUTE APPENDICITIS

Lewis T. Mann, M.D., New York
Assistant Urologist, Mount Sinai Hospital Dispensary

C. F., aged 33, a salesman, came under my observation, Feb. 6, 1922, with gonorrheal urethritis of two months' duration. He had a slight discharge but no subjective symptoms of prostatitis. The glands in both inguinal regions were swollen. The urethral discharge was mucoid, and microscopic examination revealed pus cells and gonococci. The first urine was cloudy and contained shreds; the second urine was clear. The prostate was moderately enlarged, regular, firm and tender. The seminal vesicles were thickened, but not swollen or engorged. Expressed prostatic fluid contained about 75 pus cells to a high power field, but gonococci were not demonstrated. Four days later, following prostatic massage, the patient walked all day, and that evening was seized with sudden pain in the rectum and right groin, and a desire to defecate, which act caused excruciating pain. He felt chilly; his temperature was 103 F., pulse 90, and respirations 16. Abdominal examination was negative, but the right inguinal glands were more swollen and tender. Rectal examination disclosed the prostate and seminal vesicles unchanged. There was no epididymitis or deferentitis.

The next day, the patient complained of great thirst, nausea, fever, and pain in the lower abdomen, which was more severe on the right side. He had had three painful bowel movements during the night, and while there was no frequency of urination, it was somewhat painful.

The temperature ranged from 101 to 101.6 F.; pulse was 94; the tongue was dry and coated; the lower abdomen was rigid and tender, with most tenderness at McBurney's point, while the right inguinal glands were less tender than the left. There was deferentitis or epididymitis. Rectal examination revealed no masses, and no tenderness in the right iliac fossa, but the rectal wall on each side of the prostate was tender. A diagnosis of acute appendicitis was seriously considered.

There was little change the next morning, but that evening, now three days after onset, rectal examination revealed a tender infiltrated area of the rectal wall over the prostate and vesicles, which extended laterally and above, and fixed the rectal wall to the prostate.

On the fourth day, infiltration of the rectal wall was much more marked, and while the abdominal symptoms and signs had decreased, tenderness was marked on both sides above Poupart's ligament from the inguinal canal to the midline.

Two days later, the abdominal signs had disappeared, and the temperature was normal, but pain persisted in the rectum. Induration of the rectal wall was unchanged, and while the urethral discharge was less, the urine was still cloudy.

From this time there was a gradual uneventful recovery. The induration slowly receded, and after two weeks had practically disappeared.

COMMENT

The whole picture is somewhat different pathologically from the forms generally described, being rather a nonsuppurative periprostatitis. It is interesting to note that on the second day after onset the symptomatology was that of an acute appendicitis, with pain in the lower abdomen, fever of a moderate degree, coated tongue, nausea, abdominal rigidity and tenderness, especially at McBurney's point. The fact that the patient had a prostatitis and tenderness of the rectal wall about the prostate made it necessary to await further developments. If this patient had been seen for the first time on the day after the onset, when the foregoing symptoms and signs were present, there is no doubt that acute appendicitis would have been the diagnosis, and operation the treatment. Only when the rectal findings of infiltration and tenderness appeared on the fourth day was the diagnosis of periprostatitis evident.

No local treatment was instituted until after the process had started to recede spontaneously, and then hot rectal irrigations were given twice daily. Prostatic massage was not undertaken until all periprostatic involvement had entirely disappeared.

50 West Eighty-Fourth Street.

EXTENSION OF THIGH WITH PATIENT IN PRONE POSITION

Walter G. Stern, M.D., Cleveland

The usual method of extension of the thigh for correction of flexion deformities of this joint is extension by weight and pulley—usually in the line of the deformity—with the patient lying flat on the back. It is often advantageous to place the patient on a Bradford frame, and Bradford himself has added a Thomas splint for the purpose of suspending the limb for the comfort of the patient.

These methods give excellent results and are of universal practicability. It is only when one gets down to the last 15 or 20 degrees of flexion that any difficulty is experienced in overcoming the usual flexion deformities. The ideal position desired is complete extension. For this purpose it has been customary to place the buttocks of the children on elevated frames, and even to make traction in a backward direction. This, however, has rarely given me satisfactory results.

A small patient recently solved the problem for us when, after the hip had been reduced from a flexion contracture of more than 100 degrees to a flexion contracture of about 20 degrees, the child took it into his head to assume the prone position. Nothing that the nurse could do was successful in keeping the child on his back long, and only when we realized that by assuming the prone position he was aiding us in securing full extension was the effort to have the child lie on his back given up. A few days of this prone position succeeded in entirely reducing the deformity, after which a plaster spica was applied from the toes to the axilla, and the child was allowed on his feet with crutches.

I have never seen this procedure either in print or practice anywhere, but make no claim for originality. The results of this method of extension were so remarkable and so quickly obtained that I can recommend it in similar cases of hip joint disease.

821 Schofield Building.

AN ORIGINAL METHOD FOR LANTERN SLIDE PROJECTION OF ROENTGEN-RAY FILMS OF THE MASTOID

Norval H. Pierce, M.D., Chicago

The present method of making photographic plates from roentgen-ray films for lantern slide projection is unsatisfactory because these plates are likely to show a loss of detail and give an inversion of colors. To overcome the latter objection, a second plate is made from the first. This may show a still further loss of detail, although the projection on the screen corresponds to the original roentgen-ray film with reference to black and white. This method is expensive, and requires time for preparation.

To overcome all this, one may simply place a lantern slide cover plate over the desired portion of the film and cut it out. This portion of the film is then placed between two cover plates, and the edges are fastened with passepartout. The slide is now ready for projection, and will appear on the screen as it does on the film as regards black and white, without loss of detail.

For roentgenograms taken on sensitized glass plates, a diamond glass cutter may be used to cut out the desired portion. A cover glass is then placed over the photographic surface and the two bound together as before.

This is also a convenient and practical method of preserving the pictures of the mastoid. Both right and left mastoids may be placed on one plate.

22 East Washington Street.

Care of Expectant Mother in Industry.—In large industrial centers facilities for the care of the expectant mother are given by the antenatal clinics of the maternity hospitals, also care during confinement, and postnatal advice. The children can be kept under observation at the infant clinics and welfare centers. In this way much of the chronic ill health due to pregnancy is diminished and the infant mortality reduced both before and after birth.—A. L. McIlroy, *Nation's Health* **4**:134 (March) 1922.

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SATURDAY, MAY 20, 1922

WHERE IS UREA FORMED?

Almost all of the nitrogenous part of the proteins ingested by man or liberated through tissue disintegration appears in the excreta as urea. As there is no storage of protein in the body under ordinary circumstances, an effective device for converting the nitrogenous waste into a form suitable for prompt and easy elimination in the urine must be available to the organism. The problem of the mode and seat of urea production has long, and properly, engaged the attention of physiologists. If the reactions involved are complicated and if a highly specialized glandular equipment is essential, it is obvious that even slight derangements of the mechanisms and cellular chemistry concerned might lead to untoward consequences to the body; for there is no cessation of the task involved. Day and night the unusable nitrogenous fragments are obtruding themselves into the metabolic household to be disposed of, so that the possible harm from a failure to rid the tissues of such intolerable waste is ever threatening.

Not so many years ago it was suspected that the kidneys were the place where, in some mysterious way, urea is formed. The assumption was shown to be untenable so far as it implied that the renal tissue is the sole or even the chief seat of urea production; for, when the kidneys are ligated or extirpated, this waste product heaps up in the blood. Thanks to ready methods of chemical blood analysis, the phenomenon is today familiar in the case of persons who have had anuria following or accompanying nephritis. The accumulation increases with the duration of the lack of adequate kidney excretory function.

Presently the speculation of physiologists turned to the liver in search of an explanation of urea production. It would take us too far afield to retrace the steps in this story. In the end it has become improbable that the liver is the sole organ endowed with urea-forming capacities, although it has in recent years been looked on as having a special function in the origin of urea. The once prevalent idea that the digestion products of the proteins, that is, the amino-acids, lose their nitrogen during the process of absorption has been abandoned. The more current hypothesis has been that the surplus of amino-acids stored in the liver, in consequence of the excessive absorption, is speedily deaminized and the nitrogen removed in the form of urea, and, later, the amino-acids stored in the muscles and other tissues are likewise transferred to the liver and there subjected to the same process.[1]

Folin and Berglund [2] of the Harvard Medical School have lately questioned the validity of the assumption that urea formation is relegated largely to the liver. They point out that, since there is general agreement that the greater part of the food protein is absorbed as simple amino-acids, and that the amino-acids, so far as they pass the liver, are absorbed by all the other tissues, the whole problem has really narrowed down to the one question of whether the absorbed nitrogen does or does not pass out of the liver in the form of urea. The analytic data now available show quite clearly, however, that the increment of amino-acid nitrogen precedes that of urea in the blood after meals rich in the precursors; hence there is no occasion to conclude that the liver has developed special powers of denitrogenation in contrast with those of the muscles or other tissues. At any rate, the muscles have abundant opportunity to share in urea formation. If the long dominant belief in the special function of the liver is to be abandoned, the assumption of liver "strain" or hepatic "overwork" in the metabolism of even large quantities of protein becomes somewhat untenable. Inability to form urea to the fullest extent of the body's requirement for the disposal of nitrogenous waste must be one of the rarest of conditions; and the presumably large capacity of various tissues for the production of the catabolite must be reckoned as one of the striking instances of the organism's many factors of safety.

THE NUTRITIONAL VARIABILITY OF MILK

Although most of the organic constituents of milk are peculiar to it and are evidently manufactured by the mammary gland, some of the components of the secretion seem to be derived directly from the blood of the lactating individual. On account of the preeminence of the synthetic functions of the mammary gland, it has proved difficult as a rule to secure alterations in the character of the milk by experimental means. The secretory cells evidently tend to produce a product "true to type." It may vary in quantity in any given unit of time, but the quality of the fluid, in the sense of its fundamental composition, is rarely altered to any significant extent. Nevertheless, foreign substances, such as drugs, sometimes find their way into the milk from the blood, into which they may have been introduced by absorption or otherwise. Recently Denis,

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[1] Van Slyke, D. D.: The Harvey Lectures **11**: 146, 1915-1916.

[2] Folin, O., and Berglund, H.: The Retention and Distribution of Amino-Acids, with Especial Reference to the Urea Formation, J. Biol. Chem. **51**: 395 (April) 1922.

Sisson and Aldrich[1] have observed that marked changes in the concentration of the inorganic and certain organic nonprotein constituents of the blood may result in a correspondingly greater transfer of these to the milk. Thus, when either the proportions of urea or chlorids, for example, are increased in the blood they reappear in higher concentration than usual in the milk.

The principle is not invariably applicable to those milk constituents not directly synthesized by the mammary gland, for Denis and her co-workers have found that calcium cannot be so readily increased as can the constituents just referred to. It is highly important, however, to appreciate that the vitamins which milk invariably contains and which admittedly are an important element in nutrition vary in their concentration in the fluid in relation to the diet of the lactating organism. For the antiscorbutic potency of cow's milk, this has been recognized some time. The season variation in this respect was pointed out in 1919 by Barnes and Hume[2] in England and by Dutcher, Pierson and Biester[3] in this country. Subsequent studies have demonstrated clearly that the vitamin C content, i. e., the antiscorbutic quality of milk, can be influenced materially by the food of the cow.[4]

The suggestion that a definite relationship may exist between the amounts of all the vitamins secreted in milk and those ingested with the diet has received further substantiation from recently published studies at the University of Minnesota.[5] They show that the presence of vitamins A and B in cow's milk is entirely dependent on their occurrence in the ration. Stall-fed cows will produce a milk rich in vitamins, provided their ration consists of a proper combination of grains and leafy food. A vitamin-rich milk is not necessarily correlated with access to pasturage; in other words, the problem of securing the richer product is one of appropriate food, whatever may be its immediate source.

If these investigations may be accepted as demonstrating the importance of feeding cows a ration adequate as to its vitamin content, there is no apparent reason why the same conclusion should not be applied to lactating mothers. This does not mean, however, that the latter must proceed to the druggist's shop for some special product to insure a "safe" milk for their offspring. On the contrary, the information serves as a reminder that a well selected dietary will meet the demand of lactation and help to provide the ideal food for the babies. In the words of a recent writer, "In order to make full use of the present knowledge of food chemistry, the facts which have been learned regarding vitamins and other factors of food value should be viewed from the standpoint of the wise utilization of food resources as a means of promoting the best nutrition of the people as a whole."[6] With respect to the commercial supply of cow's milk, this summary of the situation deserves to be widely disseminated:

> Since the food of dairy cattle at all times of the year ordinarily contains an abundance of green leaves either fresh or preserved as silage, or dried as hay, there is thus insured to the cow a liberal supply of both the A and B vitamins for transmission through her milk, and in the case of the A vitamin the dairy cow also carries a considerable store in her body so that the A vitamin content of cow's milk is probably in most cases fairly well maintained even though the food of the cow should for a time be deficient in this respect. It is of course possible to obtain, from cows fed for a long time upon feeds very poor in vitamin A, milk showing subnormal amounts of this vitamin; but such conditions are not frequent in good modern dairy farming, and cows so badly fed do not yield enough milk to constitute a large factor in the milk supply. There is probably a much larger seasonal variation in the amount of C vitamin contained in cow's milk than in either its A or B vitamin content. This being now recognized, it is only necessary to use a small amount of orange juice or other antiscorbutic fruit or vegetable product in order with a liberal supply of milk in any of its various forms to insure an ample intake of all three of the vitamins at all seasons.[7]

UNDERWEIGHT AND OVERNUTRITION

In discussions as to the cause of obesity, it is customary to refer to hereditary peculiarities to account for the undue increments of body weight. Thus, von Fürth[8] has remarked that common experiences indicate how many persons who are "disposed" toward corpulence accumulate fat even though they do not ingest any more food apparently than do other individuals; in such cases one might suspect that there exists a lowering of the exchange of materials. Certain instances of adiposity are today clearly recognized as being associated with endocrine disturbance. In this respect they fall into the domain of the pathology of nutrition. For the most part, however, there is no reason to suspect any profoundly altered metabolism in the direction of diminished combustion, or even a "lowered energy cost of digestion." The accumulation of fat, even in supposedly moderate eaters, may usually be explained by the summation and storage of very small amounts of food beyond the maintenance requirement. In other words, it represents the favorable balance of intake over expenditure of matter.

There is a not inconsiderable group of persons who seem to fail to respond by increment of weight to a good intake of food. Of these, no account will be found in the textbooks; yet the instances of persons with good appetites and apparent inability to gain in weight, despite a presumably favorable surplus of food above the estimated needs for the day's work, are commonly encountered. Every physician is familiar with persons in admittedly good health for whom no type of diet succeeds in increasing size. They represent the "spare" or nonfattening group of persons who, despite only moderate activity and copious diet of predominantly carbohydrate nature, remain at a figure well below the average for their stature. They are not suffering from recognized glandular disturbance, such as hyperthyroidism; for the basal metabolism, i. e., the energy exchange at rest and without food, may be quite within normal ranges.

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[1] Denis, W.; Sisson, W. R., and Aldrich, M.: A Study of the Effect Produced on the Composition of Milk by the Administration of Certain Inorganic and Organic Substances, J. Biol. Chem. **50**: 315 (Feb.) 1922.

[2] Barnes, R. E., and Hume, E. M.: Biochem. J. **13**: 306, 1919.

[3] Dutcher, R. A.; Pierson, E. M., and Biester, A.: Science **50**: 184, 1919.

[4] Hart, E. B.; Steenbock, H., and Ellis, N. R.: J. Biol. Chem. **42**: 383 (July) 1920. Hess, A. F.; Unger, L. J., and Supplee, G. C.: Ibid. **45**: 229 (Dec.) 1920. Dutcher, R. A.; Eckles, C. H.; Dahle, C. D.; Mead, S. W., and Schaefer, O. G.: Ibid. **45**: 119 (Dec.) 1920.

[5] Kennedy, C., and Dutcher, R. A.: Vitamine Studies, IX, The Influence of the Diet of the Cow upon the Quantity of Vitamines A and B in the Milk, J. Biol. Chem. **50**: 339 (Feb.) 1922.

[6] Sherman, H. C., and Smith, S. L.: The Vitamins, 1922, p. 214.

[7] Sherman, H. C., and Smith, S. L.: The Vitamins, 1922, p. 228.

[8] Von Fürth, O.: The Problems of Physiological and Pathological Chemistry of Metabolism, Translation by A. J. Smith, Philadelphia, J. B. Lippincott Company, p. 394.

Gulick[9] has made an unusually extensive study of a typical case. Through overnutrition it was possible to secure some gain in weight. Nevertheless, over long periods of feeding beyond the predictable needs of the individual concerned there were no increments in body weight to account for the surplus of food ingested above what the bodily activities and maintenance metabolism would normally demand to secure equilibrium. Furthermore, actual investigation revealed that the basal metabolism was not appreciably altered. Gulick cannot avoid the conclusion, therefore, that in such persons the metabolism as a whole is extravagant. We may think of them as burning up food freely in order to get rid of it. In other words, some persons may owe their resistance against fattening to an extravagant calory requirement which persists at all times without involving any augmentation of the basal metabolic rate. The idea is not new, but it deserves more serious consideration than has heretofore been accorded to it. Perhaps the protection against overfattening is an inborn factor, and consequently attempts to frustrate it are commonly unavailing.

Current Comment

ANOTHER MARTYR TO THE STUDY OF TYPHUS—A. W. BACOT

When The Journal pointed out in a recent issue[10] that the study of typhus fever not only requires expert knowledge and investigative skill of a high order, but also calls for real heroism, it could not have anticipated that within a few days another name was to be added to the list of the martyrs whom it extolled. On April 12 occurred the death of Arthur William Bacot, F.E.S., entomologist to the Lister Institute of Preventive Medicine in London, a victim of typhus fever which he contracted while engaged in an investigation of the disease at Cairo, Egypt. For several years Bacot has been an outstanding figure in the study of the bionomics of insects and their rôle in the transmission of disease. Since early in the World War he concentrated his energies upon the problems raised by the louse, into the life-history and habits of which species he entered with great skill and success. Plague and yellow fever each received Bacot's attention several years earlier; and in 1920 he joined the Typhus Research Commission of the League of Red Cross Societies to Poland in the labors recently reviewed in these columns.[11] In the course of this work he contracted trench fever at Warsaw and has communicated an excellent, detailed account of that illness, furnishing one of the few reports of unusual disease described by a competent observer who was himself the victim. All who knew him can bear personal witness to the fearlessness and skill with which Bacot undertook his experiments with dangerous insects during the dark days of the war at a time when the menace of these species was suspected; but our ignorance of the immediate agencies concerned in the spread of threatening diseases made all manipulation of experimental test materials extremely hazardous. Entomology, which had at one time afforded a delightful pastime to this English gentleman, later became a "ruling passion" with him. As an enthusiastic amateur he enriched science through conspicuous contributions; and as a professional entomologist applying his knowledge to the use of preventive medicine, Bacot became an almost indispensable worker in the protection of mankind. Accordingly, lest we forget, let us reiterate the names of those who, as a consequence of their researches, contracted typhus and died: Bacot, Conneff, Cornet, Jochmann, Lüthje, von Prowazek, Ricketts, Schüssler.[12]

MASSACHUSETTS AND THE SHEPPARD-TOWNER ACT

As is well known, the Sheppard-Towner Act requires that states which wish to cooperate in promoting maternal and infant welfare under its provisions, after the first year, appropriate a certain sum from their own treasuries in order to secure a proportionate share of the federal appropriation provided by Congress. Before passing a measure providing for cooperation in this work, the Massachusetts State Legislature requested the opinion of the state's attorney-general as to the constitutionality of the Sheppard-Towner Law. The attorney-general in reply expressed the opinion that the law in question is unconstitutional. He said, in part:

> This, in my judgment, is . . . an attempted exercise of power over the subject of maternity and infancy, and thus an incursion into the field of the local police power, reserved to the states by the tenth amendment. The objections to the act go further in that the proposed appropriations are not general in their application, but are confined to those states which accept the act and appropriate their own funds to be used for its purposes. . . . For this reason, the appropriations, if made, would not be for "the general welfare of the United States," even if those words are given the broadest signification. Indeed, it is yet to be determined that Congress has the power to appropriate to the states, according to any method of apportionment, revenues raised from the people of the United States for national purposes.

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[9] Gulick, A.: A Study of Weight Regulation in the Adult Human Body During Overnutrition, Am. J. Physiol. **60**: 371 (April) 1922.

[10] Typhus Fever: A Study of Disease and Its Martyrs, editorial, J. A. M. A. **78**: 1054 (April 8) 1922.

[11] Consult Footnote 10. Wolbach, S. B. et al.: The Etiology and Pathology of Typhus, Harvard University Press, Cambridge, Mass., 1922.

[12] Obituary notices of Bacot will be found in the Lancet, April 22, 1922, p. 817; Brit. M. J., April 22, 1922, p. 662; London Letter, this issue, p. 1550.

It has been estimated, the attorney-general continues, that 5.66 per cent. of the internal revenue taxes are paid by the citizens of Massachusetts, and that less than half that amount would be returned to them under this act if they accept it; but if Massachusetts does not accept the act, its citizens will still be taxed in order to carry into effect in other states an unconstitutional law. He suggested that the commonwealth of Massachusetts test the validity of the law by initiating equity proceedings in the Supreme Court of the United States, and it is said that this will probably be done. The Sheppard-Towner Law encountered strong opposition before enactment, and has received much criticism since. Although the work it aims to promote appeals to public sympathy, the work is a function of the individual states. It is hoped that Massachusetts will carry its case through.

FOOT AND MOUTH DISEASE IN GREAT BRITAIN

Foot and mouth disease has existed so long on the continent of Europe that any attempt at general eradication seems to have been abandoned by most continental countries, the best that can be hoped for being a restriction to certain localities and a limitation of spread. Great Britain, on the other hand, has been kept quite free from this destructive stock malady, although unremitting effort has been needed to combat the occasional foci originating from chance introduction. The general disorganization of quarantine and preventive measures incident to the Great War in most parts of the world has been followed by more frequent outbreaks in Great Britain during the last few years. Until recently, however, some measure of control has apparently been practicable. In the early part of this year, however, serious extension of the foot and mouth disease occurred in England and in Scotland, a recent report placing the total number of infected herds at 643. The outbreak is said to be the most serious one known in thirty years, and has already caused great financial loss to the live stock industry. Extra vigilance is being used to prevent the introduction of the disease into the United States. Permits for importation of ruminants and swine from any part of Great Britain or from the continent of Europe are being refused in both the United States and Canada.

DISTRIBUTION OF PHYSICIANS IN FRANCE

Irregularity in the distribution of physicians is not a condition peculiar to the United States. As shown in the Paris letter last week, similar conditions exist in France. Mountainous districts or those having poor roads have very few physicians, while large centers of population, and particularly the popular watering and health resorts, are overcrowded with physicians. Large cities and naval ports, the populations of which are mainly industrial, have fewer physicians than other cities of equal size. As to the total supply of physicians, France has a smaller number in proportion to population than the United States. Paris has only one physician to every 700 inhabitants, whereas twelve cities in the United States having more than 500,000 population have one physician to every 530 persons. Marseilles and Lyons, each of which has more than 450,000 inhabitants, have one physician to approximately 850 persons, whereas twenty-one cities in the United States having between 200,000 and 500,000 inhabitants have one physician to approximately every 500 persons. In mountainous districts, the scarcity of physicians is even more pronounced than in the United States, in some of these districts the number of physicians being as few as one to every 4,000 inhabitants. The irregularity of distribution in France, therefore, is due to the same causes as in the United States, that is, economic conditions and the desire to have access to better social and educational advantages.

Association News

ST. LOUIS ANNUAL SESSION

Broadcasting the Opening General Meeting

The opening general meeting of the St. Louis Annual Session will take place on the evening of Tuesday, May 23, beginning at 8:30 o'clock. For one-half hour preceding this time, during the assembling of the Fellows and guests, an orchestral musical program will be given. This will be the meeting at which the President-Elect is inducted into office and when he will deliver his Presidential address. Arrangements have been made for broadcasting the program. Those who may wish to "listen in" will set their apparatus to receive the wave length 360 meters. The code will be "W E B."

A Meeting of Cardiologists

There will be a meeting of those especially interested in the study of Heart Affections on Tuesday, May 23, 1922, at 3 p. m., in the lecture room in the department of chemistry of the Washington University Medical School, at Euclid and Scott Avenues. This meeting will be under the auspices of the Philadelphia Society for the Prevention and Relief of Heart Diseases, which has delegated Dr. S. Calvin Smith as its representative. The purpose of this meeting is to organize an association wherein rules may be evolved to establish electrocardiography on a firm clinical basis, rather than on technical grounds.

All those interested in the study of heart diseases will be welcome to this meeting.

Conference on Health Problems in Education

The second annual conference of the committees of the several state medical associations on "Health Problems in Education" will be held at 2:00 p. m., Tuesday, May 23, in the south dining room, lobby floor, Claridge Hotel, Locust at Eighteenth Street, St. Louis. Dr. J. M. Dodson, chairman of the Committee on Health Problems in Education of the Council on Health and Public Instruction, will preside. This conference will be open to all who are interested.

Reunion of Fort Riley Medical Officers

Arrangements are being made for a reunion of those medical officers who served at Fort Riley during the World War. Detailed announcement will appear in the American Medical Association *Daily Bulletin.*

The Alpha Omega Alpha Luncheon

The Alpha Omega Alpha fraternity will hold their reunion luncheon, Thursday, May 25, at 12:30 p. m., at the St. Louis Club, 3663 Lindell Boulevard, St. Louis. A cover charge of $2 has been fixed. Dr. E. H. Terril, Barnes Hospital, St. Louis, is in charge of arrangements.

Medical Veterans of the World War

The annual meeting of the Medical Veterans of the World War will be held in St. Louis. Detailed announcement will appear in the American Medical Association *Daily Bulletin.*

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Alabama Pediatric Association.—The organization meeting of the Alabama Pediatric Association was held, April 17, in Birmingham. C. B. Bray, D.D.S., Birmingham, was elected president, and Dr. Jerome Meyer, Birmingham, secretary-treasurer.

Drive for Gorgas Memorial.—At the annual meeting of the Medical Association of the State of Alabama, resolutions were adopted urging all members of the association to endeavor to obtain $200 each as a contribution toward the Gorgas Memorial at Panama and Tuscaloosa. The maximum return possible from the resolution is $500,000, to be raised by the 2,500 members of the medical profession of Alabama.

ARKANSAS

Hospital News.—A new hospital will be erected at St. Edward's Infirmary, Fort Smith, at a cost of $200,000. Plans have been completed and construction work will be started at once.

CALIFORNIA

New Health Center.—A new $30,000 health center is to be built in Alameda under the auspices of the board of public utilities. It will be completed in September. Funds for this purpose will be taken from the surplus of the municipal electric light system.

Chiropractor Fined.—It is reported R. E. Ross, a chiropractor, was fined $300 for practicing in the state without a license. He first determined to go to jail, where he remained thirty-nine days, reducing the fine $2 a day. He was finally released on paying the remaining sum.

New Medical Club.—At a meeting of the Santa Clara County Medical Society, in San Jose, May 2, the Medical Club was organized, consisting of all the physicians of the county. Dr. Henry C. Brown, health officer of San Jose, was elected president of the club, and Dr. Robert S. Kneeshaw, secretary.

World War Veterans Meet.—A meeting of the medical officers of the World War, who are residents in and about San Francisco, was held, May 5, in the American Red Cross rooms, for the purpose of organizing in San Francisco a sector of the Association of the Army of the United States. Col. William B. Banister, San Francisco, was elected chairman and Dr. Ewald H. Angermann, San Francisco, treasurer.

DISTRICT OF COLUMBIA

Law Against Illicit Drug Traffic.—The Miller antinarcotic bill was passed by the Senate, May 12. There was no roll call, the measure being adopted by acclamation, when Senator Curtis of Kansas, who is in charge of the measure, explained its purpose.

GEORGIA

Secretaries Form an Association.—The first meeting of the association of secretaries of the Medical Association of Georgia was held May 2, at Columbus. Dr. Thomas H. Smith, Valdosta, was elected president of the new organization, and Dr. Homer L. Barker, Carrollton, secretary. Dr. E. C. Thrash, president of the state society, gave an address.

ILLINOIS

Physician Elected Mayor.—Dr. Omar F. Barnes was recently elected mayor of Arcola.

Personal.—Dr. Roswell T. Pettit, Ottawa, while in Paris, France, was struck by a taxicab. He was confined to the hospital with injuries for ten days.

Physician Sentenced.—It is reported that Dr. James D. Banta, Rock Island, was sentenced by Judge Fitzhenry, May 9, to two years in the Leavenworth penitentiary, following conviction for violation of the Harrison Narcotic Law.

Holiday for Physicians.—At a meeting of the Peoria Medical Society, held recently, it was decided that the offices of Peoria physicians should close on Thursday afternoons during May, June, July, August and September. Emergency calls will be answered from Main 214, the Physicians' Exchange.

Health Program at Benton.—A plan for carrying out a public health program was recently successfully undertaken at Benton, when six physicians from the field staff of the state department of public health simultaneously delivered five minute talks before audiences at motion picture theaters, dance halls, American Legion post quarters and other popular meeting places. The physicians in each case were introduced by well known citizens. As a result of these talks, the attendance on a public health demonstration was greatly increased, and the plans for establishing a permanent nursing service were materially furthered.

Chicago

Personal.—Dr. Charles Adams was given a dinner at the Drake Hotel, May 10, on the occasion of his return from the Orient. It is announced that Dr. and Mrs. Adams will hereafter reside permanently in Honolulu.——Dr. Orville Winthrop McMichael, professor of medicine in the Polyclinic Hospital, has been elected commander of the Illinois Naval and Military Order of Spanish-American War Veterans.——Dr. Francis Gerty has been appointed superintendent of the Cook County Psychopathic Hospital, Chicago, to succeed Dr. Clarence A. Neymann, who has resigned to resume private practice. Dr. Gerty has been a member of the consulting staff of the hospital for several years.

INDIANA

New County Hospital.—The contract has been let for the erection of the new county hospital at Greencastle. The county commissioners appropriated $95,000 for the building in 1921, and $2,500 per year toward its maintenance. It is expected that the institution will be ready for occupancy in November.

IOWA

Personal.—Dr. Frank T. Launder, Garwin, has been reappointed for another five-year term on the state board of health.——Dr. D. G. Lass has resigned as health officer of Ocheyedan.——Dr. Walter R. Cook, Pisgah, was recently elected president of the Harrison County Medical Association, and Dr. Carl A. Heise, Missouri Valley, was elected secretary-treasurer.——The Grundy County Medical Society gave a reception and banquet to Dr. Eugene A. Crouse, March 15, to celebrate his fiftieth year of continuous practice in that county. Following the reception, Dr. Crouse was presented with a silver loving cup.

Iowa State Medical Society.—At the seventy-first annual meeting of the Iowa State Medical Society, held at Des Moines, May 10-12, under the presidency of Dr. Alanson M. Pond, Dubuque, the following officers were elected for the year 1922-1923: president, Dr. Charles J. Saunders, Fort Dodge; president-elect, Dr. Oliver J. Fay, Des Moines; vice presidents, Drs. George Kessel, Cresco, and Ora F. Parish, Grinnell. Dr. Tom B. Throckmorton and Dr. Thomas F. Duhigg were reelected secretary and treasurer, respectively, for a period of three years. The 1923 convention of the society will be held in Ottumwa, May 9-11. An appropriation of $7,500 was made for the work of the Field Activity Committee.

KANSAS

Hospital News.—The contract has been let for the erection of the Bell Hospital, at a cost of $300,000. This hospital will be operated by the University of Kansas Medical School, Lawrence and Rosedale, and will be located in Kansas City.——Mr. M. C. Waters has offered a tract of 5 acres of land for a site for a hospital to be erected by the Sisters at Liberal. The building will cost approximately $75,000.

State Medical Meeting.—At the fifty-sixth annual meeting of the Kansas Medical Society, in Topeka, May 3-4, under the presidency of Dr. Chauncey S. Kenny, Norton, the following officers were elected: president, Dr. Middleton L. Perry, Topeka; vice presidents, Drs. John R. Scott, Ottawa, Leon Matassarin, Wichita, and Elmer E. Morrison, Great Bend, and secretary, Dr. John F. Hassig, Kansas City. Dr. George M. Gray, Kansas City, who was appointed to fill out the unexpired term of office of treasurer, held by the late Dr. Lewis H. Munn, Topeka, was elected treasurer. The next convention of the society will be held at Kansas City, in 1923.

MARYLAND

Personal.—Dr. Ralph Gregory Beachley, formerly of the U. S. Public Health Service, has been appointed assistant to the director of the Health Demonstration Unit being conducted in Washington County by the Johns Hopkins School of Hygiene and the Rockefeller Foundation.

Hospital News.—Plans are being developed for the opening of a new hospital for convalescent children in July. A site to be known as "Happy Hills," near Mount Washington, has been donated, and a private campaign to secure funds for the project is being inaugurated. Dr. William H. Welch has been made president of the hospital.——A ten-day campaign is being conducted in Montgomery County in an effort to raise $30,000, for the benefit of the Montgomery County General Hospital, Sandy Springs. The money will be applied to a mortgage on the property and will provide much needed additional equipment.

MASSACHUSETTS

Registration Suspended.—It is reported that at a meeting of the Massachusetts Board of Registration in Medicine, the registration of Dr. Arthur A. Lawrence, Boston, was suspended for one year, terminating April 18, 1923.

Personal.—Dr. John E. Walsh has resigned as chairman of the board of health of Revere.——Dr. Timothy F. Brassil, Cambridge, received a fracture of the skull when the automobile in which he was riding collided with another machine, recently.

Honor for Scientist.—Prof. William Duane, Ph.D., Medical School of Harvard University, Boston, was recently awarded the John Scott Medal and Certificate, with premium of $800, by the City Trusts of Philadelphia for his researches in radioactivity and roentgen rays. This award is made annually for scientific achievement, in accordance with the terms of the bequest by John Scott more than half a century ago. Madame Curie was the recipient of the award in 1921.

Medical Advisory Board.—The first meeting of the Medical Advisory Board was recently held in Boston, and organized with Dr. Francis X. Mahoney as chairman. This board was appointed to advise and cooperate with the health commissioner, on request, and in cases of emergency, in preventive medicine. Dr. Mahoney requested that the medical board convey to their respective societies the desire that all physicians cooperate with the health department in the prevention of disease. Promotion of the Schick test in the city of Boston was unanimously favored, and it was decided that clinics for demonstration of this test and of the treatment for diphtheria will be conducted under the auspices of the health department.

MICHIGAN

Personal.—Dr. Robert B. Harkness, Houghton, has been appointed a member of the state advisory council of health, to succeed Dr. J. G. Turner.

MINNESOTA

Mayoral Appointments.—Dr. Frederick A. Swartwood was elected mayor of Waseca for the third term in April.——Dr. Julius R. Sturre was elected mayor of Watkins, recently.

Personal.—Dr. Mabel S. Ulrich has been appointed full-time executive secretary of the Hennepin County Public Health Association.——Dr. Wallace H. Cole, St. Paul, will be chief surgeon of the new Shriner's Twin Cities Hospital for Crippled Children, to be erected in that city at a cost of $234,000. The building will be completed within six months.

MISSOURI

Physicians to Be Reimbursed.—It is announced by the Kansas City health commissioner that physicians are to be paid $1 for each report on tuberculosis filled out and sent to the state board of health. This law was enacted three years ago, but has never before been observed. The increase in tuberculosis has resulted in the issuing of four-page forms to physicians, with the request that they fill them out for each tuberculosis case.

State Medical Meeting.—At the annual meeting of the Missouri State Medical Association, in Jefferson City, May 2-4, the following officers were elected for the ensuing year: president, Dr. Arthur R. McComas, Sturgeon; vice presidents, Drs. Herbert C. Powers, Joplin, Frank I. Ridge, Kansas City, Wenzel C. Gaylor, St. Louis, Encinas C. Callison, Kirksville, and Louis M. Edens, Cabool; secretary, Dr. Edward J. Goodwin, St. Louis, and treasurer, Dr. J. Franklin Welch, Galesburg, both reelected. The next annual session will be held in Joplin, May, 1923.

NEBRASKA

Hospital Items.—An addition will be erected at St. Mary's Hospital, Columbus, at a cost of $200,000.——Bids have been received for the $115,000 tuberculosis hospital to be erected at Kearney.——Construction has been started on the new building for the St. Catherine of Sienna Hospital, McCook, which will have a capacity of thirty beds.

State Medical Meeting.—At the fifty-fourth annual session of the Nebraska State Medical Association, held at Omaha, April 24-27, under the presidency of Dr. Byron B. Davis, Omaha, the following officers were elected for the ensuing year: Dr. Benjamin F. Bailey, Lincoln, president; Drs. Roy W. Fouts, Falls City, and Arthur E. Cook, Randolph, vice presidents. Dr. Willson O. Bridges, Omaha, was reelected as a member of the committee on the official publication of the association, *The Nebraska State Medical Journal.* Lincoln was selected as the meeting place for the 1923 session.

NEW JERSEY

Personal.—Dr. John C. Cox, health officer of Maplewood, has been appointed registrar of vital statistics for three years.——Dr. Norman H. Probasco, Plainfield, has resigned from the Muhlenberg Hospital after twenty-two years' service.——Dr. Eugene H. Goldberg, Kearney, has resigned as chief surgeon of the Soldiers' Home. Dr. Goldberg has been connected with the home for more than twenty years.

Hospital News.—The Bergen County Hospital for the tuberculous was opened for public inspection, April 1. The institution was erected at a cost of $400,000.——A reconstruction hospital will be erected at Morristown for the care of disabled ex-service men by the government.——A $100,000 addition to the Atlantic City Hospital will be erected for which plans are being prepared.——The contract has been awarded for the new building, to be erected at a cost of $513,000, of the Elizabeth General Hospital, Elizabeth.

NEW MEXICO

Physician Appointed to Health Work.—Dr. George P. Paul of the International Health Board has been appointed chief of the division of county health work on the staff of the state bureau of public health, with headquarters at Santa Fe. Dr. Paul has been with the International Health Board for nineteen years, a great part of the time in foreign service. He took up his work in Santa Fe, May 15.

NEW YORK

Westchester County Physicians Celebrate.—The Medical Society of the County of Westchester, which was organized in 1797, celebrated its one hundred and twenty-fifth anniversary on the evening of May 11 by a dinner in New York. A book recording the history of the society was presented to the guests.

University News.—Ground will be broken, about June 1, for the research laboratory building to be erected for the new medical school of the University of Rochester at Oak Hill.——The annual meeting of the New York Association of the University of Rochester Alumni was held, April 21. ——Prof. Clarence King Moore will represent the university at the celebration of the seventh centenary of the foundation of the University of Padua.

Society to Prevent Accidents.—A national organization has been formed in New York, backed by some of the leading citizens of this and other cities, which will aim to educate the people to the dangers to life and limb because of carelessness, absentmindedness, selfishness, ignorance, wilful neglect and the breaking of laws. Dr. Franklin Lawson, New York, is the president and administrative director, and Dr. Clayton Powers Bennett is vice president. Among those on the advisory board are: Drs. Joseph M. Bennett, Providence; Colis S. Carter, New York; D. H. M. Gillespie, accident surgeon of the New York Central Railroad, and Russell McCausland, Boston. The society will study the mental and physical causes of all kinds of accidents and the various ways and means of avoiding them, and will spread this knowledge through its members and through the various channels of nationwide publicity, including the press, screen and radio.

New York City

Eye Conservation Classes.—Courses for home teachers of the blind and teachers of conservation of vision classes will be given at the Columbia University summer school session, July 10 to August 18, under the supervision of Robert B. Erwin of Cleveland.

Society of Cinematographic Instruction.—The Society of Cinematographric Instruction in Medicine and Surgery held its inaugural meeting, April 28, at the New York Academy of Medicine, under the presidency of Dr. James S. Edlin. The vice president, R. Ottolengui, D.D.S., discussed the value of the work, emphasizing that, to his knowledge, this was the first time the medical and dental professions had joined hands to promote cinematography to their mutual advantage. This society was incorporated, Nov. 19, 1921, for the advancement of science, the art of medicine and allied subjects by means of cinematographic reproductions.

Hospital Fund Distributed.—During the past year the United Hospital Fund has collected $525,000, which has just been distributed among the fifty-seven hospitals which share in the fund. The distribution was based generally on the amount of free treatment given by each hospital. The total number of patients treated in the hospitals participating in the fund this year was 195,261, of whom 60,000 were treated free. Among the general hospitals, Mount Sinai heads the list, receiving $34,017. Then follow St. Luke's, with $30,919; New York, with $22,673; the Presbyterian, with $19,548. Montefiore Home received the largest contribution, $37,295.31.

NORTH CAROLINA

Hospital News.—Bids were opened May 10 for the construction of the new $125,000 building for the Lincoln Hospital, Durham.——Plans have been completed for a new hospital to be established at Greer.——The Asheville Normal School is remodeling a building for use as a hospital at a cost of $10,000.

OHIO

State Medical Meeting.—At the seventy-sixth annual meeting of the Ohio State Medical Association held in Cincinnati, May 2-4, under the presidency of Dr. Wells H. Teachnor, Columbus, the following officers were elected for the ensuing year: president, Dr. Robert Carothers, Cincinnati; president-elect, Dr. Joseph S. Rardin, Portsmouth, and treasurer, Dr. Herbert M. Platter, Columbus. Dayton was selected as the meeting place for the next annual session. Dr. Carothers was presented with a gavel made from the flagpole that carried the first American flag in Europe in the World War, the organization being Base Hospital No. 4. Among resolutions adopted was one that the Sheppard-Towner act will not function in the best interests of the public; and it was resolved that the Committee on Public Policy and Legislation be directed to use every honorable means to deter the Ohio legislature from the appropriation of any money for the purpose of providing medical attendance under the provisions of the said law.

OKLAHOMA

Secretary Retires.—Dr. Fred H. Clark, Oklahoma City, secretary of the Medical Association of the Southwest for nearly seventeen years, has retired from the secretaryship to accept an appointment with the U. S. Public Health Service at the U. S. Veterans' Bureau Hospital No. 79, Dawson Springs, Ky. His retirement was effective May 1. Dr. William H. Bailey, Oklahoma City, will finish the year as secretary of the association.

OREGON

Physician Sentenced.—A report states that Dr. Joseph M. Murphy, Portland, was sentenced to six months in the county jail following conviction of violating the federal prohibition law. Report states he was accused of selling a concoction containing denaturated alcohol and glycerin.

Hospital Changes.—Dr. F. N. Gordon, Baltimore, has been appointed superintendent of the U. S. Public Health Service Hospital, Portland, to succeed Dr. Newton E. Wayson, who has been assigned to the laboratory division of the service at San Francisco. Dr. A. J. Campbell has been appointed assistant to Dr. Gordon.

Shrine Hospital.—One of the hospitals for crippled children which are being erected by the Shriners will be located at Portland. The Al Kader Temple has just purchased a 10-acre tract that will be deeded to the Trustees of the National Hospital Board of which the mayor of Portland is chairman. This hospital will have a capacity of fifty beds and will be used solely for orthopedic cases.

PENNSYLVANIA

Radium Fund.—A committee has been formed in Pittsburgh to raise funds for 50 mg. of radium, to be used by Dr. Wilfred Grenfell for the treatment of cancer among deep sea fishermen and their families in Labrador.

Reciprocity with Illinois Modified.—At its meeting, held May 4, the Pennsylvania Bureau of Medical Education and Licensure voted not to accept by reciprocity any physicians licensed in Illinois during 1921, because of the irregularities reported in granting of licenses during that year.

Bedford Lectures.—The College of Physicians of Pittsburgh has announced the institution of a series of lectures, one to be given each year, on the history of medicine, which will be designated the "Bedford lectures," in commemoration of Dr. Nathaniel Bedford, who was the first practicing physician of Pittsburgh. The first lecture of the series was given, April 27, by Dr. Clement R. Jones on the subject of the medical history of Pittsburgh.

Hospital News.—A tri-county tuberculosis and contagious disease hospital will be erected in Dauphin County.——The second annual Hospital Day was observed, May 12. Hospitals in Pennsylvania planned programs of exercises to commemorate the birthday of Florence Nightingale.——The Jefferson Hospital, Philadelphia, is constructing a "hospital hotel" at a cost of $1,500,000.——A nurses' home has been completed at St. Agnes' Hospital, Philadelphia.——The Methodist Hospital, Philadelphia, will have a five story addition, for which the cornerstone has been laid.——The Philadelphia General Hospital has built a separate structure for interns.

Philadelphia

College of Physicians of Philadelphia.—At a special meeting, May 12, resolutions were adopted to appoint a committee to arrange for the celebration, Dec. 27, 1922, of the one hundredth anniversary of the birth of Louis Pasteur. Dr. Eugene L. Fisk, president of the Life Extension Institute, New York, read a paper entitled "Health Extension and Life Extension," and Dr. Earl S. Bullock, Silver City, N. M., read a paper on "A Contribution to Climatic Phthisiotherapy."

Campaign Against "Quacks."—As a result of a campaign recently conducted against fraudulent medical practitioners and "quack" doctors in Philadelphia, by the state board of medical licensure, more than fifty arrests have been made during the past six weeks, and it is stated that 150 additional arrests are pending. Some of these men have obtained medical degrees from schools of medicine in other countries which have no standing in Pennsylvania; while others have conferred "medical degrees" on themselves, and have been doing a profitable business. One negro displayed on the wall of his office a degree of medicine granted by the "East African School of Medicine and Surgery" which he acknowledged that he purchased from the negro cook of a tramp steamer for $2.75.

SOUTH CAROLINA

Society Elections.—The Darlington County Medical Society elected Dr. Alfred D. Gregg, president, and Dr. Julian T. Goggeshall, secretary.——At the annual meeting of the Allendale County Medical Society, Dr. John E. Warnock was elected president and Dr. G. W. Loadholt, secretary-treasurer.——At a meeting of the Oconee County Medical Society, held in Seneca recently, Dr. William C. Marett was elected president and Dr. Edgar A. Hines, secretary-treasurer.——At the first annual meeting of the South Carolina Pediatric Society, in April, Dr. Richard M. Pollitzer, Charleston, was elected president and Dr. E. A. Hines, secretary.

TEXAS

New Hospital for Houston.—Ground will be broken, June 15, and construction will be started on the four-unit Hermann Hospital to be erected at Houston at a cost of approximately $600,000. The institution will have a capacity of 150 beds and is expected to be ready to receive patients within one year.

Personal.—The state health officer has announced the appointment of Dr. Mark P. Smartt, Manor, as director of the bureau of communicable diseases.——Dr. Winfred Wilson, Memphis, was elected president and Dr. James J. Crume, Amarillo, was reelected secretary-treasurer of the Panhandle District Medical Society.——Dr. Joseph A. Mullen has been reelected president of the Houston Ophthalmological and Oto-Laryngological Society.

WASHINGTON

Health Officers Appointed.—Dr. Charles G. MacCallum has been appointed health officer of Vancouver to succeed the late Dr. Chalmers.——Dr. J. Bennett Blair has been appointed health officer of Clarke County.

Eagleson Hall.—The new $100,000 home of the Y. M. C. A., Seattle, is to be named Eagleson Hall in memory of James Eagleson, son of Dr. James B. Eagleson of Seattle, who died from influenza at Newport News following his return from France with the A. E. F.

WEST VIRGINIA

Health Officers' Meeting.—At a meeting of the state and county officials of West Virginia held at Cumberland, Md., recently, Dr. William T. Henshaw, Martinsburg, state health commissioner, made the following appointments: Dr. Briscoe R. Ransom, Harper's Ferry, was appointed to the legislative committee of the state board of health; Dr. James H. Wolverton, Piedmont, the preventable disease department, and Dr. Samuel B. Johnson, Franklin, administration of public health.

WISCONSIN

Physicians Elected to Mayoralty.—The following physicians have been reelected mayors of their townships: Dr. Jay B. Brewer, of Jefferson; Dr. William J. Schmidt, of the city of Mayville, and Dr. William H. Weld, of Fort Atkinson.

Personal.—Dr. John V. Wenzel has been elected president of the staff of St. Joseph's Hospital, Ashland.——Dr. James Evans, La Crosse, who received the Croix de Guerre in 1917 for services with the ambulance corps in France, has received the further reward of a scholarship for study in France. Dr. Evans will spend a year under masters of surgery in Paris.

Hospital News.—The new addition at St. Mary's Hospital, Wausau, is completed and has been opened for patients.——Alterations are being effected at the Madison General Hospital at a cost of $16,500. There will be two new classrooms, a large lobby, a well furnished waiting room, a demonstration room and a library for the nursing staff.——Articles of incorporation have been filed by the Memorial Hospital Association of Burlington, the plan being to establish and maintain a hospital at Burlington as a memorial to the veterans of the World War.——The foundations have been laid for the new sanatorium building at Bayfield, to be erected by the Tri-County Sanatorium.

WYOMING

State Medical Meeting.—The annual meeting of the State Medical Society of Wyoming will be held at Sheridan, June 20-22, under the presidency of Dr. Frederick A. Hodson, Sheridan.

Hospital Items.—The Fort McKenzie War Veterans' Bureau Hospital will be formally dedicated June 22, during the meeting of the state medical society at Sheridan. This hospital will be devoted entirely to caring for neuropsychiatric cases, and will be in command of Major John R. Anderson, U. S. Public Health Service.——The Frances Warren Pershing Memorial Hospital, Cheyenne, was recently opened for the reception of patients. The hospital has been equipped with modern improvements and has a capacity of 185 beds.

CANADA

Soldiers' Civil Reestablishment.—The assistant deputy minister of the reestablishment department has recently submitted a report relative to the vocational rehabilitation of Canadian disabled ex-service men, which says:

> Of a total of 51,708 disabled veterans of the World War who began training previous to last year, 41,912 have graduated. These men were trained in 421 separate industries. Follow-up statistics show that 65.6 per cent. were subsequently employed in the work in which they were trained. . . . Herein lies the strength of the work in Canada, the limitation of the period of training, at the end of which a man is sent out to a job.

GENERAL

Warning.—Complaint is made that an individual, representing himself as a salesman for several companies manufacturing roentgen-ray apparatus, has been traveling through the Northwest and imposing on physicians by the issuing of checks with unsatisfactory signatures. When last reported, he was at Helena and at Butte, Mont.

Association for the Study of Internal Secretions.—The sixth annual session of the association will be held in St. Louis, May 22, under the presidency of Dr. Walter B. Cannon, Boston. All papers read during the convention will be published in *Endocrinology,* the bulletin of the association.

American Laryngological Association.—At the forty-fourth annual congress of the association, in Washington, D. C., May 1-3, the following officers were elected for the ensuing year: president, Dr. Emil Mayer, New York; first vice president, Dr. George Fetterolf, Philadelphia; second vice president, Dr. Lorenzo B. Lockard, Denver; secretary, Dr. George M. Coates, Philadelphia; librarian, Dr. Joseph H. Bryan, Washington, D. C., and treasurer, Dr. Joseph Payson Clark, Boston.

Bill to Transfer Hawaiian Leprosarium.—Transfer of the leprosarium at Kalawao, Hawaiian Islands, to the Territory of Hawaii by the government of the United States is contemplated in a measure presented to the House by Representative Baldwin. The bill provides that the lands and buildings of this leprosy investigating station shall be given to Hawaii, and a deed of transfer be made by the Secretary of the Treasury. All equipment that may be required for the use of the Public Health Service of Hawaii shall also be turned over.

American Public Health Association.—At the annual meeting of the association, held in Washington, D. C., recently, the governing council of the organization decided to appoint a general committee to reorganize the association, after a majority of its members agreed with Dr. L. I. Harris, New York, that the association was led and directed by corporate agencies in increasing numbers. The first meeting of the committee was held, May 4, in New York. Other committees will meet throughout the country, and the results will be compiled and placed before the next annual meeting.

American Society of Tropical Medicine.—At the eighteenth annual meeting of the society held in Washington, D. C., May 2-3, the following officers were elected: president, Dr. George Dock, St. Louis; vice presidents, Drs. Sidney K. Simon, New Orleans, and Joseph F. Siler, M. C., U. S. Army, and secretary-treasurer, Dr. Brayton H. Ransom, Washington. Fifty-five new active members and five new corresponding members were also elected. The annual meeting for 1923 will be held in Atlantic City, N. J., at or about the time of the Annual Session of the American Medical Association.

Law Declared Unconstitutional. — The supreme court declared the child labor law unconstitutional, May 15, when Chief Justice Taft stated that the law attempted to regulate an exclusively state function in violation of the federal constitution and the tenth amendment, and was defended as an excise tax levied by Congress under its power of taxation conferred by the federal constitution. This law was enacted in 1919, to regulate the employment of children under 14 years of age in factories, and under 16 in mines or quarries, by levying a tax of 10 per cent. on the net annual profits of those employing such labor.

Bequests and Donations.—The following bequests and donations have recently been announced:

Grady Hospital, Atlanta, Ga., $500,000, for the establishment of a clinic, by the will of Albert Steiner.

American University, Beirut, Syria, Roberts College and Constantinople Woman's College, $360,000, by the Laura Spellman Rockefeller Memorial.

Jamaica Hospital, Jamaica, N. Y., $40,000; New York Association for the Blind, the School for Hard of Hearing, and the Flower Hospital, New York City, each $5,000, by the will of Mrs. Susie D. Smith.

Nebraska Children's Home Society, real estate and personal property to the value of $35,000, by the will of N. C. Sherman of Gordon.

Mount Sinai Hospital, New York City, $30,000, for the erection of a dispensary, donated by Louis Lipkin in memory of his parents.

Hawley Home for Children, Saratoga, N. Y., and the Saratoga Hospital, each $25,000; Saratoga Cure and Infirmary, $10,000; St. Luke's Hospital, New York, $10,000, by the will of Helen M. Knicherbacker.

Samaritan Hospital, Troy, N. Y., $10,000, for the endowment of a room, by the will of Margaret Fay Brown of Bennington, Vt.

Misericordia Hospital, New York City, $5,000, to the Sisters for endowing a free bed; St. Vincent's Home, St, Vincent's Maternity Hospital and St. Simond's Hospital for Crippled Children, each $3,000, and St. Christopher's Hospital, $500, by the will of Francis J. McGovern.

Bridgeton Hospital, Bridgeton, N. J., $2,000 in liberty bonds, by the will of Mrs. William Martin. Building lots at Chestnut Ridge and other bequests, totaling $2,500, by the late Lorenzo Robbins.

St. Luke's Hospital and Colored Community Service, Greenville, S. C., $1,600 from negroes of the city.

Bethel Memorial Hospital, New York City, $1,000, and the residuary estate of the testator, by the will of Mrs. Mary E. P. King.

Central Maine General Hospital, Lewiston, $1,000, from the charity under the direction of the Woman's Association.

LATIN AMERICA

Hospital News.—A Junta de Beneficencia has been established in Paita, Peru, for studying the ways and means of raising funds for the erection of a hospital in that port. Mr. A. A. Pallete is director of the Junta.

FOREIGN

Congress on Hygiene.—A national congress on hygiene will be held at Naples this month. The principal subjects of discussion will be alcoholism in its various aspects, sexual hygiene and prophylaxis and personal cleanliness.

Naval Medical School at Naples.—After having been closed for seven years, the Scuola di Sanita Militare Marittima has been reopened for graduate courses. The instructors are the higher medical officers of the navy. Prof. C. Belli is in charge.

Scholarships in Ophthalmology at Rome.—Prof. G. Cirincione, of the chair of eye disease at the University of Rome, and a local merchant have presented the authorities with 240,000 liras to found national and international scholarships in ophthalmology.

Leprosy Ground for Divorce.—A bill is now before the House of Assembly in South Africa to make leprosy and incurable insanity grounds for divorce. Detention in a mental hospital for five years is to be considered prima facie evidence of incurable insanity.

Presentation to Physician.—Sir Halliday Croom, emeritus professor of midwifery, University of Edinburgh, Scotland, was presented with a silver salver on the occasion of his retirement and the completion of fifty years of teaching in the Edinburgh Medical School.

Italy Accepts Pharmaceuticals from Germany as Reparations.—The *Riforma Medica* states that the military pharmacy headquarters at Turin has been authorized by the government to take charge of the sale of the chemical products and pharmaceuticals received from Germany to be credited to the reparations account.

Italian Society of Hospital Physicians.—The *Riforma Medica* relates that Professors Bastianelli, Riva-Rocci, Grossich, Nicolich and eight others are organizing the Società Italiana di Medicina e Chirurgia Ospedaliera. Besides the usual aims of such an organization, the society plans to offer supplementary courses to complete the official medical instruction.

Dutch Antituberculosis Society.—The Dutch Central Society for combating tuberculosis recently sent out questionnaires. Many circulars were not answered, so that the actual number of cases of tuberculosis is not known, but it is estimated that 6,000 or 7,000 persons are in need of sanatorium treatment. Answers were returned to only 40 per cent., reporting 16,259 cases of tuberculosis (7,190 in males and 9,069 in females).

Rockefeller Foundation Gifts.—It is announced that the sum of $62,000 has been given by the Rockefeller Foundation to endow chairs of medicine and surgery at the Hongkong University School of Medicine, China.——The site for the new school of hygiene to be erected in London, with the $2,000,000 donated by the Rockefeller Foundation, has been selected at Bloomsbury, in close proximity to the buildings under construction for the University of London.

Plan to Send Netherlands Insane to Gheel.—The *Nederlandsch Tijdschrift* reports that the Netherlands Association of Asylum Physicians has protested to the government against the proposed plan to send certain indigent insane to the Gheel colony in Belgium for purposes of economy and administration. The expense of boarding them there is less than to keep them near their homes. The protest says that it would be inhuman to send these unfortunates to such a different environment, far from their families, and with a difference in language besides. These drawbacks would not counterbalance the advantages of the Gheel system.

New Italian Surgical Journal.—The *Annali Italiani di Chirurgia* has just been founded at Naples by Professor and Senator Pascale of Naples, and Professors Alessandri of Rome, Muscatello of Catania and Roncali of Naples. The editorial staff includes forty-three other leading surgeons of Italy besides a long list of collaborators, but no mention is made of the price or how often the *Annali* is to appear, and the only address given is that of the publishing house, Piazzetta Casanova, Naples. The first number contains four original articles and ten pages of classified bibliographic titles corresponding to November and December, 1921.

Fellowship of Medicine and Graduate Medical Association.—A short course in general medicine was given at various hospitals in London, England, May 1-13. This course will be repeated during the summer, and others of a like nature in children's diseases, tropical medicine, etc. A series of lectures will also be given at the Royal Society of Medicine. May 24, Sir St. Clair Thomson will deliver a lecture on "The Surgical Anatomy of the Nose and Accessory Sinuses." The complete list of lectures, to the end of July, will be forwarded on application to the secretary of the Fellowship of Medicine, 1 Wimpole Street, London.

National Council for Mental Hygiene.—A provisional committee has been formed in England consisting of Sir Norman Moore, president of the Royal College of Physicians, Sir Charles Sherrington, president of the Royal Society, Sir John Goodwin, director-general of the Army Medical Service, and Sir George Newman, principal medical officer of the ministry of health, to organize the National Council for Mental Hygiene, which will hold its first meeting this month. The council will be concerned with the matters to which the National Committee for Mental Hygiene of America and the recently organized Belgian society, "The Ligue d'Hygiène Mentale," devote themselves.

Antiepidemic Conference.—The resolutions of the conference held in Warsaw, March 20-28, which was convened by the Polish government with the approval of the League of Nations, are now available. Twenty-seven powers, Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Esthonia, Finland, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Jugoslavia, Latvia, Lithuania, Norway, Poland, Roumania, Soviet Russia, Soviet Ukraine, Spain, Sweden, Switzerland and Turkey were in attendance at the conference, the object of which was to draw up a detailed report on the epidemic situation in East Europe, and to submit plans for an international campaign. These plans constitute (*a*) immediate measures for checking the spread of epidemics beyond the Russian frontiers, and (*b*) a scheme to aid the Russian and Ukrainian health service in an attack on the centers of the infection. The conference also resolved that these measures should be entrusted to the League Health Organization and Epidemics Commission, on which bodies all states taking part must be represented. The report and recommendations of the conference are to be communicated to the Genoa Conference.

Congress on Mental Hygiene at Paris.—As already mentioned, the French Ligue d'Hygiène Mentale has organized a congress to be held at Paris, June 1-4, 1922, at the Hotel des Sciences Savantes, 28 Rue Serpente. The official notice states that this congress has been organized to serve, in France, as a preface to the first International Congress on Mental Hygiene, which is being arranged to convene in the United States under the auspices of the New York committee of organization of the League for Mental Hygiene in America. The topics appointed for discussion at the Paris meeting are general and appeal to biologists, educators, manufacturers, lawyers, military men and all who are interested in the theoretical and practical problems of mental hygiene, as well as to physicians. Toulouse of Paris will open the discussion on "Mental Hygiene in the Family"; Rabaud on "International Entente for Scientific Research on Mental Hygiene"; Claparède of Geneva on "Applied Psychology in Methods of Teaching"; Lahy on "Selection of Workers in Relation to Mental Hygiene," and Antheaume on "Care of Psychopaths." The fee for nonvoting members of the congress is 10 francs; 25 francs for regular members. The treasurer is Dr. Dupain, 1 Rue Cabanis, Paris, and the secretary, Dr. Genil-Perrin, 99 Avenue de la Bourdonnais, Paris.

Personal.—Dr. Charles S. Myers, director of the psychologic laboratory, University of Cambridge, England, has resigned to devote his time to the work of the British National Institute of Industrial Psychology.——Prof. Lazarus Barlow, who holds the chair of experimental pathology at the Middlesex Hospital School, England, is visiting the United States for the purpose of investigating methods of cancer research and radium treatment.——Dr. B. Eicken has been appointed to the chair of otorhinolaryngology at the University of Berlin to succeed Professor Killian.——Dr. C. H. Brooking, Paignton, England, was the recipient of many telegrams of congratulation on attaining his one hundredth birthday. It is stated that Dr. Brooking is the oldest medical practitioner in England.——Professor Guiart of Lyons has been on an official mission in Roumania and presented decorations sent by the French government to Professor Racovika, senator and director of one of the institutes of the University of Cluj, and to Dr. Jacobovici, dean of the medical faculty. The latter was thus honored for his distinguished service in organizing the campaign against cholera, typhus and relapsing fever in his section. A silver medal was presented also to the wife of Professor Bratu in recognition of her devoted services in the hospitals at the front. Professor Guiart was accompanied by four other French professors, and the ceremonies were concluded with a banquet.

Deaths in Other Countries

Dr. **George St. George**, Antrim, Ireland, former president of the Ulster Branch of the British Medical Association, died suddenly, April 8.——**Arthur William Bacot**, entomologist to the Lister Institute of Preventive Medicine, died of typhus, April 12, while engaged in investigating the disease in Cairo, Egypt.——Dr. **William Cochrane Murray**, surgeon to the Glasgow Infirmary, Scotland, March 12.——Dr. **H. C. Hall**, assistant at the State Serum Institute at Copenhagen, aged 38. His recent monograph Dégénérescence Hépato-Lenticulaire has already been translated into other languages.——Dr. **J. Bugge** and Dr. **W. Zogbaum**, both prominent physicians of Christiania. The latter had a private radiotherapy institute.——Dr. **R. Kolisch**, privat-dozent for internal medicine at the University of Vienna.——Dr. **S. Raymat Sanchez**, director of the hospital at Remedio, Cuba, president of the board of education and city physician.——The *Crónica Médico-Quirúrgica* of Havana mentions also the death in Cuba of Dr. **L. Lozano**, Dr. **F. del Rio** and Dr. **W. Fernández Calzada**.——Dr. **A. Stroobant** of Belgium was recently killed in an automobile accident.——Dr. **J. Arranz Gimeno** of Valladolid.——Dr. **Krolunitsky** of Kazan. He worked with Ravaut in France during the war in research on malaria and amebiasis, and returned to Russia, where he has now succumbed to typhus.——Prof. **G. Mazza**, director of the dermatologic clinic at the University of Pisa and dean of the faculty of medicine, aged 64.——Dr. **V. Tratteneco**, instructor in obstetrics and gynecology at the University of Padua.——Dr. **Huot**, chief of the public health service in the French colony of Indo-China after long service in French Africa, organizing the campaign against trypanosomiasis and malaria. The *Presse médicale* mentions further the death of Dr. **Gavaud**, chief of the public health service in the middle Congo region, and pays high tribute to the distinguished services rendered by these two pioneers of hygiene in tropical regions.

Government Services

Contract Let for Negro Veterans' Hospital

The contract for the construction of Veterans' Hospital at Tuskegee, Ala., for negro veterans, at a cost of $1,010,000, has been awarded to Algernon Blair of Montgomery, Ala. The total of $2,250,000 has been appropriated for the immense institution, portions of which will be used in building streets and roads to the site. Award of the contract for the mechanical equipment has also been let, to S. W. Rittenhouse of Washington. The contract covers the installation of boilers, electric wiring, plumbing and other mechanical facilities of the new institution. The hospital is to be completed in nine months. It is the only federal institution in the United States exclusively for negro disabled soldiers.

Bill for Rest Camps for Veterans

Acquisition and construction of rest camps in the various districts of the U. S. Veterans' Bureau for disabled war veterans are provided for in a bill introduced in the House of Representatives by Representative Gallivan. Five million dollars is appropriated to cover the cost of the undertaking, under the jurisdiction of Col. Charles R. Forbes, director of the U. S. Veterans' Bureau.

Pay Bill Passes House

The McKenzie bill, readjusting the pay and allowances of the commissioned and enlisted personnel of the Army, Navy, Marine Corps, Coast Guard, Coast and Geodetic Survey, and the U. S. Public Health Service, passed the House by a vote of 219 to 26. The bill will go immediately to the Senate to be acted on, as the Army and Navy appropriation supply bills are being held up in both branches of Congress in order to include the new pay scale in their provisions. The House defeated an effort by Representative Connally of Texas to eliminate the section of the measure which authorizes the President to fix the money allowance for subsistence to both officers and men in the various branches of the government service in accordance with the cost of living. Representative Alice Robertson of Oklahoma introduced an amendment giving a higher subsistence and room rent allowance to nurses of the Army and Navy, and it was adopted. The amendment increases the subsistence allowance from 60 cents to $1.20 per day, and the rent allowance from $40 to $60 per month for the nurses. By the terms of an amendment that was adopted, former national guardsmen taken into the regular Army are to receive credit at the rate of 50 per cent. for their guard service in determining their pay.

Vacancies for Physicians

It is announced by the U. S. Civil Service Commission that open competitive examinations for physicians will be held, June 14, by the U. S. Civil Service Commission for vacancies in the seventh civil service district (Michigan, Wisconsin and the northern half of Illinois) of the U. S. Veterans' Bureau and the U. S. Public Health Service.

American Legion Camp

The American Legion, with headquarters at Hotel Astor, New York, is conducting a campaign to raise $2,000,000 to establish a camp for tuberculous ex-service men at Tupper Lake in the Adirondack Mountains. Twenty buildings on a 1,200-acre site have already been purchased. It is hoped to have the camp advanced enough to care for 1,700 men during the first year. Dr. Samuel Lloyd is treasurer of the campaign committee.

Veterans' Bureau Takes Over Public Health Service Hospitals

By executive order, effective May 1, President Harding transferred from the control of the U. S. Public Health Service to the U. S. Veterans' Bureau the hospitals operated by the former for the medical care and treatment of World War veterans. This order removes from the supervision of the Public Health Service a large part of the hospital system heretofore operated by it, leaving under its control only the U. S. Marine hospitals. The hospitals turned over number fifty-seven; they have a total bed capacity of 17,577, and patients numbering 13,057. They include all types—that is, hospitals for tuberculosis, neuropsychiatric disorders and general medical and surgical cases. The personnel operating these hospitals was transferred with them, including approximately 925 physicians and dentists, 1,425 nurses, 425 reconstruction aides and 110 dietitians; a total operating personnel of about 11,500 persons.

The commissioned officers are transferred by detail only and remain as officers of the Public Health Service. All other personnel is transferred permanently. The Veterans' hospitals, under the law, are no longer permitted to care for other than veterans. The Public Health Service in its system of Marine hospitals, under the law, is still permitted to care for such veterans as may be sent them, and there remain in these hospitals more than 1,000 such patients.

During its connection with this work, the Public Health Service has furnished medical care and treatment in hospitals under its control to an approximate total of 264,000 veterans. These patients have been furnished an approximate total of 14,397,500 hospital relief days. There has been given a total of 2,042,200 outpatient treatments and 1,459,200 physical examinations have been made.

Conference of Tuberculosis Experts

May 2, at the invitation of the director, a conference of tuberculosis experts met in the Veterans' Bureau. The personnel of the committee of consulting specialists was as follows: Dr. Edward R. Baldwin, Saranac Lake, N. Y., chairman; Dr. James Alexander Miller, president, National Tuberculosis Association, New York; Dr. William L. Dunn, Asheville, N. C.; Dr. David R. Lyman, Wallingford, Conn.; Dr. Harry A. Pattison, New York; Dr. James W. Pettit, Ottawa, Ill., and Dr. Charles S. Rockhill, Cincinnati, Ohio. The conference expressed entire approval of the bureau's hospitalization program, which plans for approximately 9,000 beds. U. S. Veterans' Bureau Regulation 20, with regard to rating, was considered in detail and was approved as being on a sound medical basis. The conference passed a resolution favoring medical supervision and management of veteran hospitals and offered to support the Veterans' Bureau in securing future legislation.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 24, 1922.

Another Martyr to the Study of Typhus Fever

The editorial on typhus fever and its martyrs (The Journal, April 8, 1922, p. 1054) had scarcely been published when another name had to be added to the list. Mr. A. W. Bacot, entomologist to the Lister Institute, died at Cairo from typhus fever contracted by handling infected lice while carrying out, in conjunction with Mr. J. A. Arkwright, research work on the disease for the Egyptian government. Mr. Arkwright is also suffering from the disease. Bacot was not a physician. Until 1912, when he was 46, he drudged as a clerk in London, but studied entomology as a hobby. In 1910, in conjunction with L. B. Prout, he read a remarkable paper before the Royal Society describing many generations of a moth. His researches established his position as an entomologist, and in that year, when the Indian Plague Commission requested the Lister Institute to undertake a research into the bionomics of fleas, Bacot was invited to assist. His work was so good that, in 1911, he was appointed entomologist to the institute, an appointment which was more than justified.

With Prof. C. J. Martin, he worked on plague, and they discovered the mechanism by which infection is conveyed by the flea. Later, he went to West Africa and attacked the yellow fever problem, on which he made a masterly report. Since 1916, he had concentrated on the study of the louse, advancing our knowledge of its biology and the practical applications of this knowledge. In 1917, he was appointed to the trench fever committee of the War Office, which showed that the disease was conveyed by the louse. He controlled the entomologic side of the inquiry, the feeding of the lice on trench fever patients and the collection of their excreta. In 1920, he went to Poland as a member of the typhus research commission of the league of Red Cross societies. There, during experiments on *Rickettsia*, he contracted trench fever. During the war, he most thoroughly investigated the louse problem—their methods of pairing, laying eggs, their fecundity, length of life and habits. He experimented with insecticides, suspending next his skin packets containing lice. In 1921, he described, at the Royal Society of Medicine, experiments in which, after immersion in 2 per cent. compound solution of cresol, a louse was transferred to sterile water and placed on filter paper to recover. It was then held under a slip of paper on a slide beneath a binocular microscope magnifying 16 diameters, with the anal segments projecting beyond the slip; and, with a capillary pipet, an enema of whipped human blood sufficient to fill the stomach was administered. Bacot belonged to that illustrious line of workers outside the profession, of whom Pasteur was the greatest, who have done much to advance medical science.

Committee of Inquiry on Venereal Disease

The controversy which has been so long raging, described in previous letters to The Journal, between the two societies formed to combat venereal disease, will be brought before an impartial tribunal. A committee, of which Lord Trevethin (an ex-lord-chief-justice) is chairman and which includes Professors Bulloch, Dreyer and Kenwood, Sir Frederick Mott, a woman physician and others, has been appointed to consider and report on the best medical measures for preventing venereal disease in the civil community, having regard to administrative practicability, including costs. The committee is an unofficial body which has been brought together by a committee of selection consisting of Sir Clifford Allbutt, Sir Anthony Bowlby (president of the College of Surgeons), Sir Walert Fletcher, Sir Archibald Garrod, Professor Kenwood, Sir Norman Moore (late president of the Royal College of Physicians), and Sir John Thomson Walker. Sir Alfred Mond, minister of health, has promised the committee "encouragement and support."

International Exchange of Lecturers

Last year the University of London instituted an exchange of lecturers between England and continental countries. They will be continued this year by professors from Holland and the University of Paris. During May, the following lectures will be given at the house of the Royal Society of Medicine: "The Human Neocerebellum," by Dr. C. Winkler, professor of clinical psychiatry in the University of Utrecht; "Antianaphylaxie," by Professor Widal; "De l'erythrémie (Maladie de Vaquez-Osler)," by Professor Vaquez; "Des reflexes de défense," by Professor Babinski. The first lecture will be in English, the remaining three in French. Admission will be free and without ticket.

The London School of Hygiene

As stated in a previous letter to The Journal, the Rockefeller Foundation has provided the sum of $2,000,000 toward the cost of building and equipping a school of hygiene in London, on the understanding that the British government provide for the staffing and maintenance of the school. Such a school was recommended by a committee appointed in 1921 to consider provision for graduate education. This recommendation was further considered by an expert committee, with the minister of health as chairman. In view of the difficulty of financing the scheme, the whole case was put before the Rockefeller Foundation trustees as one in which they might think it well to cooperate. On the recommendation of the minister of health, the foundation has acquired a site for the school in Gower Street, near the British Museum.

A National Council for Mental Hygiene

An influential committee consisting of the leaders of the profession, and particularly of neurologists and psychiatrists, has decided to form a national council for mental hygiene. Much attention has recently been given to the treatment of functional nervous diseases and minor mental troubles, as is shown by the establishment of hospitals and clinics for their treatment. Many societies and associations, old and young, are engaged in promoting the study of mental disorders and the welfare of the insane, the problems of industrial psychology and the various aspects of mental deficiency. The object of forming the council is that the work of these institutions and societies may be encouraged to expand and add to their usefulness by organized cooperation. The council will help to establish, at general hospitals, psychologic clinics for the treatment of early nervous and mental disorders. It will endeavor to make mental hygiene a more prominent subject in the education of medical students and, by instructing the public in the principles underlying mental health and illness, gradually diminish the enormous waste of time and energy, in all classes of society, which now results from widespread ignorance concerning these questions. The council will be modeled on the National Committee for Mental Hygiene, which has been established in the United States for some years.

The Maori Survival

Among the Polynesian peoples of the Pacific, only the Maoris of New Zealand have shown a capacity for survival and for assimilation of European civilization. Their successful struggle for existence forms a curious exception to the rule that these people are doomed to extinction on contact with a higher civilization. The first census of the Maoris, taken in 1874, showed a population of 45,470. From that time, their number steadily declined until 1896, when it reached 39,854. Thereafter it as steadily increased until 1921, when, despite losses of men in the war and the influenza epidemic, it reached 52,751. The government statistician comments as follows:

> The cardinal fact emerges that the Maori race retains its virility, and is on the increase. The position is the more satisfactory in that it represents the almost unique spectacle of a native race living with a white race of overwhelmingly superior numbers, and yet able to preserve its own individuality and strength.

The native population is almost wholly rural, and this is held to be the secret of the survival of the race. For many years, the government has safeguarded the native lands. At the same time, the Maori leaders have steadily directed the attention of their people to the advantages of cultivation, and the people have responded. In future years, they may imitate the white man and yearn for the delights of the towns; but, in the meantime, they will have won the first battle with the race-destroying influences of the white man's civilization.

Gift for Cancer Research

A Canadian peer, Lord Atholstan, has given $100,000 to the Imperial Cancer Research Fund, and he offers the same sum as a prize for the discovery of a cure for cancer, without restrictions as to the nationality of the contestants. The award will be made by the Royal Colleges of Physicians and Surgeons of London.

PARIS

(From Our Regular Correspondent)

April 28, 1922.

The Bill on Industrial Insurance and the Medical Profession

The bill on industrial insurance introduced before parliament by the government has given rise to lively discussions. Its opponents say that it is too wide in scope and that, consequently, it will be a heavy financial burden. The insurance grants the insured: (1) in case of sickness or disability, medical and surgical care, medicine and special treatment, as well as a monthly allowance or pension during the time of incapacitation; (2) in childbirth, medical and surgical care, medicaments, and special allowances for delivery and nursing; (3) in old age, a minimal pension, guaranteed at the age of 60; (4) in case of death, an allowance to the family; (5) for each child born, a family allowance; (6) the right, if he has children below 16 years of age to support, to an increase of sickness, disability and death allowances; (7) medical, surgical and pharmaceutic assistance to be allowed the husband or wife, and children aged less than 16 years. The bill applies to all French salaried persons and farmers of either sex whose income or salary does not exceed 10,000 francs a year.

Being unable here to give the financial details of the bill or to discuss the criticism to which it gave rise, I will mention only the technical points interesting the physician. The health insurance operates thus: The insured chooses his physician from a list of practitioners with whom those in charge of the insurance funds have signed a contract and who have agreed on its conditions. Payment is contracted per capita; and to this remuneration is added the amount derived from what is called "ticket modérateur," which is a ticket varying in price from 25 to 75 centimes, according to the group to which the insured belongs, and which is given to the physician when he calls, by the patient. This ticket is intended to reduce the abuse of medical calls by the patients. Each physician is paid in proportion to the number of visits. To prevent abuses, the bill provides for a control of the funds. Thus, the medical points of the bill are: a tariff by contract between the office in charge of the funds and the medical syndicates; a control of physicians among themselves, and a slight increase of the consultation fee or professional call fee paid by the patient under the form of the "ticket modérateur."

This bill has encountered strong opposition on the part of the medical profession. The parliamentary medical group requested Dr. Lafontaine, secretary of the Union des Syndicats médicaux, to give his opinion on the bill in question. Dr. Lafontaine stated that the Union des Syndicats médicaux could not lend its assistance for the creation of an industrial insurance unless three conditions were accepted: (1) unrestricted choice of a physician by the patient; (2) payment of the physician by the visit, and (3) the right to medical secrecy. The first two conditions will probably be easily agreed on, but it is doubtful whether, in social medicine, an organization will ever be made to respect privileged communications integrally.

Psychiatric Statistics in the Army

Dr. André Barbé, who, during the war, was expert alienist in court martial trials, examined 195 soldiers taken before the court, as to their mental condition. While these cases were different one from another, either on account of the accusation, the mental condition of the culprit or the extent and degree of responsibility of the subject, Barbé was able to make a general study of the cases, which he published in the *Annales médico-psychologiques*. The conclusions are that insubordination, disobedience, desertion before the enemy, desertion while on guard, the illegal wearing of decorations, theft and criminal assault are ascribed mostly to the feebleminded, while alcoholics and epileptics are responsible for the more violent acts, such as insult to their superior officers, infliction of bodily harm, murder and rape. The psychic disturbances most frequently observed are mental debility and degeneracy. Then follow, in the order named, chronic alcoholism (often associated with mental debility), periodic mania, psychoses following shock, epilepsy and malaria. A certain number of soldiers (twenty-three out of 195) did not present any mental disturbance, asking to be examined in an effort to lighten the gravity of their cases. If their responsibility is obvious when they do not present any mental disturbance, the same may be true in certain cases of alcoholism and epilepsy. On the other hand, responsibility is lessened in the feebleminded and in those having suffered from concussion or malaria. Finally, imbeciles, those suffering from conditions of mental confusion, the demented and those in delirium are not responsible.

Research at Laboratory of Professor Arthus

Prof. Maurice Arthus, director of the institute of physiology of the University of Lausanne, has invited young students of experimental biology to come for three weeks, from July 24 to August 12, inclusive, to his laboratory, to participate in an experimental research which will begin by study of cobra venom, and take in rapidly the problems of anaphylaxis and immunity. Arthus' offer has no commercial phases, and those who will accept it are not under any financial obligation. Students who wish to avail themselves of this opportunity will write to Professor Arthus, Institut de physiologie, Champ-de-l'Air, Lausanne, before June 15, mentioning their nationality, and enclosing in their letter a brief curriculum vitae and scientific references.

Congress for the Improvement of the Condition of the Blind

The Congress for the Improvement of the Condition of the Blind, to be held in Paris, July 17-23, in commemoration of Valentin Haüy's centennial, will be divided into ten sections: (1) medical questions; (2) teaching; (3) systems and material; (4) questions arising after schooling; (5) new trades; (6) blind women; (7) war blinded; (8) assistance and hospitalization; (9) legislation, and (10) miscellaneous questions. The membership fee of 10 francs should be sent to the general secretary, 56 Boulevard des Invalides, Paris.

Infant Mortality and Depopulation

Paul Strauss, minister of socal hygiene, public charity and social welfare, being deeply interested in the problems of infant mortality and depopulation, has ordered an inquiry in certain departments. Persons best qualified to assist will be asked to lend their services to the administration. This work must be ended in three months.

BELGIUM

(From Our Regular Correspondent)

Liége, April 29, 1922.

Flemish Medical Congress

The Twenty-First Flemish Congress of Medical and Natural Sciences will be held this year in August at Bruges, at the time the other Flemish congresses are held. Thus, Bruges will be the headquarters for several congresses in which the Flemish language will be spoken, including those of philologists, jurists, educators and Flemish artists. Many physicians from Flanders and Holland have already expressed their desire to be present. The principal subjects chosen for discussion will deal with vaccine therapy.

The Teaching of Gynecology in the University of Brussels

The Belgian Society of Gynecology and Obstetrics has unanimously protested against the tendency of the boards of hospitals and scientific societies (meaning the University of Brussels) to deny gynecology the rank of special medical study. The Faculty of Medicine of the University of Brussels has appointed a committee to make a report, from which it will be able to decide whether gynecology can be considered a specialty as important as otorhinolaryngology and ophthalmology. The Belgian Society of Gynecology and Obstetrics cannot remain indifferent to such a question, and it will be unfortunate, to say the least, if those who are in favor of eliminating gynecology obtain the majority of votes, allowing the University of Brussels to eliminate from its curriculum the study of gynecology, as the subject will lose the importance it has acquired if included in general surgery. Monsieur Potvin suggested sending to the Faculty of Medicine the following resolution:

> The Belgian Society of Gynecology and Obstetrics, in its session of April 1, expresses the hope that the Faculty of Medicine of the University of Brussels, before taking a decision concerning the teaching of gynecology in our hospitals, will add to the members of the committee, appointed to study the question, a well known physician who has made a specialty of this important branch of medicine and surgery.

The resolution was unanimously adopted.

Third International Conference Against Tuberculosis

Following the dissolution, during the war, of the International Association Against Tuberculosis, a new international society has been founded, since the armistice, by the countries belonging to the League of Nations and the United States, under the name of the International Union Against Tuberculosis. Conferences against tuberculosis are organized each year in the various capitals of civilized countries. The first conference was held in Paris in 1920, and the second one in London in 1921. The third conference was to be held in Washington; but America, wishing to pay homage to Belgium, relinquished her turn, and the third conference will be held this year at Brussels in the Palais des Académies, July 11-13. The queen of Belgium has granted the conference her patronage, and Monsieur Berryer, minister of the interior, has accepted the honorary presidency. Dr. Dewez, president of the Ligue nationale Belge contre la tuberculose, has been appointed president, and Monsieur Grégoire, governor of the province of Liége, vice president. The general secretaries will be Drs. Derscheid and Falloise. More than forty nations will be represented by official delegates, and the conference will have a considerable social and scientific importance. Three questions are to be discussed at the conference: (1) prophylaxis of tuberculosis in children before and during school age; (2) prophylaxis of tuberculosis in the home by visiting nurses, and (3) the work of the tuberculous during and after treatment. Professor Calmette will hold a conference on the problems of immunity in tuberculosis. At the termination of the conference, visits will be made to all the principal antituberculosis institutions of the country.

VIENNA

(From Our Regular Correspondent)

April 29, 1922.

Atypical Cases of Sporotrichosis in the Present Epidemic

In the last year and a half, a considerable number of cases of sporotrichosis have been reported in Vienna, and lately a direct epidemic of persons affected by this microsporon has been noted. The disease was seen for the first time in this city in 1910, by Schrameck and Stein, and extensive prophylactic measures had to be adopted to check its spread. The new outbreak is no doubt due to the return of children from abroad after a prolonged stay in infected districts. In a lecture dealing with this disease, Professor Arzt presented recently to the Vienna Dermatologic Society a number of patients who showed atypical conditions. The diagnosis of microsporon could be proved by microscope and cultures, but the clinical appearance resembled closely that of herpes tonsurans. The patients had an efflorescence on the head or the body, with scales or marked inflammatory changes, and in three instances the disease was combined with a general exanthem on the body, the first cases of this complication to be noted in Austria. The highly infectious nature of the disease was plainly demonstrated by its spread in a family or among friends, and the lecturer turned the attention of the practitioners to the importance of arriving at a diagnosis before the disease had taken a firm hold. Roentgen-ray treatment, as well as intravenous injections of hexamethylenamin, proved very effective in many cases.

Fight Against Venereal Disease by Moving Pictures

The society for prevention of sexual disease has taken a bold step to spread information among the people as to the nature of venereal diseases and the havoc wrought by them in the human body, hoping thus to prevent a large amount of unnecessary suffering. With the aid of the board of health, a series of films was taken in the outpatient department of a clinic for dermatology and venereal diseases showing the initial stages of gonorrhea in both the male and the female, and the bacteriologic findings in these cases. The conditions produced in both sexes by chronic gonorrhea are shown in another series of films obtained from surgical and gynecologic clinics; also the results of appropriate treatment in the acute and chronic stage.

In a similar manner, excellent films of syphilitic conditions were obtained, showing the initial lesions, their chief localizations, the secondary stages and the destruction produced by gummas in the various organs. The conditions in neurosyphilis or metasyphilis, general paresis and tabes dorsalis are illustrated by films taken in the lunatic asylum, and now and then in addressing an audience the fact is emphasized that the only means of preventing all the fearful consequences of disease is energetic and early treatment by competent physicians, not by quacks; nor should the advice of friends be followed. The whole series of films is now being produced in Vienna in a number of cinemas, men and women being admitted separately. It must be stated that these exhibitions are in no way indecent, but are purely instructive, being the modern scientific method of spreading useful knowledge, chiefly intended for the males and females of the ages when exposure is most common. A committee of experts and teachers was asked to give an opinion on the advisability of showing these films to the more advanced college classes and the university students, and it is noteworthy that all agreed that this would be very desirable.

Graduate Medical Work in Vienna in 1921

The Vienna medical faculty publishes a short report on the graduate classes conducted at the university last year, and we learn that there were four groups of classes, covering the entire scope of medical art: (1) courses lasting four weeks at least, repeated every other month, and open only to Austrian physicians; (2) monthly classes on selected topics, to be held only if a sufficient number of physicians applied; (3) the ordinary lectures at the university, open to all matriculated students of the university, and (4) international graduate lectures, presented in February, June, September and December. The graduate lectures, lasting twelve days each, were given by clinicians both on theory and on practical work, by privatdozents and assistants, and care was taken that each man lectured on the subject which covered his special domain, thus insuring the most modern instruction. In February, the subjects selected were progressive materia medica and the border cases; in June, progress in surgery, orthopedics and gynecology; in September (chiefly country practitioners were instructed) the latest achievements in medicine, and in December, courses in dermosyphilology, otorhinolaryngology and ophthalmology. These international classes were a happy idea, as shown by the attendance of about 170 physicians from other countries (Poland, Russia, Czechoslovakia, Japan, Roumania, United States, Switzerland, Holland and other states). They will be repeated in 1922. The February class on diseases of the stomach and intestines has already convened, with even more success than last year.

The "Housing Out" of Children in 1921

When the foreign relief missions working in this city instituted the sending of underfed children to foreign places as guests for a few months in order that they might be properly fed (this was in July, 1919), the results were so excellent that the organization built up at that time was continued. Further, it was nationalized, i. e., each mission took into its own hands the matter of obtaining in its own country the necessary accommodation for the children. Thus, in 1920, no less than 123,520 children between 7 and 14 years were temporarily "expatriated." On their return their condition as regards weight and health was compared with their original condition. A gain in weight up to 30 per cent. was noted in quite a few, while an increase of from 12 to 15 per cent. of the original weight was nothing unusual.

In 1921 conditions of life having improved meanwhile in this country, in Vienna chiefly, the number of children sent out was fewer, 42,705. While in 1920, Holland and Switzerland each took over 30,000 children; in 1921, Holland was visited by only 15,000, and Switzerland by only 4,400. Gradually this system of boarding the children out is being abolished, for instance, only thirty-two children were sent to England last month, against 1,400 last year; 1,420 to Sweden, against 7,450, and 226 to Italy, against 5,566. With the end of the first half of 1922, this will be done away with altogether. It must be stated that the method proved most beneficial in restoring the half-starved, underdeveloped and sickly looking offspring of the middle classes, who were the chief sufferers, to the comparatively well looking, bright, fairly normally developed youngsters, who can be seen now in the schools and streets. The small percentage of underfed and undersized children still encountered in schools is partly due to irreparable chronic disablement caused by the privations of the first years of life during war time.

Proposed Legislation on Prohibition of Marriage of Diseased Persons

An act has been introduced in the national assembly by two political parties, dealing with the prohibition of marriage of persons suffering from hereditary or infectious disease. The chief article runs:

> The government states that any person desiring to marry must produce a certificate of health, signed by an officer of public health. A marriage between persons of whom one or both suffer from special hereditary conditions or incurable infectious disease or irreparable bodily faults shall not be permitted.

The reasons for seeking legislative interference with this hitherto purely private act are given as follows: Sexual disease, alcoholism and tuberculosis are very widespread now in this country. High infant mortality and sterility are menacing the regeneration of the population. The procreation of children must be regarded as a duty toward the community; therefore, only healthy offspring should be aimed at or permitted. The act puts it in a very drastic way: 'Father Alcohol and his children, Sexual Disease, Tuberculosis and Psychic Disease cooperate to destroy the health of the people and thus ruin their future prospects." The present government is not strong enough to carry the bill through, but it is hoped that, with the example set by the magistrates of Vienna, who, prompted by similar aims, have instituted a facultative marriage examination free from compulsion, public opinion will enable putting the scheme into action within a reasonable time.

Appearance of Scurvy and Rabies in Vienna

At the Vienna Medical Society, Professor Knöpfelmacher recently presented six children, all of whom showed distinct evidence of scurvy. In three cases, the attack was so severe that the patients were unable to walk. All the patients came from one institution. An investigation revealed the fact that the food in that institute was deficient in its vitamin contents; i. e., it was lacking in green vegetables, in raw fruits and in meat. The bill of fare handed out to the children consisted chiefly of tinned milk, bread, rice and starchy food, with hardly any vegetables or meat. The lack of potatoes especially was felt most keenly by all public feeding organizations and the necessity of introducing vitamin-containing articles into the regular menu of all institutions intended for mass feeding-schools, war kitchens, prisons, hospitals or convalescent homes, was emphasized by numerous men. In fact, the Medical Society of Vienna has urged the board of commerce to permit the hitherto forbidden import of lemons and oranges for this reason, a request which was immediately granted.

Quite a number of persons have applied for treatment against rabies within the last few weeks. It appeared that a stray wolf-dog attacked a large number of persons and other dogs and had infected them before he could be killed. Most of the injured persons applied for treatment after learning the nature of the disease, but numerous dogs which had been bitten remained undiscovered and proved a new source of scattering the disease. Thus, a rapidly increasing number of cases were reported, and public warnings had to be issued in the daily papers. All persons coming in contact with dogs, cats, horses and cattle are instructed to be on the lookout for such a dangerous condition among the animals, and free treatment is given to all persons and animals either manifestly infected or suspected. In this country we have a diagnostic laboratory in the veterinary college in Vienna and a special therapeutic institute for prophylactic vaccination against rabies, owned by the government.

BERLIN

(From Our Regular Correspondent)

April 22, 1922.

Hypnosis in Relation to Murder

In a work entitled "Hypnotismus und Medizin," Loewenfeld, the neurologist , of Munich, discusses the forensic importance of hypnosis, and deals especially with the question whether hypnotized persons may commit murder. Hypnotized persons are sometimes induced, while in the hypnotic state, to make murderous attacks on persons designated—imaginary weapons, such as a ruler or a penholder, being handed to them to use as a dagger, or they may be given unloaded firearms with which to execute the suggested crime. While persons so hypnotized will, at times, carry out the suggested acts, it has been observed that in the majority of instances hypnotized persons are able successfully to resist not only suggestions of a criminal character but also harmless suggestions that outrage their feelings and principles or are opposed to their best interests. Loewenfeld does not ascribe to hypnotic suggestion the power that many assign to it—a power that reduces the hypnotized subject to a mere tool of the hypnotist. Ethical principles of a high order afford active protection against criminal, immoral and improper suggestions of all kinds. On the other hand, he admits that mentally and, more particularly, morally inferior persons do not possess the power of inhibition necessary to resist criminal suggestions. Experimental proof that a subject can be hypnotized against his will is furnished by Dr. Costa in Number 11 of the current volume of the *Deutsche medizinische Wochenschrift.* He put his brother, aged 27, against his will, into a deep hypnotic sleep. The young man had, it seems, allowed himself to be hypnotized, but had, unknown to Costa, entertained the purpose of only seeming to be hypnotized, intending, when the proper time came, to throw off the mask. In spite of this resolve, Costa succeeded in bringing about a deep hypnotic sleep. Loewenfeld regards suggestion made to a person in a waking condition as vastly more important, from the juristical point of view, than hypnotic suggestion. Not only crimes but also perjurious statements made by witnesses in court may be inspired by suggestion made to subjects in a waking condition, whereby it becomes extremely difficult to ascertain the truth.

Hamburg's Vital Statistics for 1921

MARRIAGES

The total number of marriages entered into in Hamburg in 1921 was 13,709, which is 2,459 less than in the preceding year, and 659 less than in 1919. In spite of this decrease, the number was still almost 50 per cent. higher than for the year preceding the outbreak of the war (9,362).

BIRTHS

The number of births shows a marked decrease. The total number of births for 1921, including the stillborn, was 20,280, a decrease of 2,043 from the previous year's record, and a decrease of 3,957 from the 1913 record. The number of children per thousand of population was 21.25 for 1920 and 18.59 for 1921, a decrease of 2.66. As compared with the years 1904 to 1913 (25.20), the record for 1921 is 6.61 lower, and when compared with the fifty year period from 1872 to 1921 it is 9.38 lower. In 1917, only 31.19 per cent. of the mothers were primiparas; in 1921 there was 52.73 per cent. In 1920, the proportion of primiparas was about the same. The proportion of secundiparas was somewhat higher than the previous years and corresponded very closely with the proportion for 1917. The number of tertiparas, quadriparas, and so on, equaled, in 1917, 43.40 per cent.; in 1921, only 22.48 per cent. One mother gave birth in 1921 to her twentieth child; two mothers gave birth to the eighteenth, two to the seventeenth and two to the sixteenth child. The highest number of children born of one mother so far recorded was twenty-one (statistics of 1917).

DEATHS

The deaths also showed a marked reduction. There were 13,182 deaths in 1921, as against 14,681 in 1920 and 13,812 in 1913. The mortality rate per thousand of population was 12.08, which is the lowest rate recorded for Hamburg. It was 1.90 below the rate for the previous year; 2.60 below the average rate for the decade preceding the war, from 1904 to 1913, and 6.14 below the average rate for the last fifty years, 1872 to 1921. The infant mortality rate also showed a marked decrease. The mortality rate per thousand infants born living reached the lowest level that has ever been observed. It was only 91.12 as compared with 107.70 the previous year, 147.69 as the average for the ten year period from 1904 to 1913, and 184.47, the average rate for the last fifty years. The percentage of deaths among unmarried persons showed a marked decrease, while a considerable increase was noted among the married, the divorced and the widowed. There were high percentages of mortality from cancer and diseases of the respiratory and circulatory organs, as compared with the records for the period from 1909 to 1913, but low percentages of mortality from contagious diseases and from gastric and intestinal affections. The number of persons dying from tuberculosis was fully 10 per cent. less than in the period from 1909 to 1913.

EXCESS OF BIRTHS OVER DEATHS

In the years just preceding the war, a reduction in the natural increase of population was already beginning to manifest itself, and the excess of births over deaths showed a decrease almost every year. For the five year period from 1906 to 1910 the excess averaged 10.2 per thousand of population; in 1913 it had dropped to 8.81. During the war the excess of births over deaths was changed, from the end of 1915 on, into an excess of deaths over births, which reached its apex in October, 1918, 23.33 per thousand of population. From about the middle of 1919, the excess of deaths was again changed into an excess of births, being exceptionally high in the fall. During 1920, there was an excess of births during every month of the year except February, and in 1921 there was likewise an excess of births for every month except December. The excess of deaths over births for these two months is doubtless traceable to the increased mortality due to the epidemic of influenza. The average excess of births over deaths per thousand of population was 6.55 in 1920 and 5.78 in 1921.

Marriages

William P. McCrossin, Jr., to Miss Leonora Marie Hassinger, both of Birmingham, Ala., April 26.

Daniel B. Coleman to Miss Mary Louise Grim, both of Wellesley, Mass., at New York City, April 27.

Carrol Conway Turner to Miss Marguerite Rebecca Randolph, both of Memphis, Tenn., recently.

Rex Edward Van Duzen, Dallas, Texas, to Miss Barbara Shaw of Galveston, Texas, recently.

Earle Paul Knotts, Orangeburg, S. C., to Miss Marjorie Todd of Denton, Md., May 3.

Samuel B. Thomas to Miss Evelyn Bretzler, both of Waynesboro, Pa., March 27.

M. Arista Bingley, Chicago, to Miss Annie Hocking of Burnley, England, April 28.

Richard K. Allison to Miss Susan Fitzsimmons, both of Columbia, S. C., May 1.

Deaths

Samuel Lawrence Jepson ⊕ Wheeling, W. Va.; Medical College of Ohio, Cincinnati, 1868; died suddenly, May 2, from cerebral hemorrhage. Dr. Jepson was born in St. Clairsville, Ohio, April 17, 1842; he received his A.M. from Washington and Jefferson College, Washington, Pa., 1865, and his Sc.D. from the University of Pittsburgh in 1907. He studied in Edinburgh, London and Vienna; served as secretary for the U. S. Examining Surgeons and as acting assistant surgeon of the U. S. Marine Hospital Service. For eleven years he was health officer of Wheeling, for eight years state health commissioner, member of the city council, and member, and at one time president, of the board of education. Dr. Jepson was secretary of the board of trustees of the Washington and Jefferson College and of the Wheeling Female College; for three years secretary, and in 1887 president, of the West Virginia State Medical Association; vice president of the Federation of State Medical Examining Boards and of the Conference of Executive Officers of the United States and Provincial Boards of Health in 1916; formerly vice president of the American Public Health Association, and editor of the *West Virginia Medical Journal*.

Charles Rumford Walker ⊕ Concord, N. H.; Medical School of Harvard University, Boston, 1876; bank president; formerly surgeon to the Margaret Pillsbury General, and New Hampshire Memorial hospitals; member of the New Hampshire Surgical Society; at one time member of the state legislature; instigator of the Timothy and Abigail Walker lectures; died, April 22, aged 69.

Laurentine Rouchel, Croghan, N. Y.; University of Buffalo Department of Medicine, 1881; expended most of her income for the establishment and maintenance of the Albany Hospital for Incurables; member of the Medical Society of the State of New York; formerly served at Dr. Elizabeth Bielby's orphanages and dispensary, Lahore, India; died, April 24, aged 76.

Christopher C. Hersman ⊕ Pittsburgh; College of Physicians and Surgeons, Baltimore, 1884; also a pharmacist; formerly on the staffs of the South Side, St. Francis and St. Joseph's hospitals; at one time lecturer on mental and nervous diseases at the University of Pittsburgh; honorary member of the Academy of Science and Arts; died, April 30, aged 68.

James Metcalfe Patterson Chalmers, Vancouver, Wash.; Bellevue Hospital Medical College, New York City, 1888; formerly lecturer on general pathology, University of Oregon Medical Department, Portland; member of the state legislature; formerly served as state medical examiner and city and county health officer; died, April 14, aged 57.

Theodore H. Jones, West Hickory, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1905; formerly a telegraph operator; member of the Medical Society of the State of Pennsylvania; died, April 22, aged 43, at the Buffalo Homeopathic Hospital, Buffalo, following an operation.

Walton P. Allen, Dayton, Tenn.; Medical Department, University of Tennessee, Memphis, 1908; member of the Tennessee State Medical Association; shot his son, wounded his wife, and then committed suicide by shooting himself, while temporarily insane, April 30, aged 39.

Adam Miller Robinhold, Hamburg, Pa.; Jefferson Medical College, Philadelphia, 1913; member of Medical Society of the State of Pennsylvania; served in France during the World War with the rank of captain; died, May 3, at Reading, aged 33, from chronic nephritis.

Robert L. Fox, Brunswick, Ga.; Medical College of the State of South Carolina, Charleston, 1893; Columbia University College of Physicians and Surgeons, New York City, 1896; member of the Medical Association of Georgia; died suddenly, April 27, aged 48.

Marion Joseph Bancroft ⊕ Mobile, Ala.; Medical Department of the University of Alabama, Tuscaloosa, Ala., 1899; formerly associate professor of obstetrics at the University of Alabama School of Medicine; died suddenly, April 20, aged 44, from heart disease.

Walter Mangum Davis, Fairoaks, Calif.; Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1890; died, May 1, aged 61, at the St. Francis' Hospital, San Francisco, from pulmonary embolism.

Ambrose Augustine Keeley, Fall River, Mass.; College of Physicians and Surgeons, Baltimore, 1905; tuberculosis diagnostitian to the board of health; chief of staff at Bay View Hospital; died, April 5, aged 51, from dilatation of the heart.

George Washington Lowry, Hastings, Mich.; University of Michigan Medical School, Ann Arbor, 1874; member of the Michigan State Medical Society; formerly president of the Barry County Medical Society; died recently, aged 72.

Hugh D. Rodman, Bardstown, Ky.; Medical Department, University of Louisville, 1871; member of the Kentucky State Medical Society; formerly health officer of Nelson County; died, May 4, aged 79; following a long illness.

Lemuel Tibbets ⊕ Rockford, Ill.; Bellevue Hospital Medical College, New York City, 1867; formerly president of the board of pension examiners; at one time on the staff of the St. Anthony's Hospital; died, May 1, aged 79.

Mary Blanch White, Chicago; University of Michigan Medical School, Ann Arbor, 1898; member of the Illinois State Medical Society; died, May 11, at the Evangelical Deaconess Hospital, from acute endocarditis.

Mary Edna Butterworth, Morristown, N. J.; New York Medical College and Hospital for Women, New York City, 1902; formerly resident physician in the Laura Franklin Hospital; died, April 30, aged 43.

Arthur Richard Jarrett, Brooklyn; Long Island College Hospital, Brooklyn, 1879; veteran of the Spanish-American and World wars; for six years a member of the board of education; died, May 2, aged 67.

Sherman Mills, Macks Creek, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, 1903; member of the Missouri State Medical Association; died suddenly, April 28, at Picher, Okla., aged 50.

Hugh Montgomery Bailey, Bushnell, Neb.; Cincinnati College of Medicine and Surgery, Cincinnati, 1891; member of the Nebraska State Medical Association; died, April 13, aged 64, from cerebral hemorrhage.

John H. Egan, Philadelphia; Medico-Chirurgical College of Philadelphia, 1892; member of the Medical Society of Pennsylvania; police surgeon of Philadelphia; died, April 26, aged 49, from heart disease.

Sarah A. Clock, New York City; New York Medical College and Hospital for Women, New York City, 1882; for eleven years a medical missionary in Persia; died recently at Teheran, aged 65.

James A. Hunter, Dallas, Texas; L.R.C.P. and L.R.C.S., Edinburgh, Scotland, 1881; University of Brussels, Belgium, 1883; formerly county and city health officer of Dallas; died, April 26, aged 78.

George Manly Huckabay ⊕ Shreveport, La.; Memphis Hospital Medical College, Memphis, Tenn., 1900; died, April 10, aged 48, at the Touro Infirmary, New Orleans, from traumatic pneumonia.

Thomas B. Cook, Rayville, Mo.; Medical Department University of Louisville, Louisville, Ky., 1883; member of the Missouri State Medical Association; died, April 30, aged 68, from pneumonia.

David Posey Brown, Trenton, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1901; formerly president of the William McKinley Memorial Hospital; died, April 23, aged 44.

Albert B. Randall, Liverpool, N. Y.; Medical Department of University of the City of New York, 1879; member of the Medical Society of the State of New York; died, April 18, aged 67.

Thomas Alexander Dewar, Detroit; Medical Faculty of McGill University, Montreal, Que., Canada, 1893; member of the Michigan State Medical Society; died, April 4, aged 70.

R. Eugene Taylor, Lancaster, Texas; Medical Department, University of Tennessee, Memphis, 1883; formerly county health officer of Brewster County; died, April 21, aged 62.

Robert Lee Blake, Wilton, Va.; Baltimore Medical College, Baltimore, 1905; member of the Medical and Chirurgical Faculty of Maryland; died, April 21, at Baltimore, aged 47.

Charles H. Barron, Rocky Mount, N. C.; University of Maryland School of Medicine, and the College of Physicians and Surgeons, Baltimore, 1868; died, March 17, aged 82.

Horton Frizell, Deasonville, Miss.; University of Nashville Medical Department, 1890; died, April 28, aged 54, at the Baptist Hospital, Jackson, following an operation.

R. R. Ranspot, Lone Oak, Texas; Southwestern University Medical College, Dallas, Texas, 1907; member of the State Medical Association of Texas; died, April 26, aged 49.

⊕ Indicates "Fellow" of the American Medical Association.

Duncan Eugene Davis, Springfield, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1888; died, May 1, aged 63; from acute indigestion.

Harry R. Layton, Leon, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1874; member of the Iowa State Medical Society; died, May 2, aged 68.

George B. M. Andre, Wheelersburg, Ohio; Miami Medical College, Cincinnati, 1897; member of the Ohio State Medical Association; died, April 23, aged 57.

George W. H. Richardson, New York City; New York Homeopathic Medical College, New York City, 1873; died, April 19, aged 71, from pneumonia.

John Joseph Murphy ⊕ Lima, Ohio; University of Michigan Medical School, Ann Arbor, 1881; died, April 13, aged 61, from perforation of the intestines.

Nehemiah Ayer, Woodstock, N. B.; Medical Faculty of McGill University, Montreal, Que., Canada, 1880; died recently, aged 80, from influenza.

Benjamin G. Wilson ⊕ Clarion, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1902; died, April 26, aged 45, from dropsy.

Eugene Roger Albaugh, Glenville, Pa.; College of Physicians and Surgeons, Baltimore, 1875; died, April 22, aged 67, from chronic nephritis.

William B. Gregg, Decatur, Neb.; Cleveland Medical College, Cleveland, 1869; died, February 14, aged 79; from cerebral hemorrhage.

Felix Nacht, New York City; New York Homepathic Medical College and Flower Hospital, New York City, 1916; died, April 24, aged 39.

Francis J. Redmond ⊕ Fillmore, N. Y.; Eclectic Medical Institute, Cincinnati, 1891; died, March 28, aged 55, from diabetes mellitus.

Asahel E. Briggs, Sacramento, Calif.; College of Physicians and Surgeons, Chicago, 1896; died, April 10, aged 70, from pneumonia.

John Nelson Barnes, Long Beach, Calif.; Bennett Medical College, Chicago, 1914; died suddenly, May 2, aged 42, from heart disease.

Francis J. Fluno, Oakland, Calif.; Chicago Homeopathic Medical College, Chicago, 1885; died, April 23, aged 76, from myocarditis.

Gunder Theodoric Trommald ⊕ Portland, Ore.; Rush Medical College, Chicago, 1901; died, March 28, aged 52, from myocarditis.

Augustus H. Guernsey, Glendale, Calif.; Rush Medical College, Chicago, 1870; died, April 22, aged 86, from cerebral hemorrhage.

John A. Dawson ⊕ Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1877; died, May 10, aged 68, from paralysis.

Ulamor Allen ⊕ Jersey City, N. J.; Medical Department of the University of the City of New York, 1880; died, April 21, aged 67.

Daniel W. Montgomery, Concord, Texas; St. Louis College of Physicians and Surgeons, St. Louis, 1891; died, March 22, aged 72.

Calvin A. Case, Pleasanton, Calif.; University of Michigan Medical School, Ann Arbor, 1870; died suddenly, April 26, aged 76.

John B. Duff, Cedar Creek, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; died, March 21, aged 77.

John W. Bowers, Barcamp, Ark. (licensed, Arkansas, 1903); died, February 18, aged 60, from cerebral hemorrhage.

Edwin M. McGee, Ceres, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; died, April 25, aged 66.

John Parker ⊕ Salinas, Calif.; Medical College of the Pacific, San Francisco, 1874; died, April 30, aged 77.

Smith Baker, Camden, N. Y.; University of Michigan Medical School, Ann Arbor, 1871; died, April 23, aged 71.

L. M. Dampeer, Sr., Crystal Springs, Miss. (years of practice); Civil War veteran; died, April 30, aged 91.

Charles Joseph Alger, Ideal, S. D.; Colorado School of Medicine, Denver, 1896; died in March, aged 64.

Charles T. Richardson, Omaha, Medical College of Virginia, Richmond, 1863; died, April 22, aged 83.

Charles Trost, Brooklyn (licensed, New York, 1895); died, April 29, aged 73.

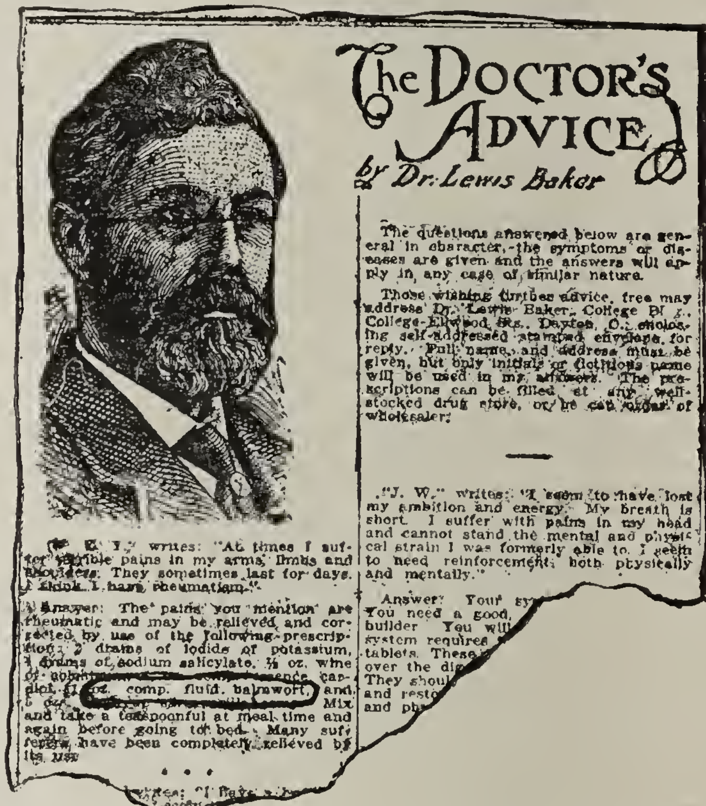
The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Compound Fluid Balmwort.—The Blackburn Products Co., Dayton, Ohio., shipped in August, 1918, a quantity of "Compound Fluid Balmwort" which was misbranded. This concern is one of those that has advertised by the "prescription fake" method in which one Lewis Baker conducts a fake "health column" recommending to hypothetical inquirers some of the Blackburn Products Company's nostrums. The federal authorities reported that analysis of a sample of Compound Fluid Balmwort showed the stuff to consist essentially of plant extractives, including bearberry, a large proportion of sodium acetate, alcohol and water. It was claimed on or in the trade package that this preparation was effective as a treatment, remedy and cure for catarrh, rheumatism, dropsy, gout, diseases of the kidneys, bladder and urinary tract, impure blood, pimples, carbuncles, canker and ringworm, "when, in truth and in fact, it was not." These claims were, therefore, claimed false and fraudulent. When the Blackburn Products Co. was given an opportunity to defend the claims it entered a plea of guilty and in February, 1921, the court imposed a fine of $25.00 and costs.—[*Notice of Judgment No. 9751; issued Jan. 11, 1922.*]



The Doctor's Advice

by Dr. Lewis Baker

The questions answered below are general in character, the symptoms or diseases are given and the answers will apply in any case of similar nature.

Those wishing further advice, free may address Dr. Lewis Baker, College Bl[illegible], College-Elwood Sts., Dayton, O., enclosing self-addressed stamped envelope for reply. Full name and address must be given, but only initials or fictitious name will be used in my answers. The prescriptions can be filled at any well-stocked drug store, or he can order of wholesaler.

"E. T." writes: "At times I suffer terrible pains in my arms, limbs and shoulders. They sometimes last for days. I think I have rheumatism."

Answer: The pains you mention are rheumatic and may be relieved and corrected by use of the following prescription: 2 drams of iodide of potassium, [illegible] drams of sodium salicylate, ½ oz. wine of [illegible] essence cardiol, [illegible] oz. comp. fluid. balmwort, and [illegible] oz. [illegible]. Mix and take a teaspoonful at meal time and again before going to bed. Many sufferers have been completely relieved by its use.

• • •

[illegible] writes: "I have [illegible]

"J. W." writes: "I seem to have lost my ambition and energy. My breath is short. I suffer with pains in my head and cannot stand the mental and physical strain I was formerly able to. I seem to need reinforcement, both physically and mentally."

Answer: Your sy
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Whitlock's Products.—The Whitlock Herb Medicine Co., Inc., of Winchester, Va., shipped in October, 1918, and February, 1919, a quantity of "Whitlock's Child's Laxative," "Whitlock's Cough Sirup," "Whitlock's Cathartic Sirup," "Whitlock's Blood Pills," "Whitlock's Nervine Pills," "Whitlock's Female Cordial," "Whitlock's Kidney and Gravel Medicine," "Red Indian Liniment," "Whitlock's Worm Cordial," "Whitlock's Nerve Pills," "Whitlock's Rheumatic Pills" and "Whitlock's Kidney Pills." All of these were declared misbranded.

Whitlock's Child's Laxative was analyzed by the federal chemists and reported to contain senna, Rochelle salt, sodium salicylate, soda, alcohol and water. It was declared misbranded because it contained on the trade package the claims

"Alcohol 3 per cent." and "a safe vegetable composition." As a matter of fact, the stuff contained 8 per cent. alcohol and was not wholly a vegetable composition but was composed in part of mineral matter.

Whitlock's Cough Sirup was found to consist of plant extractives, licorice, sugar, alcohol and water. This was declared misbranded because the label bore the claim "Alcohol, 30 per cent." when, as a matter of fact, it only contained 15.6 per cent. It was falsely and fraudulently claimed for the cough sirup that it was effective as a treatment, remedy and cure for bronchitis, whooping cough, croup, etc.

Whitlock's Cathartic Sirup was found to contain extracts of plants, including jalap, senna, fennel and peppermint, sugar, alcohol and water. It was falsely and misleadingly labeled "Alcohol, 21 per cent." when, as a matter of fact, it contained only 17.8 per cent. Further it was falsely and fraudulently labeled as an effective treatment, remedy and cure for dyspepsia, biliousness, sick headache, indigestion, gastritis, enteritis, etc.

Whitlock's Blood Pills were found by the federal chemists to contain plant material, including red pepper, aloes, colocynth and scammony. They were falsely and fraudulently labeled as an effective remedy and cure for liver complaints, syphilis, carbuncles, pimples, sores and other affections of the blood.

Whitlock's Nervine Pills were found by the federal chemists to contain plant material, including asafetida, valerian, licorice and an ammonium compound. They were falsely and fraudulently labeled as an effective treatment and cure for insomnia, low spirits, all nervous affections, mental depression, irritability and general debility.

Whitlock's Female Cordial was reported by the federal chemists to contain extracts of plants, including senna and jalap, alcohol, sugar and water. It was falsely and misleadingly labeled "Alcohol 23 per cent.," when, as a matter of fact, it contained less than 14 per cent. It was falsely and fraudulently labeled as an effective treatment, remedy and cure for female weakness, painful, suppressed and profuse menstruation and for all other diseases peculiar to females.

Whitlock's Kidney and Gravel Medicine was found to contain volatile oils, including oil of sassafras, anise and turpentine and alcohol. It was labeled "Alcohol, 60 per cent." but was found, in fact, to contain over 74 per cent. of alcohol. It was falsely and fraudulently recommended as an effective treatment, remedy and cure for all diseases arising from disordered kidneys.

Red Indian Liniment was reported by the Bureau of Chemistry to contain oil of turpentine, acetic acid, ammonium chlorid, alcohol and water. It was falsely and fraudulently recommended as an effective treatment and cure for rheumatism, neuralgia, sprains, burns, pleurisy, diarrhea and all painful affections.

Whitlock's Worm Cordial was found by the federal chemists to contain plant extractives including spigelia and senna, glycerin, a small amount of salicylic acid, sugar, alcohol and water, flavored with methyl salicylate. This was declared misbranded in that the labels failed to bear a statement of the quantity and proportion of alcohol.

Whitlock's Nerve Pills were sugar-coated and found by the federal chemists to contain colchicin, asafetida and extract of hops. They were falsely and fraudulently labeled as an effective treatment and cure for vertigo, nervous dyspepsia, nervous headache and other affections of the digestive system.

Whitlock's Rheumatic Pills were reported by the chemists to contain colocynth, jalap and guaiac. They were falsely and fraudulently recommended as an effective treatment and cure for rheumatism in all its forms and stages, neuralgia affections and painful menstruation.

Whitlock's Kidney Pills, according to the federal report, contained copaiba, extract of cubebs, a trace of oil of turpentine and magnesia. They were falsely and fraudulently claimed to be an effective treatment and cure for affections and diseases of the kidneys and bladder.

In April, 1921, the Whitlock Herb Medicine Co. entered a plea of guilty and was fined $170.—[*Notice of Judgment No. 9800; issued Jan. 11, 1922.*]

Correspondence

RELIEF FOR THE TYROLESE

To the Editor:—The surgical clinic, connected with the University of Innsbruck, is in dire straits, in consequence of which many of the inhabitants of the region cannot receive proper surgical care. When it is appreciated that Innsbruck Hospital is the only hospital for civilians in a district of 500,000 inhabitants, the urgency of the sought-for relief will be appreciated. An abstract of a statement recently made by the Chief of the Surgical Clinic is as follows:

> In order to keep the clinic going if possible, the utmost economy must be practiced in the operating rooms and this also causes the greatest injury to the sick people through the insufficient postoperative care and treatment. Through many years of continuous use the supply of instruments for the clinic is almost worn out and needs thorough repairs and the purchase of new supplies. The necessary sum of about 10,000,000 kronen cannot be procured. The proper quantity of sterilized linen is not to be had, and what we have on hand is in such bad condition that asepsis in operating is greatly endangered.
>
> Thread gloves and rubber gloves are lacking, as well as rubber shoes for operating; so that we often do not know, from one operation to another, whether the next one can be carried out successfully or not.
>
> So it is only with the greatest retrenchment which makes operating very difficult, that the clinic can be maintained at all. On account of the lack of linen, alcohol and ether, operations must frequently be postponed. What this means to the patient who must be kept under the nervous strain of awaiting an operation, and the danger to the life of the patient, needs no discussion. It is impossible to see how the clinic can be carried on at all in the future unless fresh supplies of instruments, linen, and so forth, are provided quickly. The poverty of the clinic shows itself most bitterly in the dispensaries; the great number of poor patients who daily visit these must be examined and treated in utterly unsuitable premises, in which the plaster is falling from the walls. Here the deficiency in anesthetics, instruments, bandages and medicines is especially glaring.

Contributions and supplies may be sent directly to the hospital in Innsbruck, or to the undersigned, who will be glad to see that they are properly forwarded. It is hoped that the many Americans who have enjoyed the delightful scenery of the Tyrol in times past and experienced the friendly courtesy of its people will be prompt and generous in their aid. William Campbell Posey, M.D., Philadelphia.

GROWING THE OPIUM POPPY IN THE UNITED STATES

To the Editor:—Certain persons are advocating the total prohibition of opium importations into the United States, contending, as Dr. Carlton Simon, of the New York police, is quoted as saying: "Areas admirably adapted to poppy growing exist in California and elsewhere in America, notably in New Mexico," and he advocates the growing of our total supply of opium as a domestic industry under proper official control.

It is, of course, possible to grow the opium poppy over a fairly wide area; but to produce opium in commercial quantities and of standard quality is quite another matter. It has been tried in both Europe and America, quite unsuccessfully, and the reasons for failure were set forth in the supplement of the *Chemist and Druggist,* April 14, 1906, which gave certain experiences in Australia. These reasons were partly climatic, but also, and of vital importance, the economic fact that it costs vastly more to produce opium in Europe, Australia and America than in Asia Minor, Persia, China, Egypt and India, where labor is very cheap. Even if produced out of its natural habitat, the quality is poor and the acre production small.

Some have the idea that the opium poppy is a natural wildling with a red blossom; but the facts are quite the opposite. The opium poppy is a cultivated plant, requiring rich soil and heavy fertilization, and the blossom is double and somewhat globular, and commonly is pink. Plants that escape from cultivation are of just as much value as tobacco growing along the roadside would be, and commonly die before blossoming.

To produce opium commercially it is necessary to grow the poppy as a biennial, and it fails unless covered with snow all winter, for rather light frosts kill the plant. Then, too, in the second year, the one of production, the summer must be hot, and there must be no rain or heavy dew in June and July, when the crop matures. Spring sowing results in the production of very poor opium. We do not have anywhere in America a climate adapted to the *commercial* production of opium.

Growing the opium poppy is largely a hand labor proposition, and incising the ripening capsules and scraping of the inspissated juice is wholly so. Furthermore, the labor must be skilled and available on an hour's notice, and willing to take 50 cents for a long-hour day. The successful production of opium requires an astonishing amount of fertilizer.

After the crude opium is grown, the processes of handling for the market, including curing, inspecting, assaying and packing, add additional cost; so that, taking everything into consideration, producing opium is a complex proposition, frequently involving crop failure and other disaster. The Orientals handling this trade are skilled men and, even if we could grow the crop here with some assurance of success, we could not compete on either price or quality.

We will not meet the underworld opium, morphin and heroin menace by disrupting the whole opium market by prohibiting all importations, and by growing, or attempting to grow, poor opium at high cost. It must not be forgotten that opium is a drug of proper and legitimate place, and to upset long established standards for the sake of an experiment is not wise. American-grown opium would be an expensive drug—at least six times as high in price as the imported product—and of poor quality at best. This would not be just to medicine or to the sick and injured persons who need narcotic medication.

Thomas S. Blair, M.D., Harrisburg, Pa.
Chief, Bureau of Drug Control, Pennsylvania Department of Health.

Modern Flour.—Flour produced by the roller mill process has poor dietary properties, said Dr. E. V. McCollum in an address before the International Conference of Women Physicians. The roller mill subjects wheat to a series of breaks or blows which crack the kernel into fine particles, but the germ or embryo of the seed being plastic and oily does not grind to a fine paste and is easily sifted out. The germ of the seed has most of the dietary properties of the leaf. It is a cell structure which under appropriate conditions of heat and moisture is capable of developing into a little plant. The bran layer of the seed is rich in mineral salts which are not abundant in that portion which goes into our bolted white flour. We discard the bran layer and the germ layer, and feed them to domestic animals, and keep for ourselves the less nutritious portion. The same is true today in milling corn and rice, and the reason for this unfortunate custom must be charged to civilization. The milling industry is centered in a few large centers where flour is produced in large quantities and stored may be six months before reaching the ultimate consumer. Bolted flour keeps much better than that which contains the seed germs, in which the oil tends to become rancid in warm weather. Formerly country people had their cereal ground at the local mill, took it home, and made it into bread, perhaps the same day.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"DOLD'S REACTION IN DIAGNOSIS OF SYPHILIS"

To the Editor:—Please describe the technic of Dold's serum test for syphilis, mentioned in an abstract (The Journal, April 29, p. 1353).

Herman Watson, M.D., Lakeland, Fla.

Answer.—The Dold test is said to make possible a macroscopic diagnosis of syphilitic blood in from two to four hours. A cholesterinized antigen is used, prepared according to the method of Sachs. It is mixed slowly in an Erlenmeyer flask with physiologic sodium chlorid solution in the proportion of 1 : 10, the result being a fluid slightly opalescent. The blood serum to be used should be clear, although if it is only slightly cloudy the reaction is not affected. The blood serum is inactivated for one-half hour at 55 C.; then 0.4 c.c. is added to 2 c.c. of the antigen and salt solution mixture. For control, 0.4 c.c. of the serum is added to 2 c.c. of physiologic sodium chlorid solution. If the amount of serum available is slight, the proportions of the various agents may be reduced. Every step of the procedure is controlled by positive and negative blood serums so as to obviate, or at least lessen, the possibility of error. If the reaction is positive, the mixture of antigen and serum becomes cloudy, the degree of cloudiness determining the positiveness of the reaction, as in the case of the Wassermann reaction. Within an hour the various mixtures of known positive and negative serums and the controls are compared with the serum being tested. If the latter remains clear, it is negative; if it becomes cloudy, it is positive for syphilis. Dold asserts that 93 per cent. of a large number (600) of serums tested by the Wassermann and Sachs-Georgi tests agreed with his test. The advantages of his test are that no special apparatus is required, and the result can be determined macroscopically in from one to four hours, thus making it available for the general practitioner.

CALORIC VALUES OF COMMON FOODS

To the Editor:—Please tell me how many calories are contained in yolk of egg; white of egg; 1 pint of buttermilk; 1 pint of sweet milk; 1 pound of butter; 1 pound of bread; one five cent bar of chocolate; one ice cream cone; one dish of ice cream; one soda cracker; 1 ounce of oatmeal; 1 ounce of cream; one potato (size of an egg); one slice of bread; one orange; 1 pint of cream; all sugars (1 ounce); one grapefruit.

Joseph Halton, M.D., Sarasota, Fla.

Answer.—The following list gives the caloric value for each hundred grams of certain food articles (100 gm. is equivalent to about 3½ ounces):

Eggs, boiled:	
Yolk	376
Whites	55
Buttermilk	36
Whole milk	72
Skimmed milk	37
Butter	795
Bread:	
Wheat, home made	270
Brown	231
Rye	260
Chocolate	631
Soda cracker	424
Oatmeal	410
Cream	201
Potato, raw	85
Oranges, edible portion	53
Sugar, granulated	410
Ice cream, as ordinarily purchased	189
Grapefruit: Half of the ordinary serving contains about 100 calories	

To obtain caloric value of materials in ordinary quantities, as pounds, cup, bottle, etc., reduce to grams and estimate accordingly.

USE OF LARGE DOSES OF MORPHIN

To the Editor:—According to my recollection, Dr. J. W. Chambers, Baltimore, administered 10 grains of morphin sulphate hypodermically to dogs before giving ether for operations. Am I right or wrong in my recollection that 10 grains can be given?

—, West Virginia.

Answer.—Our correspondent's recollection is no doubt correct. The preferred dose for preliminary anesthesia for the dog is 10 to 20 mg. per kilogram. According to this, an animal weighing 30 kg. would require a dose of 10 grains, or approximately 600 mg. Such dose may, however, safely be given to small dogs as well; for dogs are very tolerant of morphin. The minimal lethal dose for dogs, on hypodermic injection, is generally placed at 0.4 gm. per kilogram. Small dogs weighing 6 or 7 kg. often survive hypodermic injections of as much as 2 gm. (30 grains) of morphin sulphate.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.
Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.
Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.
Georgia: Augusta, May 31-June 2; Atlanta, June 7-9. Sec., Dr. C. T. Nolan, Marietta.
Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.
Louisiana: New Orleans, June 8-10. Sec., Dr. Roy B. Harrison, Hibernia Bank Bldg., New Orleans.
Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.
Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.
Minnesota: Minneapolis, June 6-8. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.
National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.
Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.
New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.
New York: Albany, Buffalo, New York and Syracuse, May 22-25. Asst., Professional Examination, Mr. Herbert J. Hamilton, State Education Bldg., Albany.
North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.
North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.
South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
Tennessee: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.
Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.
Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.
Vermont: Burlington, June 21-23. Sec., Dr. W. Scott May, Underhill.
Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.
Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.
Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

STATE BOARD NUMBER

Syracuse University

Through a clerical error, the percentage of failures for Syracuse University was wrongly given in the Tables A and B on pages 1299 and 1303, respectively. The percentages for the college are correctly given, however, in Table C on page 1304 under line 52.

Osteopaths in Oklahoma

Reference also was made in regard to six osteopaths who "were licensed as physicians" in Oklahoma. They were technically licensed as osteopaths, but the wording of the Practice Act gives them the same privileges as physicians. This was not made clear in the previous report.

Graduates of 1921

For the graduates of 1921 the figures in Table C were not given accurately for several of the colleges. The correct figures for the institutions named are as follows:

Line	Name of College	Number Examined	Number Passed	Number Failed	Per Cent. Failed
3	Coll. of Med. Evan.	17	17	0	0.0
22	Ind.Univ. Sch. of Med.	57	57	0	0.0
23	Univ. of Iowa Coll. of Med.	43	43	0	0.0
28	Johns Hopkins Univ.	55	55	0	0.0
29	Univ. of Md. Coll. of P. & S.	68	65	3	4.4
30	Boston Univ. Sch. of Med.	16	15	1	6.3
31	Coll. of Phys. & Surgs. Boston.	5	4	1	20.0

South Dakota January Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota State Board of Health and Medical Examiners, reports the oral, written and practical examination held at Pierre, Jan. 17-18, 1922. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. One candidate was licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1912)	88.8
Rush Medical College	(1920)	89.9
	(1921)	90.2, 90.5
State University of Iowa College of Med.	(1904)	81.9
	(1919)	87.3, 90.1
John A. Creighton Medical College	(1920)	88
	(1921)	91.7

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
St. Louis University School of Medicine	(1919)	Washington

Miscellany

CLINICAL CHARTS RECOMMENDED BY THE ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE

The Plans for Their Use

ALFRED E. COHN, M.D.
Chairman, Research Committee, Association for the Prevention and Relief of Heart Disease
New York

The Association for the Prevention and Relief of Heart Disease of New York has been impressed by numerous circumstances that it is desirable to accelerate the process of gaining and accumulating information concerning the natural history of heart disease, and especially to learn what is the relation to it of focal infections, tonsillitis, rheumatic fever and other similar diseases. The importance of this inquiry is suggested by: (1) the large number of men during the draft for military service in 1917-1918 who showed evidences of chronic heart disease; (2) the large number of children in the public schools in New York City and elsewhere who seem to be similarly afflicted, and (3) the large and increasing number of deaths from chronic heart disease which occur in the registration area of the United States and in New York City. A number of data, on which certain of these statements are based, are to be found in a recent statement by Emerson.[1]

PLAN FOR THE COLLECTION OF DATA

To obtain information on the factors mentioned and to discover, if possible, the means of preventing the occurrence of these factors, the Association for the Prevention and Relief of Heart Disease, after deliberating almost two years, has evolved a plan. This plan consists, in collaboration with the clinics, or with as many of them as is feasible, in an attempt to collect in a uniform manner data which have a bearing on the important phases of this problem. Obviously, the best method by which this can be done is on charts arranged so as to provide for satisfactory records and for their subsequent statistical treatment. To be assured that the proposed technic of collecting information is practicable, various forms were constructed and, after preliminary trial in the clinics, a standard was adopted. The Association for the Prevention and Relief of Heart Disease is now able to supply these charts to such institutions as are willing to cooperate with it in its plans and purposes.[2]

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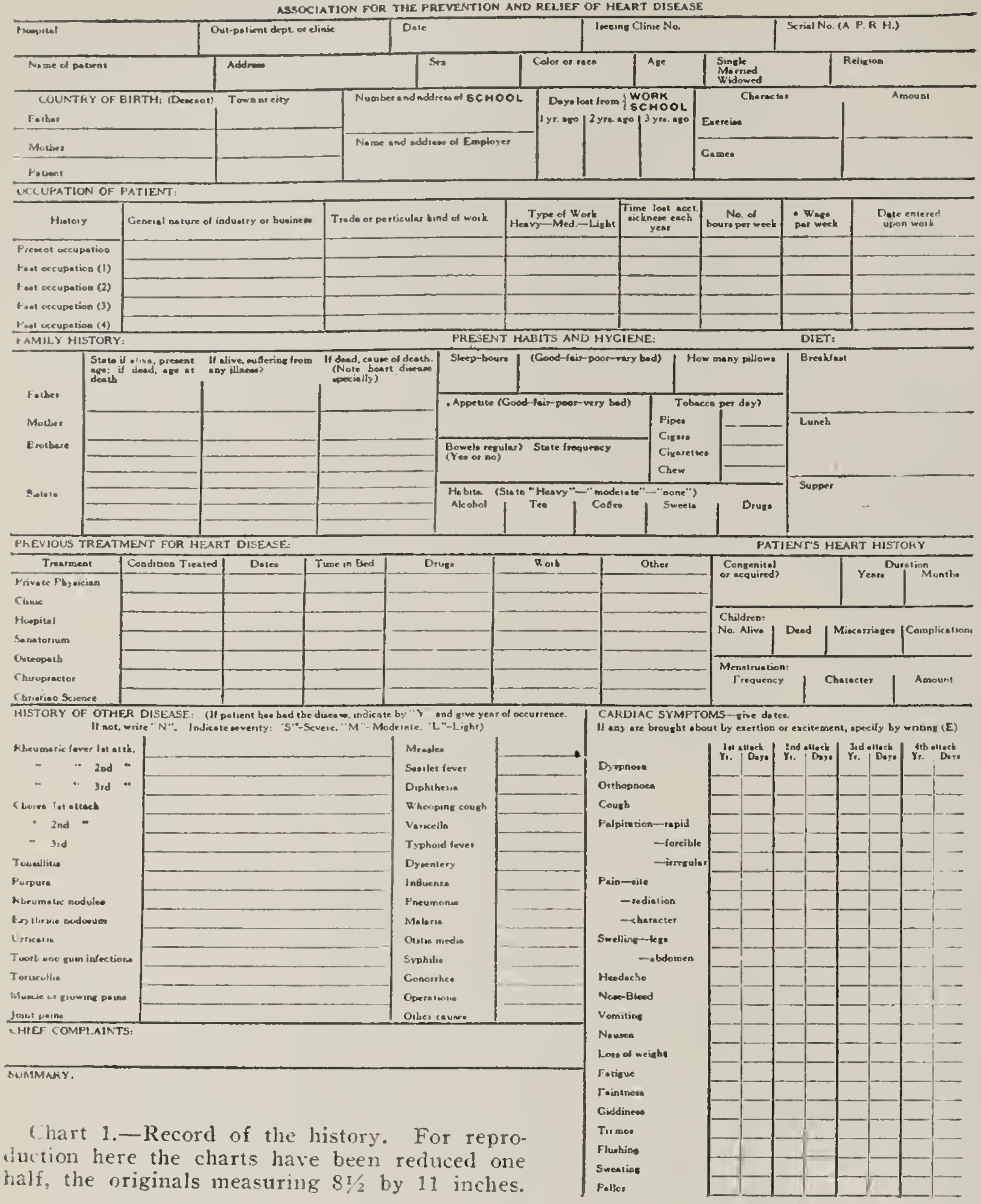
[1] Emerson, Haven: Shattuck Lecture, Boston M. & S. J. **184**: 587 (June 9) 1921.

[2] The Association for the Prevention and Relief of Heart Disease is prepared to supply these charts at the cost of production. Attention need scarcely be directed to the fact that the labor of their construction was great and involved a not inconsiderable initial cost. The Association will gladly supply single copies free to those who are interested.



CARDIAC HISTORY—First Record 1
ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE

Hospital | Out-patient dept. or clinic | Date | Issuing Clinic No. | Serial No. (A. P. R. H.)
Name of patient | Address | Sex | Color or race | Age | Single Married Widowed | Religion
COUNTRY OF BIRTH: (Descent) | Town or city | Number and address of SCHOOL | Days lost from WORK / SCHOOL: 1 yr. ago | 2 yrs. ago | 3 yrs. ago | Character | Amount
Father
Mother
Patient
Name and address of Employer
Exercise
Games

OCCUPATION OF PATIENT:
History | General nature of industry or business | Trade or particular kind of work | Type of Work Heavy—Med.—Light | Time lost acct. sickness each year | No. of hours per week | Wage per week | Date entered upon work
Present occupation
Past occupation (1)
Past occupation (2)
Past occupation (3)
Past occupation (4)

FAMILY HISTORY: | State if alive, present age; if dead, age at death | If alive, suffering from any illness? | If dead, cause of death. (Note heart disease specially)
Father
Mother
Brothers
Sisters

PRESENT HABITS AND HYGIENE:
Sleep—hours | (Good—fair—poor—very bad) | How many pillows
Appetite (Good—fair—poor—very bad) | Tobacco per day? Pipes, Cigars, Cigarettes, Chew
Bowels regular? (Yes or no) | State frequency
Habits. (State "Heavy"—"moderate"—"none") Alcohol | Tea | Coffee | Sweets | Drugs

DIET:
Breakfast
Lunch
Supper

PREVIOUS TREATMENT FOR HEART DISEASE:
Treatment | Condition Treated | Dates | Time in Bed | Drugs | Work | Other
Private Physician
Clinic
Hospital
Sanatorium
Osteopath
Chiropractor
Christian Science

PATIENT'S HEART HISTORY
Congenital or acquired? | Duration Years | Months
Children: No. Alive | Dead | Miscarriages | Complications
Menstruation: Frequency | Character | Amount

HISTORY OF OTHER DISEASE: (If patient has had the disease, indicate by "Y" and give year of occurrence. If not, write "N". Indicate severity: "S"-Severe, "M"-Moderate, "L"-Light)
Rheumatic fever 1st attk.
" " 2nd "
" " 3rd "
Chorea 1st attack
" 2nd "
" 3rd
Tonsillitis
Purpura
Rheumatic nodules
Erythema nodosum
Urticaria
Tooth and gum infections
Torticollis
Muscle or growing pains
Joint pains
Measles
Scarlet fever
Diphtheria
Whooping cough
Varicella
Typhoid fever
Dysentery
Influenza
Pneumonia
Malaria
Otitis media
Syphilis
Gonorrhea
Operations
Other causes

CARDIAC SYMPTOMS—give dates.
If any are brought about by exertion or excitement, specify by writing (E)
1st attack Yr. | Days | 2nd attack Yr. | Days | 3rd attack Yr. | Days | 4th attack Yr. | Days
Dyspnoea
Orthopnoea
Cough
Palpitation—rapid
—forcible
—irregular
Pain—site
—radiation
—character
Swelling—legs
—abdomen
Headache
Nose-Bleed
Vomiting
Nausea
Loss of weight
Fatigue
Faintness
Giddiness
Tremor
Flushing
Sweating
Pallor

CHIEF COMPLAINTS:

SUMMARY.

Chart 1.—Record of the history. For reproduction here the charts have been reduced one half, the originals measuring 8½ by 11 inches.

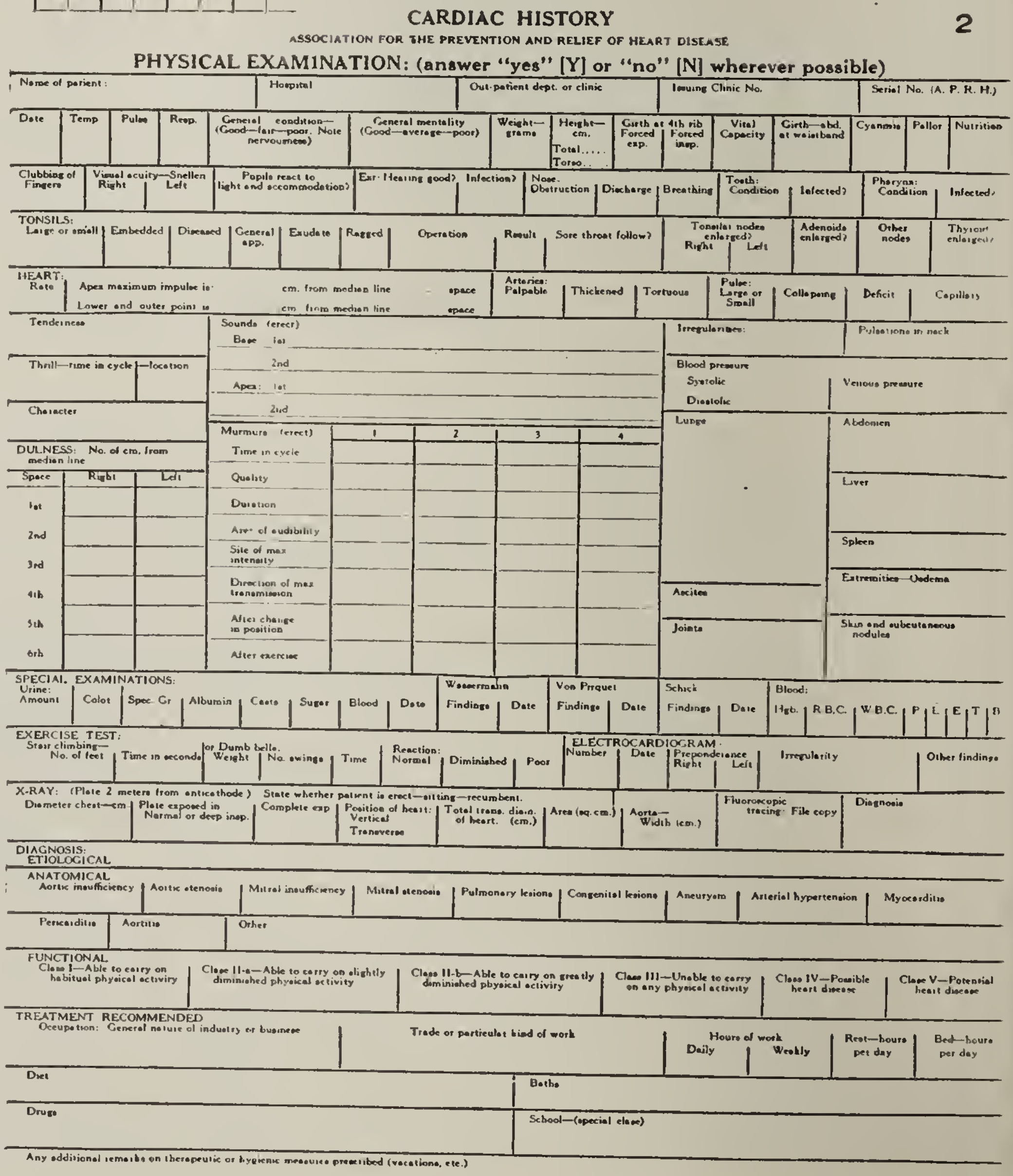
SCOPE OF THE CHARTS

The charts are in some respects elaborate. A single record consists of five parts dealing (1) with the history of the patient (Chart 1); (2) with his physical examination (Chart 2); (3) with the record of the patient subsequent to the first examination (Chart 3), and (4) with an account of his social history (Chart 4). The fifth chart consists of an abstract sheet on which are to be entered the outlines of occurrences to the patient noted while he is in the hospital on account of an attack of heart failure (Chart 5).

It must occur immediately to the reader that a form of record like this is more complicated and requires greater expenditure of time and labor than is at the disposal of physicians in the clinics at the present time. But this impression seems to the Association for the Prevention and Relief of Heart Disease to be justified only under certain circumstances. Unquestionably, this criticism is justified in a clinic having many patients and conducted solely by the medical personnel. It is not the intention of the association, however, to suggest the use of the charts to clinics so organized. The association takes in fact quite a contrary view, namely, that it is only in clinics organized with adequate secretarial and volunteer staffs that it is possible to do the work which it contemplates.

METHOD OF OBTAINING DATA IN THE CLINIC

The association believes that it has evidence to show that, in clinics organized with proper help, more adequate care is possible and more satisfactory records of patients can be made than is now practicable, and that these results can be accomplished with the expenditure of even a smaller amount of time on the part of the physicians in charge than is expended now. Experience has shown that practically the entire data requested on the first record can be adequately obtained by volunteers, with the possible exception of the block of data called "cardiac symptoms" at the lower right corner of the chart. All these data the present system requires physicians to obtain themselves. The physical examination, usually written now by physicians, can be dictated "in toto" to a volunteer worker, as can likewise the data on the continuation form (Chart 3). The information discussed so far can, in short, be filled in by, or dictated to, a volunteer assistant. A volunteer is, in this scheme, required for each physician in the clinic. It is reported that many young women are now eagerly offering service of this kind, so that there ought to be no difficulty in obtaining this aid. The fourth and fifth records are to be kept by statistical clerks especially appointed and attached to the clinics. The statistical clerks, it is estimated, are required at the rate of one to about 300 patients. In addition to the duties just mentioned, the supervision of the work of the volunteers is assigned to them.



CARDIAC HISTORY 2
ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE
PHYSICAL EXAMINATION: (answer "yes" [Y] or "no" [N] wherever possible)

Name of patient: | Hospital | Out-patient dept. or clinic | Issuing Clinic No. | Serial No. (A. P. R. H.)
Date | Temp | Pulse | Resp. | General condition—(Good—fair—poor. Note nervousness) | General mentality (Good—average—poor) | Weight—grams | Height—cm. Total..... Torso..... | Girth at 4th rib Forced exp. | Forced insp. | Vital Capacity | Girth—abd. at waistband | Cyanosis | Pallor | Nutrition
Clubbing of Fingers | Visual acuity—Snellen Right | Left | Pupils react to light and accommodation? | Ear: Hearing good? | Infection? | Nose: Obstruction | Discharge | Breathing | Teeth: Condition | Infected? | Pharynx: Condition | Infected?
TONSILS: Large or small | Embedded | Diseased | General app. | Exudate | Ragged | Operation | Result | Sore throat follow? | Tonsillar nodes enlarged? Right | Left | Adenoids enlarged? | Other nodes | Thyroid enlarged?
HEART: Rate | Apex maximum impulse is cm. from median line space | Lower and outer point is cm. from median line space | Arteries: Palpable | Thickened | Tortuous | Pulse: Large or Small | Collapsing | Deficit | Capillary
Tenderness
Thrill—time in cycle | —location
Character
DULNESS: No. of cm. from median line
Space | Right | Left
1st
2nd
3rd
4th
5th
6th
Sounds (erect) Base: 1st
2nd
Apex: 1st
2nd
Murmurs (erect) | 1 | 2 | 3 | 4
Time in cycle
Quality
Duration
Area of audibility
Site of max intensity
Direction of max transmission
After change in position
After exercise
Irregularities: | Pulsations in neck
Blood pressure Systolic | Venous pressure
Diastolic
Lungs | Abdomen
Liver
Spleen
Extremities—Oedema
Ascites
Joints | Skin and subcutaneous nodules
SPECIAL EXAMINATIONS: Urine: Amount | Color | Spec. Gr | Albumin | Casts | Sugar | Blood | Date | Wassermann Findings | Date | Von Pirquet Findings | Date | Schick Findings | Date | Blood: Hgb. | R.B.C. | W.B.C. | P | L | E | T | B
EXERCISE TEST: Stair climbing—No. of feet | Time in seconds | or Dumb bells. Weight | No. swings | Time | Reaction: Normal | Diminished | Poor | ELECTROCARDIOGRAM: Number | Date | Preponderance Right | Left | Irregularity | Other findings
X-RAY: (Plate 2 meters from anticathode) State whether patient is erect—sitting—recumbent. Diameter chest—cm. | Plate exposed in Normal or deep insp. | Complete exp | Position of heart: Vertical Transverse | Total trans. diam. of heart. (cm.) | Area (sq. cm.) | Aorta—Width (cm.) | Fluoroscopic tracing: File copy | Diagnosis
DIAGNOSIS: ETIOLOGICAL
ANATOMICAL: Aortic insufficiency | Aortic stenosis | Mitral insufficiency | Mitral stenosis | Pulmonary lesions | Congenital lesions | Aneurysm | Arterial hypertension | Myocarditis
Pericarditis | Aortitis | Other
FUNCTIONAL: Class I—Able to carry on habitual physical activity | Class II-a—Able to carry on slightly diminished physical activity | Class II-b—Able to carry on greatly diminished physical activity | Class III—Unable to carry on any physical activity | Class IV—Possible heart disease | Class V—Potential heart disease
TREATMENT RECOMMENDED: Occupation: General nature of industry or business | Trade or particular kind of work | Hours of work Daily | Weekly | Rest—hours per day | Bed—hours per day
Diet | Baths
Drugs | School—(special class)
Any additional remarks on therapeutic or hygienic measures prescribed (vacations, etc.)

Chart 2.—Physical examination.

Instruction as to the proper use of the charts, if this is necessary, is to be supplied to them by the central bureau of the Association for the Prevention and Relief of Heart Disease in New York, acting under the advice of committees of physicians and experts in statistical matters. This is important so that uniformity in the interpretation of the data may be obtained.

CHARTS IN DUPLICATE

Each one of the five charts has been printed in duplicate. In filling them in, it is necessary only to lay ink carbon paper between the folded sheets so that the duplicates can be separated from the originals at the perforated line and may be sent to the central bureau in New York for statistical treatment. The original sheets are to be retained by the respective clinics. Emphasis should perhaps be placed on the fact that the plan does not in any way restrict the activities, rights or opportunities of individual clinics. Quite the contrary result ought to follow. Each clinic can itself collect large amounts of information dealing with its own cases which it can utilize for record, for study, for publication, and in whatever other ways seem useful.

The carbon copies which are to be sent to the central bureau of the Association for the Prevention and Relief of Heart Disease will naturally be viewed from a different point of view from that of the clinics. The conclusions to be drawn by the Association for the Prevention and Relief of Heart Disease will naturally have broader implications and will be based on a greater variety of information. It is only when experiences gained from many sources become available that it is possible to draw conclusions of the sort which the association hopes will become possible.

ADDITIONAL DATA

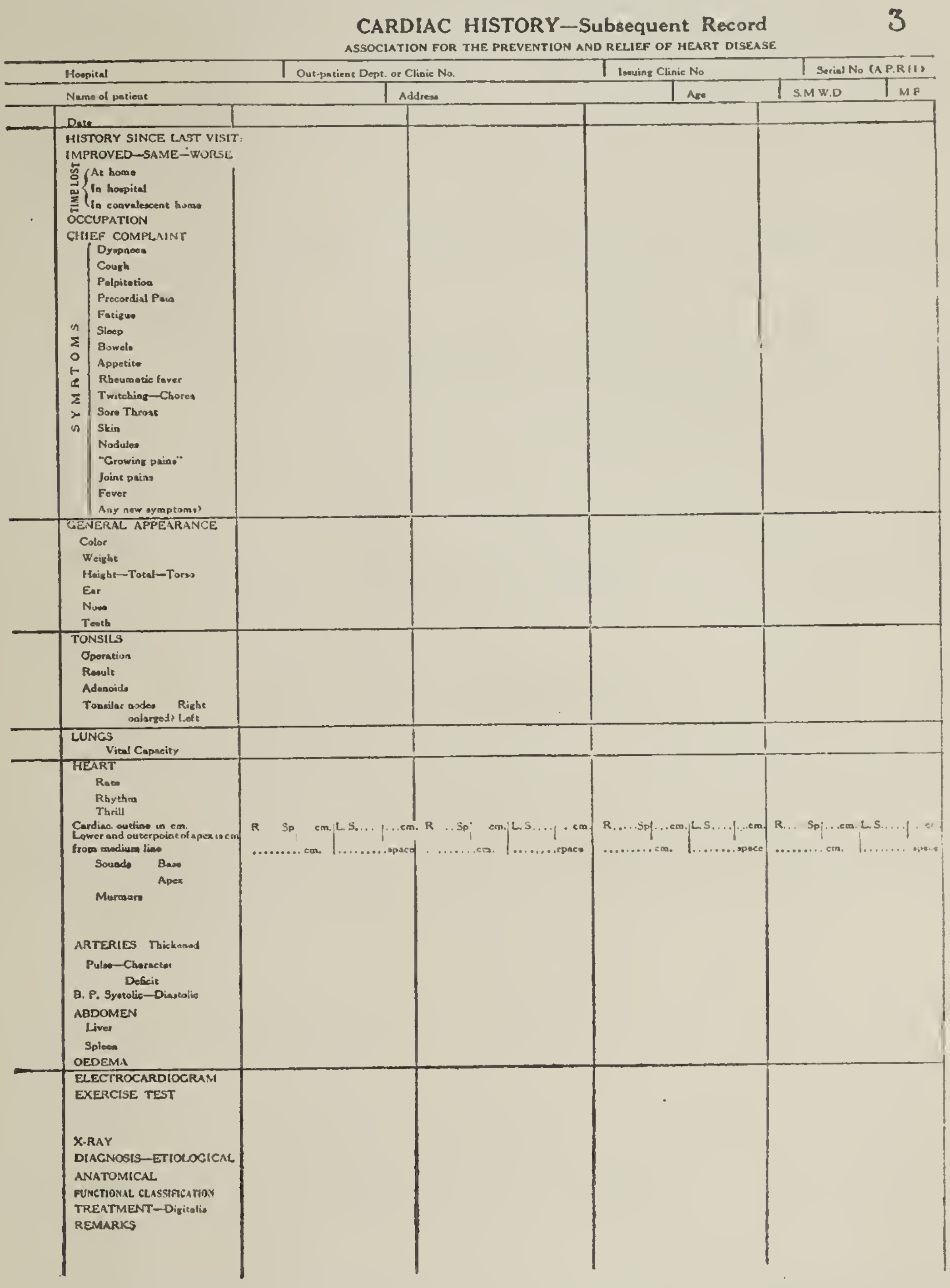
A study of the charts reveals the fact that the plan includes the obtaining of information not only of details at present included in a medical history, but also of certain social relations of the patient, as well as the influence of different forms of treatment on the course of this disease. To obtain information of this kind, space is provided on Chart 1, under the head "occupation of patient" and "previous treatment for heart disease," and on Chart 4, under the headings having to do with the economic status of the patient and his family. The collection of data which are not usually requested and which are of possible value are provided for on Chart 2. These concern vital capacity and other lung volumes, tests for exercise, and a more elaborate method for making diagnoses than has heretofore been customary.

DIAGNOSIS

Diagnosis is regarded as being possible under three heads: etiologic, anatomic and functional.[3] The etiologic diagnosis is based on the history of such diseases as those in the rheumatic group, syphilis, other infectious diseases, and industrial conditions. The nature of the anatomic diagnosis is self-explanatory. The functional diagnosis has been made according to a division into classes adopted by the Association of Cardiac Clinics of New York, and is explained on Chart 2. As to the remaining data asked for on the charts, no more need be said. The charts, it is believed, are sufficiently clear.

COMPLETENESS

A word should be said of the desirability and of the possibility of completely filling in the charts. As one can easily appreciate, completeness will not always be possible. A large variety of information is included, so that should a clinic want it, provision for collecting it is made. The Association for the Prevention and Relief of Heart Disease is naturally concerned in the collection rather of those facts which bear on the public health than on the physical signs in individual cases. It is obvious that completeness from every point of view is not possible in charts like these. The charts include, however, those data which are desired by the majority of physicians at the present time. It need scarcely be pointed out that much space is left both on the face and on the reverse side of the chart for the entry of such notes as seem valuable to individual clinics. Indeed, if an individual clinic desires to undertake a systematic collection of information from some special point of view, it can do so by using a rubber stamp. On the other hand, the Association for the Prevention and Relief of Heart Disease desires that individual clinics fill the charts as completely as possible.



CARDIAC HISTORY—Subsequent Record 3
ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE

Hospital | Out-patient Dept. or Clinic No. | Issuing Clinic No | Serial No (A.P.R.H.)
Name of patient | Address | Age | S.M.W.D | M.F

Date
HISTORY SINCE LAST VISIT:
IMPROVED—SAME—WORSE
TIME LOST { At home
In hospital
In convalescent home
OCCUPATION
CHIEF COMPLAINT
SYMPTOMS
Dyspnoea
Cough
Palpitation
Precordial Pain
Fatigue
Sleep
Bowels
Appetite
Rheumatic fever
Twitching—Chorea
Sore Throat
Skin
Nodules
"Growing pains"
Joint pains
Fever
Any new symptoms?
GENERAL APPEARANCE
Color
Weight
Height—Total—Torso
Ear
Nose
Teeth
TONSILS
Operation
Result
Adenoids
Tonsilar nodes enlarged? Right Left
LUNGS
Vital Capacity
HEART
Rate
Rhythm
Thrill
Cardiac outline in cm. Lower and outerpoint of apex in cm from medium line
R........Sp........cm. L.S........cm. ....cm. ....space
Sounds Base
Apex
Murmurs
ARTERIES Thickened
Pulse—Character
Deficit
B. P. Systolic—Diastolic
ABDOMEN
Liver
Spleen
OEDEMA
ELECTROCARDIOGRAM
EXERCISE TEST
X-RAY
DIAGNOSIS—ETIOLOGICAL
ANATOMICAL
FUNCTIONAL CLASSIFICATION
TREATMENT—Digitalis
REMARKS

Chart 3.—Record of patient subsequent to first examination. This sheet is double, affording space for nine examinations.

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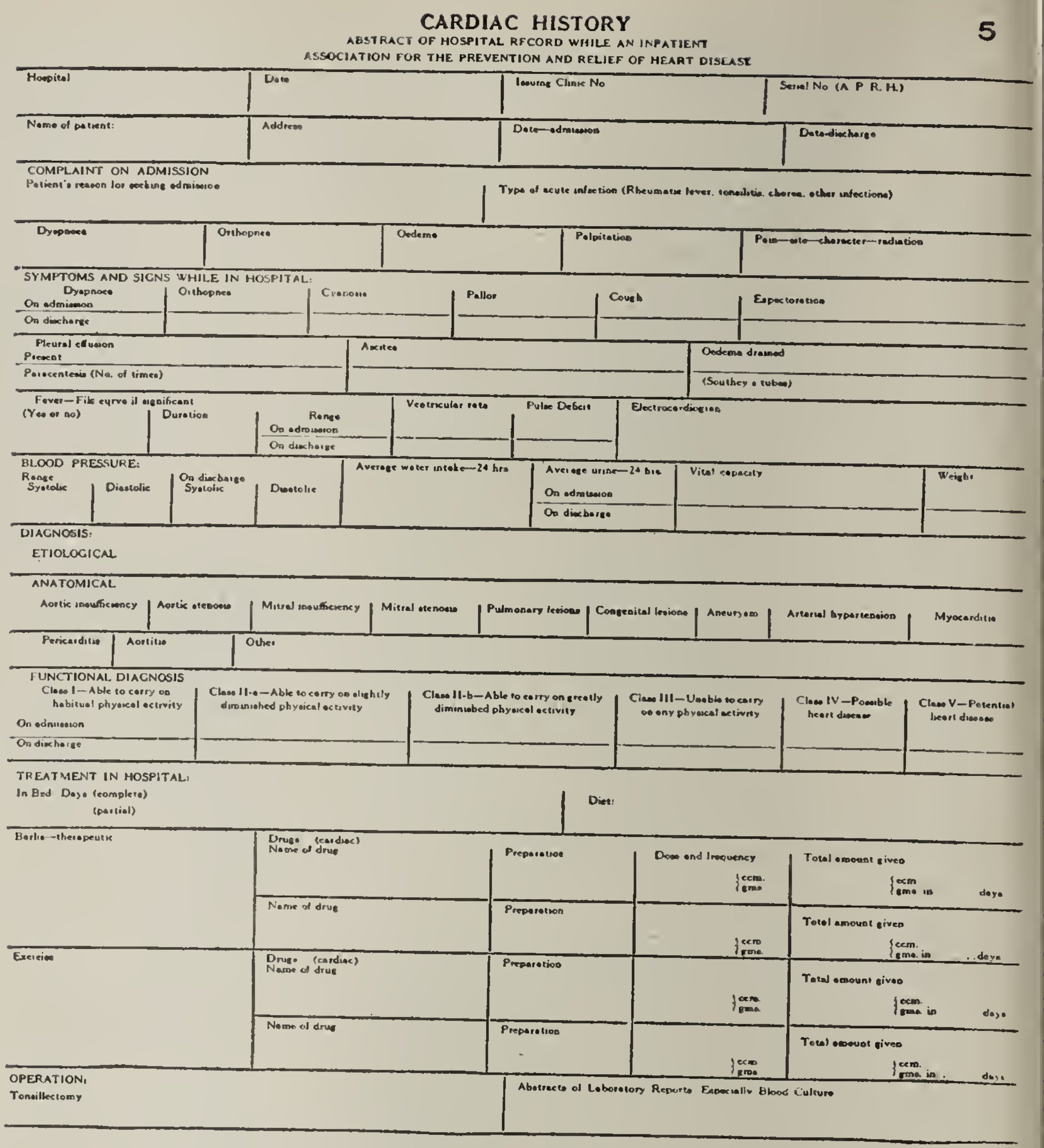
[3] The method of diagnosis advised by the Association for the Prevention and Relief of Heart Disease has already been published in a paper by White, P. D., and Myers, M. M.: The Classification of Cardiac Diagnosis, J. A. M. A. 77: 1414 (Oct. 29) 1921.

RELATIVE IMPORTANCE OF VARIOUS STATISTICS

There are data in the physical examination, such as those having to do with percussion and auscultation, in which individual differences are necessarily great and which, for this reason, are not as useful as other data for the purposes of statistical treatment. It may be pointed out that for the purposes which the association has in view the important data are: the information on the first and second charts having to do with evidences of infection, especially of the tonsils; the size of the heart and the evidences of heart failure, such as edema of the lungs, abdomen, liver and legs; data having a similar bearing on Chart 3; all the data on Chart 4; data on Chart 5 similar to those on Chart 2, and the diagnosis.

JUSTIFICATION FOR UNDERTAKING THE PROJECT

The association is not unaware of the difficulties inherent in carrying out its purposes. It knows that the management of clinics is difficult; obtaining the necessary data is arduous; collating data obtained by different individuals at various places sometimes not directly comparable is hazardous; statistical compilation with the hope of intelligent interpretation of the facts is complicated. The association believes, however, that as time goes on and cooperation becomes increasingly more satisfactory, these charts can easily yield the items of information which are its main objects, such as learning in greater detail and with greater exactitude facts in etiology, the duration of life, the economic status of patients, and the influence of therapeutic measures on these two factors, namely, the duration of life and the social and economic status. The country possesses a large and increasing number of physicians who have had special training and who are especially interested in circulatory diseases, whose aim it must naturally be to aid in increasing information in as accurate a manner, based on as broad a foundation as is possible, and to these this appeal for aid and cooperation is made. For this reason it believes itself justified in initiating this inquiry and in calling to its support the aid of such institutions and individuals as are like minded with itself.



CARDIAC HISTORY

ABSTRACT OF HOSPITAL RECORD WHILE AN INPATIENT

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE

5

Hospital	Date	Issuing Clinic No	Serial No (A P R. H.)
Name of patient:	Address	Date—admission	Date-discharge

COMPLAINT ON ADMISSION

Patient's reason for seeking admission | Type of acute infection (Rheumatic fever, tonsilitis, chorea, other infections)

Dyspnoea	Orthopnea	Oedema	Palpitation	Pain—site—character—radiation

SYMPTOMS AND SIGNS WHILE IN HOSPITAL:

Dyspnoea On admission	Orthopnea	Cyanosis	Pallor	Cough	Expectoration
On discharge					

Pleural effusion Present	Ascites	Oedema drained
Paracentesis (No. of times)		(Southey s tubes)

Fever—File curve if significant (Yes or no)	Duration	Range On admission	Ventricular rate	Pulse Deficit	Electrocardiogram
		On discharge			

BLOOD PRESSURE:

Range Systolic	Diastolic	On discharge Systolic	Diastolic	Average water intake—24 hrs	Average urine—24 hrs On admission	Vital capacity	Weight
					On discharge		

DIAGNOSIS:

ETIOLOGICAL

ANATOMICAL

Aortic insufficiency	Aortic stenosis	Mitral insufficiency	Mitral stenosis	Pulmonary lesions	Congenital lesions	Aneurysm	Arterial hypertension	Myocarditis
Pericarditis	Aortitis	Other						

FUNCTIONAL DIAGNOSIS

Class I—Able to carry on habitual physical activity On admission	Class II-a—Able to carry on slightly diminished physical activity	Class II-b—Able to carry on greatly diminished physical activity	Class III—Unable to carry on any physical activity	Class IV—Possible heart disease	Class V—Potential heart disease
On discharge					

TREATMENT IN HOSPITAL:

In Bed Days (complete)

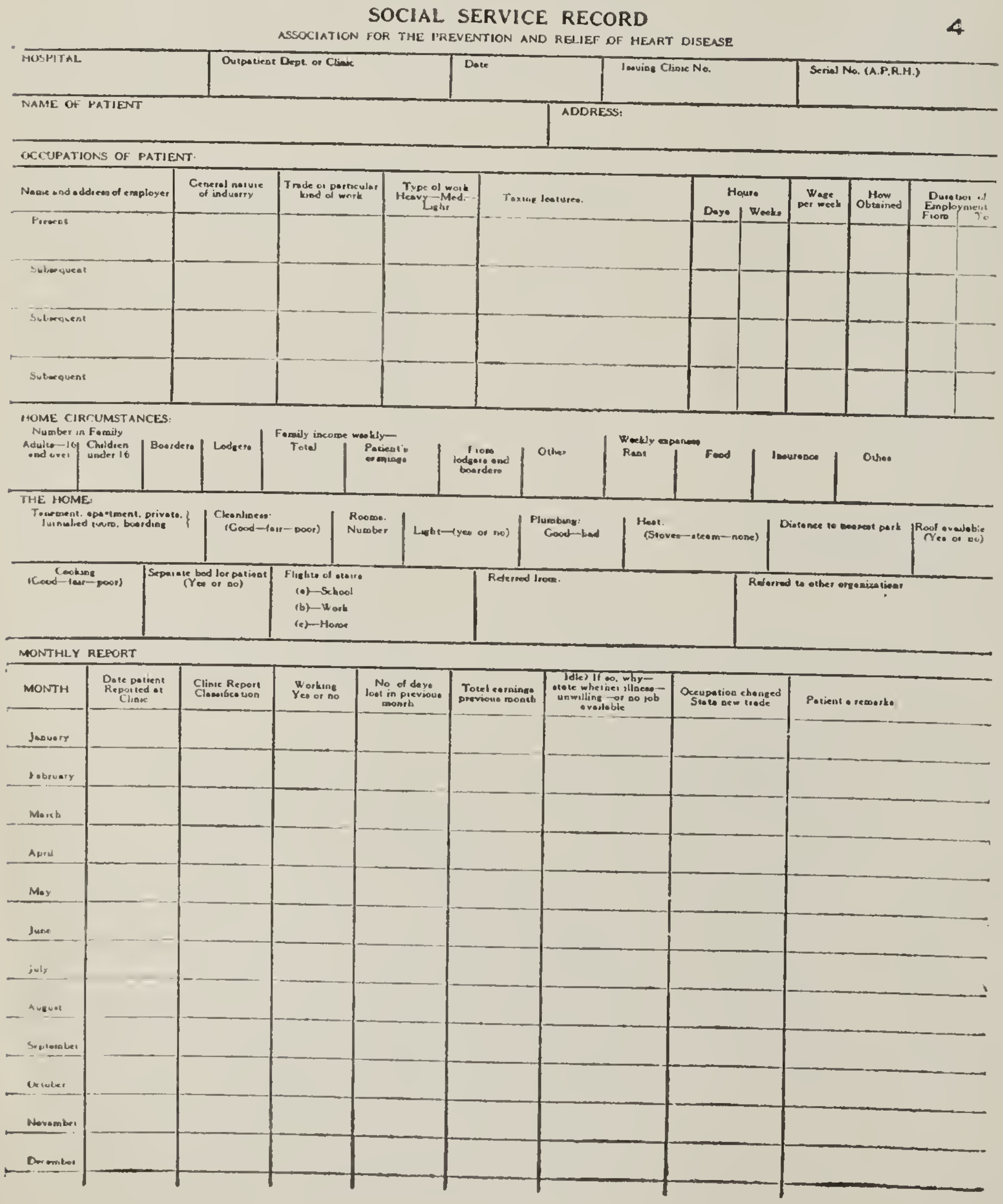
(partial) | Diet:

Baths—therapeutic	Drugs (cardiac) Name of drug	Preparation	Dose and frequency ccm. gms	Total amount given ccm gms in days
	Name of drug	Preparation	ccm gms.	Total amount given ccm. gms. in days
Exercise	Drugs (cardiac) Name of drug	Preparation	ccm. gms.	Total amount given ccm. gms. in days
	Name of drug	Preparation	ccm gms	Total amount given ccm. gms. in days

OPERATION:

Tonsillectomy | Abstracts of Laboratory Reports Especially Blood Culture

Chart 5.—Occurrences while the patient is in the hospital.



SOCIAL SERVICE RECORD

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE

4

HOSPITAL	Outpatient Dept. or Clinic	Date	Issuing Clinic No.	Serial No. (A.P.R.H.)

NAME OF PATIENT | ADDRESS:

OCCUPATIONS OF PATIENT:

Name and address of employer	General nature of industry	Trade or particular kind of work	Type of work Heavy—Med.—Light	Taxing features.	Hours Days	Hours Weeks	Wage per week	How Obtained	Duration of Employment From	Duration of Employment To
Present										
Subsequent										
Subsequent										
Subsequent										

HOME CIRCUMSTANCES:

Number in Family Adults—16 and over	Children under 16	Boarders	Lodgers	Family income weekly— Total	Patient's earnings	From lodgers and boarders	Other	Weekly expenses Rent	Food	Insurance	Other

THE HOME:

Tenement, apartment, private, furnished room, boarding	Cleanliness: (Good—fair—poor)	Rooms. Number	Light—(yes or no)	Plumbing: Good—bad	Heat. (Stoves—steam—none)	Distance to nearest park	Roof available (Yes or no)

Cooking (Good—fair—poor)	Separate bed for patient (Yes or no)	Flights of stairs (a)—School (b)—Work (c)—Home	Referred from.	Referred to other organizations

MONTHLY REPORT

MONTH	Date patient Reported at Clinic	Clinic Report Classification	Working Yes or no	No. of days lost in previous month	Total earnings previous month	Idle? If so, why—state whether illness—unwilling—or no job available	Occupation changed State new trade	Patient s remarks
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

Chart 4.—Social history.

Pennsylvania Tuberculosis Society.—The 1921 Year Book of the Pennsylvania Tuberculosis Society records that this society is the oldest of its kind in the world, having been founded thirty years ago. There are now fifty-two persons employed by local tuberculosis agencies in Pennsylvania outside Philadelphia, which city alone employs twenty-one. It is estimated that 500,000 children in this state have been enrolled in the Modern Health Crusade in the sixty-six counties included in the tuberculosis society's territory. The fact that 700,000 pieces of Modern Health Crusade literature, besides 200,000 pins and buttons, have been handled through the society's headquarters, gives some indication of the extent of this work. The death rate from tuberculosis in Pennsylvania in 1909 was 133.9 per hundred thousand, and in 1920 was 105 per hundred thousand.

Book Notices

The Glands Regulating Personality. A Study of the Glands of Internal Secretion in Relation to the Types of Human Nature. By Louis Berman, Associate in Biological Chemistry, Columbia University; Physician to the Special Health Clinic, Lenox Hill Hospital. The Macmillan Company, New York, 1921. Price, $3.50.

While the scientific world is engaged in laborious experimental study of the so-called endocrine glands, in an endeavor to establish with certainty the facts regarding their physiology, their relation to one another and their effects on the human body in health and disease, and to determine the existence or nonexistence of various secretions which they are presumed to elaborate, there have appeared among the group who call themselves endocrinologists several persons—one hesitates to call them scientists—who, on the basis of a little knowledge and by the use of their ready pens, present views so far beyond the basis justified by the facts, that they hinder progress and cast a veil of doubt over the points that are clearly known. Some persons have been so unkind as to hint that those who indulge in these fantasies are stimulated by pecuniary motives, for the reason that they are engaged in the manufacture of extracts and other products derived from glandular tissues. But this cannot be said to apply to Dr. Berman, the author of the book before us, for he is not engaged commercially in endocrine endeavors; he is in the department of biologic chemistry of a well-recognized university medical school and evidently practices his profession. Somehow or other, however, the research atmosphere of the university has not served to stabilize the ideas presented in this book, a peculiar conglomeration of fact and fancy so artistically presented as to bring it within the realm of nonfiction best sellers.

The introduction is concerned with "Attitudes Toward Human Nature." It is a philosophical discourse with such extraordinary paragraphs as "The Religion of Science," "The Promise of Eugenics," "The Chemistry of the Soul," and "The Prejudices of Philosophers." The second chapter is devoted to the achievements of Addison, Brown-Séquard, Horsley, Bayliss and Starling; a third chapter to discussions of the thyroid and pituitary; the fourth to the adrenal, gonads, thymus, pineal and pancreas. In these chapters the author confines himself fairly well to known facts, although his diction is hardly that associated with the presentation of scientific material. The pineal he calls "the ghost of a once important third eye at the back of our heads," and he says that "it is interesting that Descartes, in 1628, considered the pineal the site of the soul." Beginning with the fourth chapter the material contained in this preposterous work gradually passes more and more toward the side of hypothesis and fiction. Of "The Glands as an Interlocking Directorate" he speaks as though the matter were completely established, using such alliterative terms as "The Harmony of the Hormones," and "Physics of the Wish." In the chapter entitled "How the Glands Influence the Normal Body," the author, to use a metaphorical expression, casts loose the guide rope and lets the balloon go up. For the rest of this book a scientific review is impossible. Beginning with Chapter 6, the author says: "It needs a poet to chant the epic of sex. The mystery of it puzzled the minds of the earliest Sumerian thinkers." But it does not puzzle Dr. Berman because he knows all about the glands—and then some. He knows the causes of sex and "the secret of the masculine." He condemns the Freudian views, showing that what the Freudians call repression is actually the production of a tension in which an endocrine is decisive. To him everything emotional or expressing emotion is a direct performance of the vegetative apparatus. In classifying types of personality he considers the homosexual as thymocentric. He even describes two types of personality for the pituitary. He amuses himself with eunuchoid and satyric types and at last, in the chapter on some historical personages, he departs entirely from reality and goes further than the most ambitious Freudian in his interpretations of pathologic conditions on the basis of known historical facts. From the character of Julius Caesar he describes the pathology of that statesman's glands. Of Napoleon he says that "it was the pituitary that first failed him rather than the thyroid or adrenal." Of Nietsche he says, "pituitary centered with postpituitary domination and superior thyroid and inferior adrenals," of Darwin, "a neurasthenic genius" who lived in an "environment for which his adrenals sentenced him to destruction," and he suggests that Darwin's survival as a genius "must be put down in large measure to the ministrations of wife and children, who supplied him with the endocrine energy he lacked."

The final two chapters concern "Applications and Possibilities" and "The Effect upon Human Evolution." Thus far the author has presumably been presenting facts; here he is admittedly delving in speculation. From what has been said of the speculative character of his facts, the highly grotesque character of his speculation may be imagined. The book is, after all, entertainingly written. Unfortunately, it will be accepted quite seriously by many laymen, who will regard the author's fancies and interpretations as facts. For his scientific vagaries the Department of Biological Chemistry of Columbia University cannot, of course, he held responsible.

Guides for History Taking and Clinical Examination of Psychiatric Cases. Edited by George H. Kirby, M.D., Director, New York State Psychiatric Institute. Cloth. Price, $1.50. Pp. 84. Albany: New York State Hospital Commission, 1921.

These guides are a final printed form of the typewritten sheets used for history taking and clinical study of mental cases in New York State institutions over a period of fifteen years. They were originally planned by Dr. Adolf Meyer. They have the advantage of natural growth and revision before appearing in printed form, and present a thorough and compact handbook for this type of study. There is a special section on body development and endocrine glands, containing also laboratory tests of glandular function. This and the section on personality, based on the studies of Hoch and Amsden, are the important points of departure from the usual outline used in psychopathic hospitals. In the section on mental examination, use is made of standardized mental tests, and in the section on further psychologic analysis, the contributions of psychanalysis in the form of free association and dream analysis are included. Throughout the text there are valuable hints to examiners, and references to important recent literature. It is an admirable, well balanced compendium, and marks the path of progress in mental investigation, laying stress on the "dynamic factors underlying abnormal emotional reactions."

The Leucosis of Fowls and Leucemia Problems. Vilhelm Ellermann, M.D., Professor of Legal Medicine, University of Copenhagen. Cloth. Price, 7 shillings 6 pence. London: Gyldendal, 1921.

The author uses the word leucosis to designate the various leukemic diseases, the nomenclature of which has become complicated and even confusing. The object of the book is to present a summary of the work that the author and others have done on the leukemic diseases of the fowl, which are transmissible and apparently caused by a filtrable virus, thus offering an opportunity for the experimental investigation of leukemic problems. The book is of special interest to students of these problems, and will be a good starting point for new experiments in this field. It is published at the expense of the Rask Oersted Fund (Danish).

Essentials of Veterinary Physiology. By D. Noël Paton, M.D., B.Sc., LL.D., Professor of Physiology, University, Glasgow, and John Boyd Orr, D.S.O., M.C., M.A., Director, Rowett Institute for Research in Animal Nutrition, Aberdeen. Third edition. Cloth. Price, $6.50. Pp. 674, with 245 illustrations. New York: William Wood & Company, 1921.

This book was written to meet the requirements of students and practitioners of veterinary medicine. It will serve that function well. As might be expected, the physiologic data are the same as those in other textbooks purporting to illustrate physiologic processes as occurring in man and the lower animals. Anatomic and physiologic matter pertaining particularly to the horse is given. Although the subject-matter appears in a highly condensed form, the information imparted is up to date and accurate.

Medicolegal

Evidence of Malpractice in Pregnancy Case Sufficient to Go to Jury

(Rainey v. Smith et al. (Kan.), 201 Pac. R. 1106)

The Supreme Court of Kansas says that, in this action to recover damages for alleged malpractice, the plaintiff introduced evidence which tended to prove that she was pregnant and in ill health, and had consulted one of the defendants, a local physician, on a number of occasions. He made examinations from time to time, and first informed the plaintiff that she had a tumor in the mouth of the uterus; and later, after the plaintiff had informed him she was pregnant, said that her condition was not due to natural pregnancy, but that, if she was pregnant, the fetus was in the fallopian tube, and must be removed by an operation or the condition would result in death. He requested her to go with him to the other defendant in Kansas City for a roentgen-ray examination, which would reveal the cause of her trouble. She went with him to Kansas City for that purpose, and they consulted the other defendant, who made a digital examination, and said that a roentgen-ray was unnecessary; that a blind physician could tell what was the matter; that the ailment was pregnancy outside of the uterus; and that it was necessary to have an operation at once. No roentgen-ray examination was made. A few days afterward, the plaintiff went to a hospital in Kansas City, where an operation was performed and it was discovered that the plaintiff was pregnant, but that the fetus was in the uterus and not in the fallopian tube. The incision was closed and in a short time the plaintiff returned to her home. Afterward she gave birth to a normal, healthy child. After the operation, the defendants reported to her that they had discovered a number of tumors in and about the uterus, and that after the birth of the child they must be removed. When the child was born, a hernia developed in the incision that had been made. Some months later, the plaintiff returned to the hospital and was operated on by another surgeon for the purpose of reducing the hernia. He made an incision, examined the abdominal viscera, and found that the fallopian tubes and the appendix were in bad condition. They, together with the ovaries, were removed by him. He discovered no tumors about the uterus, but did discover some scars and adhesions on the omentum, some of which might be called tumors.

The defendants said, in their brief, that is was conceded that if they made a wrong diagnosis, they did not operate in pursuance to such diagnosis, but so far as the hazy evidence of the plaintiff threw any light on the subject, it appeared that they made an explorative operation, on account of the seriousness of the plaintiff's condition, a method which is approved by the best surgeons according to the testimony of a physician who was a witness for the plaintiff. On the trial, the court sustained a demurrer of the defendants to the plaintiff's evidence. But that judgment is here reversed, and a new trial directed. It is unnecessary, the supreme court says, to make any extended comment concerning the manner in which the defendants treated the plaintiff as their patient. It is enough to say that they made a serious mistake in their diagnosis, and that the evidence tended to show that they were negligent in not making a roentgen-ray examination. The demurrer should have been overruled, and the evidence should have been submitted to the jury.

It is the rule in Kansas that negligence of a physician or surgeon must be proved by expert evidence. That rule, however, was satisfied by the testimony of a physician that he thought a six months' fetus would show a shadow on a roentgenogram; that if he diagnosed a case by an abdominal condition and felt positive, without a roentgenogram, that it was a serious case, and one for immediate surgical treatment, he wouldn't bother with a roentgenogram; that there are pregnancies where unusual, extraordinary symptoms appear, which are hard to diagnose, but it is not hard to ascertain whether the condition is a serious one; and that an exploratory operation was not justified if the case was so clear and the diagnosis so plain that, to use the language of the man diagnosing it, a "blind physician could tell what was the matter."

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, St. Louis, May 22-26. Dr. Alex. R. Craig, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, St. Louis, May 22-24. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Association of Industrial Physicians and Surgeons, St. Louis, May 22-23. Dr. W. A. Sawyer, 343 State St., Rochester, N. Y., Sec'y.
American Proctologic Society, St. Louis, May 22. Dr. Ralph W. Jackson, 245 Cherry St., Fall River, Mass., Secretary.
American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y.
Association for the Study of Internal Secretions, St. Louis, May 22. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Medical Library Association, St. Louis, May 22-23. Dr. John Ruhräh, 1211 Cathedral St., Baltimore, Secretary.
Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.
Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
North Dakota State Medical Association, Jamestown, June 1-2. Dr. H. J. Rowe, Lisbon, Secretary.
Rhode Island Medical Society, Providence, June 1. Dr. I. W. Leech, 111 Broad St., Providence, Secretary.
Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Sixteenth Annual Meeting, held in Albany, April 18-20, 1922

(Concluded from page 1486)

Diagnosis of Bone and Joint Lesions by the Roentgen Ray

Dr. Frederick H. Baetjer, Baltimore: There are three age periods of bone: (1) the growing period, from 1 to 20 years; (2) the period of maximal health, from 20 to 40 years, and (3) the period of decline, after 40. Different lesions affect different age periods. Injuries to bone are according to the age of the bone. Take, for instance, the hip: in the first period fracture occurs at the epiphysis, which is the weakest part. In the second period, the epiphysis is united to the neck of the femur and synovial membrane; the synovial membrane slips. In the third period, the bone is more brittle, owing to absorption of calcium salts, and fracture of the neck of the femur occurs. In childhood, the bones are much more flexible and greenstick fractures occur. In older people long oblique fractures occur. In the elderly and aged, comminuted, transverse fractures occur. Disease of the bone is also in relation to age periods. The origin of the lesion is important. By determination of the origin, certain lesions can be ruled out. Bone lesions in children show three age periods: from 1 to 3; from 3 to 6, and from 6 to 14. In the first period the common diseases are scurvy, syphilis and rickets. From 3 to 6 years, tuberculous lesions of the joints are common. From 6 to 14, Perthes' disease is most often seen. There are also laws relating to sex: from 1 to 5 years, lesions are as common in girls as in boys. After 6 years, boys play more dangerous games and suffer a higher proportion of fractures. In men, the heavier trades show a larger percentage of bone lesions. After 50 the two sexes again become equal in this respect. In regard to neoplasms, carcinomatous metastases are more common in the female, following carcinoma of the breast. The most common cause of bone cancer in the male is carcinoma of the prostate, metastasizing into the pelvis and the lumbar spine.

Operative Treatment of Idiopathic Scoliosis

Dr. Armitage Whitman, New York: These cases exclude scoliosis from well known causes and postural deformities.

They present a class of lesion of unknown origin, usually present in girls aged from 12 to 16 years, with bad posture, poor circulation, offensive breath, etc. Usually it is the dressmaker who notices that a shoulder or hip is too high, and on roentgen-ray examination there is found to be lateral curvature with wedging of the vertebrae. Some of these patients get progressively worse, with serious internal misplacements, which lead to early death. The desultory treatment with jackets, corsets and gymnastics is of little use. Our treatment is to correct by exercises and support as much as possible, and then to practice intervention by fusion of the deformed vertebrae.

DISCUSSION

Dr. MacKenzie Forbes, Montreal: The judgment of the medical profession on the subject of the operative treatment of scoliosis is rapidly changing. Operative procedures have not been proved to stand the test of time. We are still in the experimental stage. We do not think operation is justified, unless to prevent a serious after-condition, such as severe cardiac lesions. In severe scoliosis we are justified in doing a life-saving operation.

Dr. R. H. Sayre, New York: The treatment of scoliosis is preventive rather than curative. Hibbs twists the patient by traction, and then fuses the spine to anchor it. I wonder whether the patients are any more comfortable than with the normal mobility of the scoliotic spine. Is the stiff spine worth while? I believe that structural abnormalities, extra ribs, irregular fifth lumbar, etc., are at the bottom of atypical scoliosis. By supporting patients during the period of bone growth, you can do much to prevent frightful deformities later on, just as you support a child with "bandy" legs to keep it from getting worse.

Dr. R. R. Fitch, Rochester: We should operate when the thoracic organs will not have opportunity for proper function. This will spare the patient great disturbance of function and an early death.

Dr. James W. Sever, Boston: Dr. Whitman is unduly pessimistic as to routine treatment of scoliosis by exercise and jackets. Operative treatment should not be done except in cases in which adequate jacket treatment has been used ineffectively for a long time.

Some Factors of Safety in the Preoperative and Postoperative Treatment of Goiter

Dr. Emil Goetsch, Brooklyn: To combat the thyroid postoperative acidosis which is likely to develop in the first twenty-four hours, we have resorted to the intravenous injection of glucose solution. The metabolic rate test and the epinephrin sensitiveness test are used to determine the type of operation. The glucose solution is given slowly to avoid circulatory embarrassment, the renal threshold level never being exceeded. It is considered that in hyperthyroidism the glycogen reserve is depleted, so that there is no response to the factors calling for glucose. The dosage is from 300 to 750 c.c. of chemically pure glucose, freshly prepared. It is administered as soon as acidosis (indicated by acetonuria) appears. This controls the symptoms and makes the postoperative course more comfortable and safe.

DISCUSSION

Dr. Charles W. Webb, Clifton Springs: Our chemist, Dr. Hubbard, has worked out a quantitative method for measuring the acetone output. There is a definitely lowered glycogen storage in these cases. In a case of exophthalmic goiter, with a metabolic rate of 139, there was 0.5 mg. of acetone in 100 c.c. of urine, and 2 mg. of beta-oxybutyric acid the day after operation, coming back to normal in five days. The thyroid patients excrete an excessive quantity of acetone and beta-oxybutyric acid, until controlled by administration of carbohydrates, given intravenously, when not tolerated by rectum, owing to the excessive sensitiveness of the bowel in thyroid disease. An attempt is made to load up patients with carbohydrates before operation, usually candy in some form, to head off the distressing symptoms which make the postoperative course so difficult to handle. Epinephrin hypersensitiveness and metabolic determinations done before operation show what amount of operation the patient can safely stand. These methods are bringing thyroid operations to the same stage of safety as other surgical conditions.

Dr. Eugene Pool, New York: Arguments have been advanced as to whether these cases are medical or surgical. They are neither. They are both. Each patient should receive prolonged attention from a competent medical man. It has been said by some that the Goetsch test is valueless. If it is done exactly as he does it, it is very valuable. Patients with metabolism plus 90, should not be operated on. With the other cases it is a question of the proper time. Three fourths of the patients should receive surgical treatment. Acetonuria is presumptive evidence that there is acidosis, but there may be compensation for the increased production of acetone bodies which are freed by oxidation of the fats. In my experience the use of glucose solution has been of value. In one case, a serious risk, we administered glucose preliminary to operation, and had the best results we had ever had. I have never seen a patient do so well. I am convinced that the method is valuable.

Dr. G. R. Jameison, Poughkeepsie: The practice of giving glucose intravenously may not be without considerable danger. We concluded that as a large amount of sulphuric acid is used in the preparation of glucose, there is a slightly acid reaction which increases the blood acidity. Therefore, the solution must be used with caution.

Dr. G. E. Beilby, Albany: With better technic and better selection of cases, the operative mortality is almost nil with the best surgeons. The work of Dr. Goetsch opens up a new field. I have not seen what I call acidosis in many cases. There is a very uncomfortable period following operation. There will be a reaction, with increase of thyroid symptoms in about twenty-four hours, but this will stop in thirty-six hours. I avoid this to some extent by disturbing the routine of the patient as little as possible before operation.

Dr. T. L. Deavor, Syracuse: Why not add Dr. Goetsch's theory to our line of treatment? Do not let us discard any of the things that have helped us. We need them all. I would use rectal administration, but if intravenous will do better, let us use that. We need not forget administration of fluid, rest, separation from friends, etc. Let us put a check on too early operation. Physicians want patients operated on the next morning after hospital admission. That is very dangerous.

Traumatic Backs and Their Treatment

Dr. James Warren Sever, Boston: This is a common complaint, little understood, frequently ignored, and giving rise to a good deal of harm. Accurate diagnosis is necessary for proper treatment and repair. In regard to the type of injury: Ligamentous tears take longer to repair than muscle tears, and tend to recur. They are usually caused by lifting. Sacro-iliac strain is common, and can usually be relieved by strapping. Manipulation, with or without anesthesia, will reduce sacro-iliac displacements. Slipping forward of the fifth lumbar on the sacrum causes acute discomfort. Camptocormia, or bent back, is a hysterical prolongation of muscle strain. Bad posture, short heel cord and short leg are causes of backache, and can be relieved by tendon stretching. Hypertrophic arthritis in older persons often simulates fracture.

DISCUSSION

Dr. Mackenzie Forbes, Montreal: Most people complaining of injury to the back are really suffering from rheumatoid conditions. The differentiation lies in the fact that rheumatoid conditions are multiarticular and not monarticular. Search of the other joints will confirm the diagnosis.

Dr. R. H. Sayre, New York: Strapping is the best support in these cases, and a useful thing is to punch holes in the straps and pull a lacing through to hold them in place. Support should be used a long time. I have seen cervical paralysis follow too early removal of supports. Tuberculosis of the spine in adults is more common than is generally supposed.

Dr. Ralph R. Fitch, Rochester: Strained back should be treated immediately. The patient should be put to bed, in plaster spica in acute cases. Walking increases strain of the ligaments. In vertebral fracture, operation should be done in many cases.

Procedures for Improvement of Impaired Function of the Knee Joint Due to Extra-Articular Causes

Dr. Ralph R. Fitch, Rochester: The knee is a hinge joint which is easily affected by strain of weak or flat feet or incorrect body weight bearing. Rachitic knock knees or bow legs should be treated early, as they cause slipping of the patella. Transplanting fascia to hold the patella in place is helpful, as fascia does not stretch. This will improve the position of the quadriceps and the patellar tendon. Badly united fractures of the leg and thigh cause knee strain; malunion should be corrected. The same is true of malunion of the ankle. In a case of knock-knee from loss of the condyle of the femur, a paper pattern was made from the roentgen-ray tracing, and applied so that at operation a good alinement with the thigh was produced, and good weight bearing insured. In femoral fractures, limitation of knee motion is due to shortening of the quadriceps tendon. This can be freed and the knee flexed and put in plaster. Sometimes knee conditions are due to hip and low back conditions, with reflex pain.

Treatment of Bladder Tuberculosis

Dr. Edward L. Keyes, New York: Often there are other infections secondary to the tuberculosis which cause ulceration of the bladder wall. The urethra becomes inflamed, often as far as the meatus. Stones can be removed, strictures stretched, and secondary infections treated. Mercurochrome-220 soluble injections, and silver nitrate can be used. Anything that will help to clear up the condition and make things more tolerable for the patient is worth doing.

DISCUSSION

Dr. Edwin Beer, New York: We do not get such extreme cases as we did ten or fifteen years ago, for the reason that symptoms are being recognized earlier, and we see these patients sooner. We must teach men to recognize early irritation of the bladder as something serious and not merely a "cold in the bladder." I think Dr. Keyes' method of using liquor hydrargyri nitratis is a little different from other forms of cauterizing the bladder. It is usually better to treat cases under gas-oxygen anesthesia.

Dr. Hunter, Albany: I think these cases are due not to tuberculosis of the bladder, but to subsequent infection. Some ulcers are tuberculous and should be excised. The other infections can be treated with instillations.

Nitrous Oxid Anesthesia: Its Value as a General Anesthetic in Genito-Urinary Surgery

Dr. John J. Buettner, Syracuse: This type of anesthesia requires simple apparatus and an experienced anesthetist. It is of great value to the urologist, because his patients constitute poor surgical risks. For these cases, as for others, it is the safest, pleasantest anesthetic. The gas is nonirritating to the lungs and is not eliminated by the kidneys. To produce greater relaxation, 1 ounce of ether can be used with it. Nitrous oxid can be administered with the least amount of psychic trauma, and there are fewer contraindications to its use than any other form of anesthesia.

DISCUSSION

Dr. E. L. Keyes, New York: I agree as to its great advantages, especially in deficiency of the kidneys. The urologist must be more careful about anesthesia than other surgeons. In removal of the prostate, in which we want the sutures to heal very kindly, gas-oxygen is preferable to local anesthesia.

Dr. Edwin Beer, New York: Dr. Buettner has emphasized the important points, that is, the safety of gas-oxygen in impaired renal function cases. I do not believe that it is as difficult to administer as the doctor has indicated. We have two nurses who have been trained to do the work like experts. This anesthetic is particularly useful in obstructive jaundice cases.

Dr. Louis Hacker, Albany: The only reason we do not always use it is that we have an anesthetist in whom we have complete confidence. Otherwise we have been pleased with the results when we have used it. In one woman with tuberculosis a laparotomy was done under gas-oxygen.

Dr. W. A. Groat, Syracuse: I am interested in what Dr. Beer said about nurses being trained to give anesthesia. They can be trained to do complicated things, but that is not a recommendation of the method. I am opposed to laymen practicing medicine.

Some Phases of the Surgery of the Spleen

Dr. Royal H. Fowler, Brooklyn: Indications for splenic surgery comprise three groups: (1) injuries, abscess, cysts, new growths; (2) diseases of the blood-forming system, comprising Banti's disease, Gaucher's disease and hemolytic jaundice; (3) pernicious anemia, primary cirrhosis of the liver with splenomegaly, leukemia and polycythemia vera. The results in the latter diseases are variable. Splenectomy figures in leukemia show an alarming mortality. In polycythemia vera the mortality is very high, but some good results have been reported. In cirrhosis of the liver, early operation should give good results. Late operations are fatal.

DISCUSSION

Dr. J. M. Hitzrot, New York: In some cases, splenectomy reveals a small accessory spleen, attached to the larger organ. With excision of the primary spleen the secondary one rapidly develops and assumes normal proportions.

Dr. Robert T. Morris, New York: The point made by Dr. Hitzrot relating to the growth of a full sized spleen from a small adjuvant spleen, after removal of the larger organ, seems to me to be very significant. It includes the idea that Nature really feels the need for a spleen, and a large one. When the ovaries have been removed, some latent rests of ovarian tissue in the broad ligament sometimes develop into actively functioning organs. On the other hand, when the appendix or the gallbladder is removed, Nature apparently makes no effort to replace them, apparently leaving them in the category of vestigial structures without present-day usefulness.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

Twelfth Triennial Session, held May 2 and 3, 1922, at Washington, D. C.

Dr. Frank Billings, Chicago, in the Chair

SOME ASPECTS OF THE PHYSIOLOGY AND PATHOLOGY OF NUTRITION

Factors Which Enter into an Adequate Diet

Dr. E. V. McCollum, Baltimore: Fifteen years ago it was universally believed that a chemical analysis could inform us as to the physiologic values of food. It was believed that if we knew what the diet should contain in the way of proteins, carbohydrates, fats and mineral salts, we could plan it so as to insure complete physiologic well-being. There has been a great advance in this field of knowledge. We have learned that there is a great variation in the quality of proteins from different sources. There are some very poor proteins, some medium, some good, some excellent, in the natural foods. More significant is the fact that certain proteins, which can be classified as those of poor quality when they serve as the sole source of nutriment, may be enhanced in value by combination with other proteins in the dietary. Thus, proteins of the cereal grains, tubers and fleshy roots are not of high value in nutrition, while proteins of animal tissues are of value and are enhanced by the qualities of vegetable foods. The same is true of the proteins of milk.

Another view that has become well established is that concerning the existence of certain substances which the diet must supply, but which are still uncharacterized chemically, which we call collectively vitamins, and differentiate under the algebraic formulas, A, B and C. Some evidence of a fourth substance has been discovered. There is a group of diseases, due, as far as we can tell, to the lack of each specific vitamin. The first of these are the ophthalmias of dietary origin, the never failing result of the lack or the inadequate provision of vitamin A in the diet. This vitamin is by no means distributed in the natural food in sufficient abundance to meet the physiologic requirements of men and animals. The second type of disease is beriberi, which occurs in animals as a polyneuritis of dietary origin, and is due to deficiency of vitamin B. A third disease is scurvy, due to lack of vitamin C. The latter substance is the most easily destroyed of the essential food components. There is also a group of diseases which must be regarded as nonspecific, in the sense that more than a single dietary factor is involved in their etiology. Most prominent in this group is rickets. Pellagra is a deficiency disease, which results from faulty nutrition brought about by persistent adherence to insufficient diet.

In all the experimental work carried on in England and this country, many of the experiments described support the theory that as long as we select a food supply from cereal grains, legumes, fleshy roots and muscle cuts of meat, it matters not what the variety or palatability of such a diet may be, it will never support adequate nutrition in animals or in human beings. Certain things are always lacking in such a list of food.

There are only three types of diet which have ever succeeded in the nutrition of men and animals: 1. A strictly carnivorous diet in which all parts of the animal are eaten (muscle tissues of animals are very deficient in a number of respects; one can do no greater damage to the experimental animal than by restricting its diet solely to muscle tissues). When one imitates the dietary habits of the wild carnivora, by giving muscle fats, viscera and bony substances, one gets success with this diet, just as do the wild carnivora in the open. 2. The oriental diet. There are certain substances in the leaves of plants which are not the same as those which serve as starch-forming organs. The Orientals have never eaten meat products, but have consumed quantities of leafy vegetables unknown in the dietary habits of America. These leafy vegetables stand out as a very successful diet, and a large number of people subsist on a diet in which these vegetables play a large part. 3. The mixed diet typical of our country in great measure. In our national dietetics there is too large a proportion of food derived from highly milled cereals—rice, white bread and other cereal products, in addition to muscle cuts of meat, potatoes, sugar, etc.

The result of that diet I believe that we see now in the prevalence of skeletal defects, rickets and malnutrition in a large percentage of children in the public schools. A series of measurements and weighings of children have demonstrated that from 20 to 30 per cent. of schoolchildren are underweight for their age. Another factor of great practical importance is the relation of diet to preventive dentistry. Accumulation of evidence shows the relation of faulty diet of various kinds to defects of the teeth. There can be little question that the present high incidence of dental caries and the unhealthly condition of the jaw tissues about the root canals depend on a lack of elements which are needed for the production and optimal development of the teeth when forming. Supplying the proper dietary factors is the only way we can carry out a reform which will lead to the better dentition of our people. Certain classes of food should enter more prominently into our diet than they do at present; these are mainly milk and green vegetables of the leafy type, such as salad dishes which encourage eating raw food and raw vegetables for the purpose of supplying sufficient antiscorbutic principle.

Experimental Evidence of the Lack of Vitamin B in Nutrition

Dr. Lafayette B. Mendel, New Haven, Conn.: In the investigations on vitamin B, the opportunity to employ animals, without the limitations of research on man, has been an important factor in advance. Experimental polyneuritis gallinarum opened the way for the interpretation of beriberi as an avitaminosis. Hopkins in 1906 prophesied that health and nutrition of individuals depend on "unsuspected dietary factors." Several of these factors have been discovered. Although their chemical nature has not yet been identified, the evidence for their need is beyond question. Vitamin B is distributed widely in plants and animals. When a diet "otherwise adequate" but lacking in this factor is offered to animals, they soon decline to take sufficient food, no matter how palatable it may be. The adjuvant to the diet of this substance rapidly brings return of appetite. The same phenomenon is observed in convalescents too long maintained on restricted diet, and manifesting an indifference to food. Human beriberi and the experimental polyneuritis of birds have long been studied. Recently, similar experiments have been carried out on the dog. This animal, if maintained for weeks on a diet lacking in vitamin B, first suffers vomiting and gastric disturbance, and then refuses to eat. Later, its limbs become involved progressively in spastic paralyses. Convulsions follow, and the animal finally dies. If vitamin B is administered before the advanced stages, the animal entirely and promptly recovers. Recent workers have believed that lesions of the gastro-intestinal tract are associated with deficiency in this vitamin, and that the functional activity of the lymphoid tissues is interfered with. Lymphopenia and marasmus accompany withholding the B vitamin, and disappear with its restoration. In other words, its presence is necessary to the normal functioning of lymphoid tissue. Specific lesions of the lymphoid tissues, however, may be induced by different agencies, of which vitamin deficiency is only one.

Distribution and Properties of Vitamin C

Dr. H. C. Sherman, New York: The lack of a necessary antiscorbutic substance, vitamin C, in grains, was established by experiments on guinea-pigs which were fed entirely on rice or on oats. The instability of this vitamin will make very difficult its isolation in pure form, but it is measurable by its effects experimentally, and its occurrence in various foodstuffs can be more or less computed. Grain in a resting state contains little or none of this substance; but properly sprouted grain, and cereals, show a marked development of vitamin C. A preexisting substance in the seed becomes transformed into vitamin C as the grain sprouts. This fact is of fundamental significance. This vitamin is water soluble, and passes in the sap into the most actively growing, succulent parts and juicy stems and tubers of plants. Oranges, lemons, tomatoes and raw cabbage are rich sources of vitamin C. Animals seem to depend on plants for their needs of vitamin C. Rats, which are almost immune to scurvy, seem to require but little of it. Animals do not seem to store vitamin C to any extent in their bodies, but possibly the blood contains it, as does milk. The milk of the cow fed on fresh grass in summer is rich in this vitamin. This vitamin-rich diet should apply also to the milk of the nursing mother, who should receive ample allowance of fruits and vegetables to supply vitamins B and C, as well as good milk, rich in vitamin A. Vitamin C appears to play a part in the nutrition of animals, even those immune to scurvy, as rats, which do not develop scurvy, are nevertheless improved in health and vigor by its addition to their diet. Physically and chemically, vitamin C is soluble in water and alcohol, and is destroyed readily by heat or oxidation. Destruction by heat is more rapid in the presence of air. Both time of heating and temperature have an influence in the destruction of this vitamin. Thus, the lowest time and temperature of heating must be used to conserve this vitamin in the preservation of antiscorbutic foods. The vitamin appears to be more readily destroyed in alkaline solution than in acid. It is abundantly preserved in canned tomatoes.

The Relation of the Diet to Rickets

Dr. Paul G. Shipley, Baltimore: In the Carolinas, in the latter half of the eighteenth century, slave owners experimented with diets affecting the health of slaves, and found that certain dietaries induced dropsy and diseases of the eye. We now know that the deficiency of vitamin A in the diet is followed by such diseases as keratomalacia, xerophthalmia, night blindness, iritis and panophthalmitis. Human beings, however, are not so likely to suffer starvation in regard to one food element, as they are to suffer deficiency. Rickets is a deficiency disease, the effects of which are seen most in the skeleton; but it also involves the whole organism, including the nervous system. The pathology of the blood in this condition deserves careful attention. The normal calcium content of the blood is from 9 to 11 mg. per hundred cubic centimeters of blood; the normal phosphates from 4 to 6 mg. per hundred cubic centimeters of blood. The calcium may not be reduced, and the phosphate may be greatly reduced; and occasionally the serum calcium is reduced while the phosphate is normal. If the serum calcium falls below 5, there is tetany, either latent or manifest. To be effective, a diet must restore the normal phosphate level and the normal blood calcium. Disturbance of the calcium-phosphate ratio produces rickets in the bones, as normal bone growth depends on this balance in an optimal measure. In cases of rickets with latent tetany, there is marked blood calcium reduction. Cod liver oil seems to be the most suitable substance to compensate for faulty calcium-phosphate balance. Whether this contains a vitamin identical with vitamin A is not known. It may be different. It is, at present, uncharacterized. Another point is the influence of light in the prevention of rickets caused by a deficiency diet. Sunlight, the mercury quartz vapor lamp, the cadmium arc, the iron chromium arc and ultraviolet light are all capable of healing rickets in the presence of vitamin deficiency. Persons deprived of the normal amount of light are prone to develop rickets.

The Relation of Diet to Pellagra

Dr. Joseph Goldberger, Washington, D. C.: This article will be published in full in The Journal.

Application in Practice of the Results of Vitamin Studies

Dr. L. Emmett Holt, New York: Vitamin studies have given a new basis for the evaluation of foods: Many articles which are valueless as regards energy furnish an essential nutritive substance, entirely apart from their chemical constituents. Thus, the tomato, cabbage, spinach, lettuce, chard, green vegetables and fruits have an essential food value, although composed chiefly of cellulose, water, acids and salts. The preparation, preservation and storage of foods, rendered necessary by conditions of modern life, sacrifice a certain amount of their nutritive value, and this is true also in regard to the overrefining of flour and grains. On the other hand, food preservation gives immense advantages. White wheat flour keeps for months without deterioration, while whole wheat flour spoils within thirty days, so that its general adoption is practically an economic impossibility. The sterilization of milk, while it may injure its vitamin properties, insures protection from milk-borne diseases; and the same principle applies to preservation of vegetables, fruits and eggs. Infants are most likely to be injured by the sterilization of milk by heating, as through this process vitamin C is destroyed, though apparently vitamins A and B are not injured. To counteract this danger, some antiscorbutic must be added to the diet of infants reared on sterilized milk. The body has a store of this vitamin to last for some time, but after some months it becomes exhausted, and scurvy appears. As the winter milk of cows is deficient in vitamin content, it is well to add some vitamin-rich substance to a milk diet in winter time. The diet of the nursing mother may be affected similarly, which accounts for puzzling cases of scurvy developing in breast-fed infants. In the Philippine Islands the nursing children of rice-fed mothers often develop beriberi. Malnutrition among poor infants is due to lack of vitamins A and C in the mother's diet.

The effects of vitamin deficiency are most clearly noted in times of war, stress and famine, and are seen in prisons, army camps, on shipboard, in the Arctic, and also in infancy. Vitamins are so widely distributed in natural foodstuffs that, unless the diet of children is very one-sided, they should receive their full supply in a normal diet. Two points demand attention in vitamin investigation: one is their specificity, and the other the small amounts necessary to produce effect. Vitamin requirement, however, is affected by other conditions: confinement, exposure, hard work and poor food. Children have requirements for growth, while adults have a maintenance need only. Infants suffer most from a deficiency, as their growth is greatest and their diet most restricted.

The specificity of vitamins is absolute. They are not interchangeable, and seem to be entirely independent of one another, and each serves a definite nutritional function. There is no proof that benefit can be derived from an excess of them. A practical question is whether a relative deficiency would not produce a general condition of ill health, rather than outspoken disease. The only proof of this would be the therapeutic test, and decided improvement by addition of vitamin-rich substance. Reasoning from animal experiment, this should come in two or three weeks.

The tendency to exploit the vitamin fad commercially is to be deplored. Indispensable though these substances are, their lack is not the cause of all nutritional disturbance. The knowledge of vitamins, however, has furnished a key to many obscure nutritional problems. For children, plenty of milk and a varied diet are indispensable. Skimmed milk should be supplemented by butter. When milk is excluded, green, leafy vegetables should be used plentifully. Whole grain cereals and potatoes furnish water soluble vitamin. Fruits and canned tomatoes furnish antiscorbutic vitamin, and cabbage is rich in all vitamins.

DISCUSSION

Dr. Alfred F. Hess, New York: There has been a new era in the study of rickets in the past year. Previous to that, very few advances had been made since the work of Glissen in 1600. The disease can be produced in the rat. The disease can be regulated so that it can be cured or prevented by dietary means, although there is some limitation to the data which can be recognized by this animal experimentation. The calcium-phosphate ratio is important. There can be low calcium and normal phosphate, or there can be low phosphate and normal calcium; that is true as far as laboratory experiments are concerned, but it does not apply to a large number of cases in the clinic, because even if we give a deficient amount of milk, we get the ratio the same. If the milk is diluted, the phosphate and calcium ratio remains the same. That cannot be the chief factor, therefore, in the production of rickets. Rickets is a very common disorder of infants in the temperate zone. About 75 per cent. of breast-fed infants show more or less tendency to rickets in some form. The incidence of the disease is more marked in the winter. It is at its height in March and April. There is an increase in institutions month by month, during January, February and March. We have, therefore, to consider not only the seasonal, but the monthly incidence. I am connected with an institution in which excellent hygienic conditions are maintained, but we get this marked seasonal incidence of rickets. Light is also a factor in rickets, or, rather, the reciprocal reaction between food and light. There is a seasonal effect on the phosphate of the blood, as shown by the examination of the blood month by month. In the summer time there is a normal inorganic phosphate content of the blood, from 4 to 5 mg. per hundred cubic centimeters of blood; but it is much lower than this in January, February and March. Thus, there is a phosphate ebb and flow caused by lack of or increase of light. This has probably a direct relationship to the seasonal incidence of rickets. There is also a calcium wave, and this has particular influence on the seasonal incidence of tetany. Tetany occurs mostly in the spring. Sunlight has a direct curative effect on rickets, but one can also use artificial light, such as the mercury vapor lamp or the calcium arc light. Experiments in the laboratory showed that rats kept on a rickets diet could be prevented from having the disease by exposure to a carbon arc lamp, for three minutes a day at a distance of 3 feet.

Another interesting fact in this connection is the well known one that colored infants are much more prone to rickets than white infants. This is also true of black rats, the melanotic form of the Norway rat. Even with exposure to the mercury arc lamp the black rats develop rickets, and the white rats under similar conditions do not acquire the disease. The pigment has not allowed the light to pass to the tissues, and the pigmented skin of negro infants plays a part in their susceptibility to rickets.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

April, 1922, **60**, No. 2

Studies on Visceral Sensory Nervous System. XI. Action of Cocain and Aconitin on Pulmonary Vagus in Frog and in Turtle. N. Kleitman, Chicago.—p. 203.
Water Content of Tissues in Experimental Beriberi. D. J. Krause, Chicago.—p. 234.
Studies in Carbon Monoxid Asphyxia. II. The Growth of Neuroblast in the Presence of Carbon Monoxid. H. W. Haggard, New Haven, Conn.—p. 244.
*Relation of Splenectomy to Growth and Appetite in the Rat. A. H. Smith and L. Ascham, New Haven, Conn.—p. 250.
*Relation of the Suprarenals to Fatigue. F. A. Hartman, R. H. Waite and E. F. Powell, Buffalo.—p. 255.
Sensory Stimulation by Unsaturated Alcohols, Polyhydric Alcohols and Chlorhydrins. M. Irwin, Cambridge, Mass.—p. 270.
Successive Stimulation by Alcohols. M. Irwin, Cambridge, Mass.—p. 274.
Effect of Various Salts on Outgrowth from Experimental Amebocyte Tissue Near Isoelectric Point and with the Addition of Acid or Alkali. L. Loeb and K. C. Blanchard, St. Louis.—p. 277.
Physiology of Gastro-Enterostomy. I. Regurgitation of Intestinal Contents in Normal Dogs and Dogs with Posterior Gastro-Enterostomy. G. E. Burget and M. E. Steinberg, Eugene, Ore.—p. 308.
Pulse in Portal Vein. H. Feil and D. D. Forward, Cleveland.—p. 312.
Blood Pressure Responses to Hypersystolic Compression of Tissues. K. A. Martin and H. L. White, St. Louis.—p. 323.
*Significance of Hydremia in Secretion of Urine. H. Bakwin, New York.—p. 343.
Study of Regeneration of Autonomic Fibers in Vagus Nerve of Sheep. S. R. Burlage, Ithaca, N. Y.—p. 350.
*Secretory Action of Pancreas in Relation to Thyroid Gland. H. Hashimoto, Tokyo, Japan.—p. 357.
*Id. II. Effect of Thyroidectomy in Rats on Secretory Action of Pancreas. H. Hashimoto, Tokyo, Japan.—p. 365.
Study of Weight Regulation in Adult Human Body During Overnutrition. A. Gulick, Columbia, Mo.—p. 371.

Relation of Splenectomy to Growth and Appetite.—A study by Smith and Ascham of the body weight and food intake of the white rat after splenectomy gave no evidence of an increase in appetite or variation from the normal rate of growth. A study of the red cell count on five splenectomized rats which were the progeny of splenectomized parents showed no anemia followed the removal of the spleen.

Relation of Suprarenals to Fatigue.—The results obtained by Hartman et al. seem to indicate that epinephrin plays a very important rôle in increasing muscular work and delaying the onset of fatigue.

Significance of Hydremia and Urine Secretion.—The concentration of the blood and the secretion of urine were studied by Bakwin in a group of well infants after water and saline drinking. After water drinking a moderate hydremia occurred without diuresis. After saline drinking there was a marked blood dilution and oliguria. It is evident, therefore, that in infants hydremia alone does not necessarily cause diuresis.

Relation of Thyroid to Secretory Action of Pancreas.—Hashimoto states that feeding animals comparatively large quantities of thyroid interferes with the secretory action of the pancreas, but on the contrary feeding comparatively small quantities causes a fair increase in that function.

Effect of Thyroidectomy on Pancreas Secretion.—Experimental observations made by Hashimoto have shown that the secretory action of the pancreas varies considerably according to the amounts of thyroid secretion circulating in the body. A moderate augmentation of the thyroid secretion in the body provokes the hyperfunctioning of the pancreas, whereas a lack of the thyroid secretion induces a reduced activity of the gland. As to the part played by the thyroid secretion in the normal functioning of the pancreas, it may be inferred that the thyroid secretion acts as an excitatory autocoid on the pancreas in maintaining its normal activity. It may be concluded that the thyroid hormone does not act as a specific stimulus to a particular organ or a particular physiologic function, as does the secretin to the secretory function of the pancreas, but that it probably acts as a nonspecific stimulus generally on various physiologic functions.

Arkansas Medical Society Journal, Little Rock

April, 1922, **18**, No. 11

Encephalitis. W. M. McRae, Little Rock.—p. 205.
Prevention and Early Diagnosis of Pulmonary Tuberculosis. O. M. Bourland, Van Buren.—p. 208.
Medical Ethics. J. H. Phipps, Roe.—p. 214.
Diseases of Accessory Sinuses of Nose. R. H. T. Mann, Texarkana.—p. 215.
Utricle in Chronic Urethritis. T. N. Black, Hot Springs.—p. 218.
Treatment of Smallpox in Its Last Stage. R. L. Fraser, McCrory.—p. 220.

Boston Medical and Surgical Journal

April 27, 1922, **186**, No. 17

*Case of General Progressive Muscular Atrophy, with Recovery. J. E. Goldthwait, Boston.—p. 559.
Hematuria. E. L. Young, Jr., Boston.—p. 561.
Review of Year's Thyroid Work. F. H. Lahey, Boston.—p. 563.
Preliminary Report of Mental Clinic of Worcester State Hospital. G. F. Caldicott, Worcester, Mass.—p. 568.
*Spinal and Cistern Puncture, with Lavage, Following Apoplectiform Attack in Paresis. A. H. Ruggles and A. T. Wyatt, Providence, R. I.—p. 572.
Evaluation of Intelligence Tests in Criminal Cases. G. L. Walton, Boston.—p. 574.

General Progressive Muscular Atrophy with Recovery.—There was no question regarding the diagnosis in Goldthwait's case. There was nothing revealed in the general examination that indicated disease of the organs. The blood examination was not peculiar except that there was an almost total absence of the sugar and creatinin, which was interesting because of the marked atrophy of the muscles in which the sugar is naturally stored. Recognizing that with the low diaphragm, and consequently the slightly moving diaphragm, the circulation of the abdominal viscera must be interfered with, since the blood is pumped back from the abdomen to the heart almost entirely by the contractions of the diaphragm acting on the upwardly opening valves in the veins, correction of this seemed the logical first move. The patient was put to bed, all pillows were taken away, so that the body was kept fully straight, with the chest raised instead of the usual flexed position which results from the pillows as commonly placed under the head and shoulders. In this position the diaphragm must necessarily be raised to about the normal position, which is midway between full inspiration and full expiration, in which, unless actual paralysis of the diaphragm exists, the action will be adequate to insure the normal return flow of blood from the abdomen to the heart. To accentuate this action, several periods of a half hour each were used with the patient in the so-called "hyperextended position," with a moderate-sized pillow under the dorsal spine, with the arms raised and the hands clasped under the head. Stimulating baths were given to help the physiology through the stimulation of the superficial sympathetic nervous system. For similar reasons light massage was given, especially of the muscles of the back and loin. In the hope of more rapidly improving his general vitality, small doses of epinephrin and pituitary extract were used, but before this was started, in the period during which the examinations were being made, in which no treatment was given other than the physiotherapy and the special postures, very marked signs of improvement showed. In two weeks' time, the color had improved markedly, the muscles were in distinctly better tone. In three weeks, the patient could raise the straight leg from the bed, and at this time he was fitted to a brace which held the body fully erect and prevented flexion at the waist line, with the necessary lowering of the diaphragm. With this brace on, he was allowed up for short periods, and special exercises were started to stimulate the development of muscles of the chest and trunk. During the rest of the time, each day, he was kept in the horizontal position, and to prevent the common bending at the waist line (dorsolumbar level) in the many movements made in bed, a plaster-of Paris jacket was fitted and worn, except as it was removed for bathing or exercise, or when he was up with the brace. The patient made a very rapid removery, with the improvement showing strikingly after the first two weeks. At the end of eight weeks, not only was the functional condition markedly better, but the examination of the blood showed normal sugar and creatinin. The patient, when last seen, in 1919, was fully well and equal to all that should be expected of an active man.

Spinal and Cistern Puncture in Apoplexy.—This case would suggest the value of spinal and cistern puncture as a diagnostic aid and as a possible therapeutic procedure in some cases of suspected intracranial hemorrhage.

Canadian Journal of Mental Hygiene, Montreal

January, 1922, **3**, No. 4

Grading and Promotion of Pupils. C. B. Willis, Edmonton.—p. 291.
Outpatient Psychiatric Clinic. G. S. Mundie, Montreal.—p. 297.

Florida Medical Association Journal, St. Augustine and Jacksonville

March, 1922, **8**, No. 9

Ureteral Stricture. E. H. Teeter, Jacksonville.—p. 159.
Pyuria. J. C. Vinson, Tampa.—p. 162.
Neurosyphilis: Some Present-Day Opinions Concerning. J. D. Gable, Washington, D. C.—p. 164.
*Two Anomalies of Pregnancy. J. C. Davis, Jr., Quincy.—p. 167.
Indigestion in Young Infant. J. H. Fellows, Pensacola.—p. 168.

Abdominal Pregnancy; Fetal Anomaly.—Davis reports a case of abdominal pregnancy of five months' duration. A diagnosis of ovarian cyst had been made. There had been no pain at any time; no loss of weight; no inconvenience; nothing to attract the patient's attention to her condition other than a rapid increase in size of the right side of the abdomen. At operation Davis found a membrane adhering to the peritoneum on the right side, containing fluid, which later proved to be amniotic fluid, and a well developed male fetus, about five and one-half months' pregnancy. The amniotic membrane was attached to the peritoneum in front; no other attachment was discernible. Just posterior to this membrane was the placenta, as large as one found at the end of a full-term pregnancy. The placenta was adherent to and continuous with the omentum, enough so that it was impossible to tell where the one began and the other ended, and from the omentum came most of its blood supply. The placenta was also adherent to the lateral wall of the abdomen, ascending colon and cecum. The appendix was buried in the placental mass. The right tube was a typical pus tube. The uterus was not enlarged. There were no changes in the left tube and ovary. The second case was one of anomaly of the fetus. The head and extremities were well formed. There was an entire absence of sternum and anterior abdominal wall. The heart was anterior to the anterior chest wall and was absolutely bare. No pericardium or any other covering over heart muscle. The lungs were normal and enclosed in the thoracic cavity. The ribs on the left side going behind the heart and attached to the muscles in front of the spinal column being continuous with the attachment of the ribs on the right side. The liver, stomach, large and small intestines, omentum, pancreas, spleen and urinary bladder were all bare. The abdominal parietes only incased the kidneys.

Illinois Medical Journal, Oak Park

April, 1922, **41**, No. 4

Agitation for Free Choice of Physician in New York and What it Leads to. E. V. Delphey, New York.—p. 249.
*Treatment of Malignant Tumors of Pharynx and Larynx by Diathermy. F. J. Novak, Jr., Chicago.—p. 252.
Visceroptosis: Symptoms, Complications and Treatment. E. E. Poos, Belleville, Ill.—p. 254.
Some Surgical Aspects of Endocrines. D. Deal, Springfield, Ill.—p. 256.
Roentgen-Ray Examination of Gastro-Intestinal Tract. A. Hartung, Chicago.—p. 258.
*Acute Aneurysms. R. W. McNealy, Chicago.—p. 262.
Practical Points in Tonsillectomy. W. H. Peck, Chicago.—p. 265.
Campaign for Prevention of Syphilis. A. W. Stillians, Chicago.—p. 268.
Ocular Manifestation of Syphilis. E. F. Garraghan, Chicago.—p. 272.
Relation of Surgery to Group Practice. E. H. Weld, Rockford Clinic, Rockford, Ill.—p. 273.
Compensation for Ocular Injuries. F. Allport, Chicago.—p. 280.

Diathermy in Malignant Disease of Larynx and Pharynx.—Novak asserts that diathermy offers advantages over surgery in the treatment of these cases which are of fundamental importance. Diathermy plus radiation is superior to diathermy or radiation alone. The apparatus employed and its use are described.

Acute Aneurysms.—McNealy reports three cases in which the aneurysms developed rather rapidly, hence the term "acute." In each case the leg was involved and a history of trauma was obtained.

Journal of Infectious Diseases, Chicago

April, 1922, **30**, No. 4

*Antibody Production After Intratracheal Injection of Antigen. T. D'Aunoy, New Orleans.—p. 347.
*Study of Ammonia Production by Certain Strain of Avirulent Human Tubercle Bacillus. A. W. Bosworth, M. G. Elkins and M. E. Blanchard, Boston.—p. 357.
*Inhibitory Action of Certain Organic Mercury Compounds on Growth of Human Tubercle Bacilli. L. M. DeWitt, Chicago.—p. 363.
*Sore Throat Epidemic of Unusual Type. W. B. Sharp, J. F. Norton and J. E. Gordon, Chicago.—p. 372.
Phenol and Cresol as Preservatives in Biologic Products. P. Masucci, Glenolden, Pa.—p. 379.
Differentiation of Hemolytic Streptococci from Human and Bovine Sources by Hydrolysis of Sodium Hippurate. S. H. Ayers and P. Rupp, Washington, D. C.—p. 388.
*Streptococci in Chronic Respiratory Infections. W. R. Hodge and C. Cohen, Toronto, Can.—p. 400.
*Anaphylaxis Produced by Eye Tissues. Primary Toxicity of Eye Tissues—Organ Specificity and Group Reactions of Eye Tissues—Anaphylactic Theory of Sympathetic Ophthalmia. R. Kodama, Chicago.—p. 418.
*Inoculation of White Mice with Pfeiffer's Bacillus. Influenza Studies. IX. N. P. Hudson, Chicago.—p. 433.

Antibody Production by Intratracheal Injection of Antigens.—The intratracheal inoculation of various antigens is suggested by D'Aunoy as an apparently safe and efficient method of antibody production especially with virulent organisms for which laboratory animals are highly susceptible as antigens.

Ammonia Production by Avirulent Tubercle Bacilli.—A study of the nitrogenous metabolism, during six weeks, of a certain avirulent culture of human tubercle bacilli revealed the fact that there is a continuous production of ammonia in plain, dextrose, mannitol and glycerol broths. Over 30 per cent. of the nitrogen originally present in the medium may be converted to ammonia. The ammonia produced is partly retained in the medium but the greater part is lost through volatilization. The loss of ammonia is coincident with an alkaline reaction of the medium.

Effect of Organic Mercury Compounds on Tubercle Bacilli.—According to DeWitt the power of phenol to inhibit the growth of the human tubercle bacillus is greatly increased by the substitution of a mercury salt in place of one of the hydrogens, hence a mercury united by one bond to carbon. It is also increased by the substitution of one NO_2 group for one hydrogen in the ring. The position of the NO_2 group has much to do with the degree of increase of the inhibitory power, the ortho position being most favorable and the para position next. This is probably due to a quinoidal change in the phenol nucleus. The position of the mercury group also has much influence on the degree of increase of inhibitory power, the ortho position seeming most favorable. The mercury bridge compounds seem also to have a high inhibitory power, at least in the two compounds tested, in both of which the bridge occupies the ortho position. Although saligenin or phenol carbinol has the same inhibitory power as phenol, the mercury derivatives of this have a greatly increased efficiency, varying somewhat with the percentage of mercury; one compound, however, which has less mercury but in which both a nitro and a mercury group occupy the ortho position with respect to the hydroxy group, has a higher inhibitory power. In the anilin compounds also the substitution of a mercury group greatly increases the efficiency. The nitro group also increases the inhibitory efficiency but not in the same order of position as in the nitrophenols, since the quinoid change does not readily take place in the anilin nucleus. However, the anilin compounds having the nitro group in the ortho position and the mercury salt in the para position seem more efficient than if the order is reversed. Methyl and ethyl groups do not materially affect the antiseptic power of the anilin compounds, although these compounds having methyl or ethyl groups plus nitro groups plus mercury groups have a very high antiseptic power, not apparently varying much either with the percentage of mercury or with the relative position of the different groups.

Hemolytic Streptococcus and Pneumococcus Cause Sore Throat.—The data presented by Sharp, Norton and Gordon show the occurrence of a sore throat epidemic of an unusual clinical type. A hemolytic streptococcus and a Type IV pneumococcus were found simultaneously in the tonsillar regions of a group of children with the symptoms described. The streptococcus was of an unusual cultural type, belonging to Holman's group *S. infrequens.* The hemolytic streptococcus is known to be at times the etiologic factor in sore throats. That the Type IV pneumococcus present in the group might be pathogenic is suggested by its presence unaccompanied by hemolytic streptococci in one case of acute inflammation. One of the most striking features was the carrier condition. It is impossible to say how long this was maintained, but in five of eight instances it persisted for not less than eight weeks as shown by finding immunologically identical organisms continually on the tonsils during this period. Hemolytic streptococci were found after twelve weeks. The finding of specific strains of hemolytic streptococci and of Type IV pneumococci, biologically identical with those from the group of children intensively studied, in convalescents among high school students and in children in other grades of the elementary school indicated the prevalence of these organisms throughout the whole school. The possibility of contact among the children existed and was substantiated by certain well established instances. The persistence of clinical symptoms closely parelleled the ocurrence of the two specific strains of the organisms. These symptoms were so mild after the earliest examinations as almost to escape attention. This epidemic may have been due to one of the organisms or to their stimultaneous action.

Streptococci in Chronic Respiratory Infections.—The chief aim of the study made by Hodge and Cohen was to determine the constancy or inconstancy of types of streptococci occurring in chronic nontuberculous respiratory infections. The streptococcal flora in various samples of sputum from the same source, is, in patients with bronchial asthma, fairly constant and quite complex, from eight to fourteen types of streptococci occurring in single specimens. The streptococcal flora in various particles from the same sample of sputum does not vary. The simple method of using a twenty-four hour serum broth culture of a washed particle of sputum as a basis for vaccine preparation seems as efficient as any, the streptococcal flora in such a culture being approximately parallel to that in the sputum itself. There is, in general, a close parallelism between the grouping of streptococci arrived at through biochemical (fermentation) and serologic (agglutination) reactions. Certain members (a′ 2.1) of Brown's suggested alpha prime group of streptococci are of particular interest; these a′ 2.1 strains are universally agglutinated by all of seven antistreptococcal serums, but produce agglutinins active against their own type of strain only. Absorption experiments indicate that this organism contains a fundamental unit which occurs in each one of the more complicated streptococci used for immunization in our series.

Anaphylaxis Produced by Eye Tissues.—This work was undertaken by Kodama to study the organ specificity and the group reactions of the eye tissues. The cornea, lens, and vitreous body were used free from blood; the retina, uvea, uvea pigment and optic nerve were carefully washed as free from blood as possible. It appears that each eye tissue studied contains several antigens (anaphylactogens) in varying amounts, in addition to a specific or chief antigen peculiar to itself. The cornea and vitreous body contain in greater or less degree anaphylactogens that are common to all the different tissues of the eye. On the other hand, the lens and uvea contain the smallest number of associate anaphylactogens, the retina and optic nerve standing between. Applying these results to the anaphylactic theory of sympathetic ophthalmia, it is concluded that the active agent of that disease needs no to be uvea pigment alone as believed at present, as other elements in the uvea and in other eye tissues may play the same rôles as the uvea pigment is assumed to play. This enlargement of the anaphylactic theory of sympathetic ophthalmia readily takes in the form in which papilloretinitis develops, a process that the present pigment theory does not explain.

Pfeiffer's Bacillus Produces Immunity in Mice.—Pfeiffer's bacillus, when injected intraperitoneally in pure culture, Hudson found to be pathogenic for white mice irrespective of the source, and was readily recovered from the heart blood by cultivation on chocolate-agar medium. Strains isolated during influenza epidemics at military camps were more pathogenic for white mice than strains from other sources. The invasiveness of both Pfeiffer's bacillus and *Streptococcus viridans* seemed to have been increased by injections in mixed cultures: the bacillus by injection with pneumococcus, and the coccus by injection with Pfeiffer's bacillus. Pfeiffer's bacillus was not found to be appreciably increased in virulence by passage three or four times through white mice. Sublethal doses from one-fourth to one-sixteenth slant of the strains used of Pfeiffer's bacillus conferred immunity to white mice against lethal (one-half slant) and twice lethal (one slant) doses of heterologous as well as homologous strains. This immunity lasted at least eight weeks.

Journal of Metabolic Research, Morristown, N. J.

March, 1922, **1**, No. 3

Relations Between Fertility and Nutrition. II. Ovulation Rhythm in Rat on Inadequate Nutritional Regimens. H. M. Evans and K. S. Bishop, San Francisco.—p. 335.

*Nonsurgical Duodenobiliary Drainage in Diabetes and Hypertension Cases. J. J. Selman, Morristown, N. J.; H. S. Martland, Newark, N. J., and M. J. Synnott, Montclair, N. J.—p. 357.

*Treatment and Progress in Diabetes F. M. Allen and J. W. Sherrill, Morristown, N. J.—p. 377.

Nonsurgical Duodenobiliary Drainage in Diabetes.—The negative findings in forty-nine of fifty-three diabetic cases, Selman et al. state, harmonizes with the view that most cases of diabetes are not the result of ascending duct infections extending into the pancreas, but are more probably due to previous attacks of blood borne infections, such as the acute infectious fevers. This group of cases represent most likely the vestigium of "old burnt-out conflagrations." There is an appreciable number (six out of twenty cases) of patients who have had symptoms of previous affections of the biliary or upper abdominal region who do show evidences of existing infections. In five of these cases (namely, four of frank diabetes and one of pancreatitis with incipient diabetes) it is important to clear up these infections in order to eliminate one of the main factors contributing toward downward progress. In the case of hypertension, elimination of the focus may destroy a toxic bacterial etiologic factor tending to maintain the hypertension. If medical measures will not suffice, the question is open as to the extent to which prophylactic surgery, should be attempted. The Lyon method, in Selman's opinion, is the only available nonsurgical diagnostic procedure to determine directly whether or not the biliary system is infected. When infection is shown to be present, this method offers a mode of therapy, the value of which in certain cases of diabetes remains to be demonstrated by future observation.

Treatment and Progress in Diabetes.—The various clinical observations made by Allen and Sherrill cannot be recapitulated in detail; however, the results of the present treatment in the milder types of diabetic cases, especially after the age of 40, is regarded as being highly satisfactory, as most such patients can be maintained in comfort and usefulness, the dreaded complications of diabetes can be avoided virtually altogether, and any downward progress can be prevented or reduced to such a minimum that the normal span of life can probably be completed, all at the price of simple precautions in diet. Every dietetic treatment of the severe and progressive types of diabetes leaves much to be desired. No form of diet has ever succeeded in restoring weight and strength. It is believed that the best results, practically as well as theoretically, are obtained when cases are diagnosed early and treated from the outset by reduction of the total diet proportioned to the severity of the diabetes. Whether the notoriously progressive tendency of the worst cases of diabetes, especially in the young, represents merely high susceptibility to injury from dietary excesses and from infections, and whether such downward progress may be completely prevented by an ideal degree of functional rest as indicated by continuous absence of hyperglycemia, is still not positively decided. A combination of clinical and pathologic evidence makes this a plausible hypothesis, at least theoretically.

Journal of Radiology, Omaha

April, 1922, **3**, No. 4

Physical Foundations of Deep Therapy. A. Bachem, Frankfort, Germany.—p. 123.
Treatment of Focal Infection of Throat by Roentgen Ray as Compared with Surgical Removal of Tonsils and Adenoids. W. D. Witherbee, New York.—p. 129.
Roentgen-Ray Treatment of Tonsils with Conjoint Use of Ultraviolet Rays. A. J. Pacini, Washington, D. C.—p. 131.
Radiotherapy of Diseased Tonsils. R. H. Lafferty and C. C. Phillips, Charlotte, N. C.—p. 132.
Organ Stimulation by Roentgen Ray. W. F. Petersen and C. C. Saelhof, Chicago.—p. 135.
Status of Radiologist in Small Communities. U. S. Kahn, Binghamton, N. Y.—p. 139.

Minnesota Medicine, St. Paul

April, 1922, **5**, No 4

Duluth as an All-the-Year-Round Health Resort. Comparison with Saranac Lake, N. Y. A. T. Laird, Nopeming,—p. 201.
Experiments Developing Technic for Study of Chemistry of Nutrition and Growth. J. F. McClendon and W. S. Bowers, Minneapolis.—p. 203.
Endocrines and Sympathetic. G. Vercellini, St. Paul.—p. 211.
Developmental Variations. M. I. Bierman, Minneapolis.—p. 216.
Goiter Surgery. F. J. Plondke, St. Paul.—p. 220.
Pyemia of Otitic Origin. H. Newhart, Minneapolis.—p. 228.
Studies on Respiratory Organs in Health and Disease. V. Comparison of Lung Capacity Readings and Physical Signs in Pulmonary Tuberculosis. J. A. Myers, Minneapolis.—p. 233.
Health of School Children. B. C. Bernard, Lake Park.—p. 238.
Mental Hygiene and General Practitioner. J. G. Michael, Minneapolis.—p. 240.
Marginal and Jejunal Ulcers Following Gastro-Enterostomy. F. C. Schuldt, St. Paul.—p. 243.

New Orleans Medical and Surgical Journal

April, 1922, **74**, No. 10

Conservation of Gallbladder. F. W. Parham, New Orleans.—p. 650.
Juvenile Deforming Osteochondritis; Report of Cases. E. D. Fenner,—p. 659.
Cough and Laryngologist. A. I. Weil.—p. 668.
Nonspecificity of Vaccines. V. E. Kea, Atlanta, Ga.—p. 675.
Reputed Vesicating Properties of Granary Weevil, Calendra Granaria. W. A. Riley, Minneapolis.—p. 678.

Pennsylvania Medical Journal, Harrisburg

April, 1922, **25**, No. 7

Abduction Treatment in Fracture of Neck of Femur. G. M. Dorrance and E. C. Murphy, Philadelphia.—p. 449.
*Nonunion of Fractures of Neck of Femur. M. S. Henderson, Rochester, Minn.—p. 452.
Recurrence of Hernia. H. R. Owen, Philadelphia.—p. 458.
*Splenic Anemia. R. L. Engle, Philadelphia.—p. 464.
Postdiphtheritic Paralysis. T. J. Elterich, Pittsburgh.—p. 467.
Local Responsibility for Community Welfare with Special Reference to Tuberculosis. A. P. Francine, Harrisburg.—p. 469.
*Acute Tuberculosis. G. W. Norris and D. L. Farley, Philadelphia.—p. 472.
Typhoid Fever; Correlation of Laboratory and General Practitioner. R. A. Keilty, Danville.—p. 477.
Correlations of Neuropsychiatry and Internal Medicine. C. K. Mills, Philadelphia.—p. 480.
General Principles Underlying Treatment of Syphilis. J. H. Comroe, New York.—p. 482.
Shall Physician Make Doctor of His Boy? T. Diller, Pittsburgh.—p. 488.
Likelihood of Error in Abdominal Diagnosis. A. W. Hammer, Philadelphia.—p. 489.

Nonunion of Femoral Neck Fractures.—Forty-three consecutive cases of nonunion of fracture of the neck of the femur are analyzed by Henderson. The patients had had bone pegging, heterogenous or autogenous, or metal pegging operations for nonunion of the fracture. The average time since the fracture was sustained and the time of operation was more than one year. Three patients in the series could not be traced. Eight were operated on by using metal nails or screws. Three operations were successful and three were failures; two patients were not traced. Twenty-five had autogenous bone pegging; fifteen were cured; nine were not cured, and one patient died on the second day of cerebral embolus. Necropsy showed a thrombus in the common iliac vein. It is probable that death was caused by a small piece of this thrombus becoming detached and passing from the right auricle to the left side of the heart through a patent foramen ovale. In seven younger patients recently operated on, beef bone screws were used, and all were cured. Two were operated on by the Brackett method and obtained satisfactory results. Of the forty patients who could be traced twenty-seven (67.5 per cent.) were cured. They obtained bony union. Either heterogenous or autogenous pegging was used in thirty-five patients. One of these was not traced. Twenty-four of the thirty-four patients traced were cured. However, some of the patients considered cured do not have ideal results. They have bony ankylosis and stability; a few have stiffness. Henderson believes that the main causes of stiffness following operations for nonunion of fractures of the neck of the femur are dissecting too extensively and driving in the peg so deep that injury is inflicted on the joint surfaces. In spite of the limitation of motion the results are very satisfactory; function is good.

Splenectomy for Splenic Anemia.—Engle relates the case of a boy, aged 9, whose spleen was removed for splenic anemia. Within the month after operation he had four serious gastric hemorrhages for which he was transfused. A year later he showed remarkable improvement.

Acute Pulmonary Tuberculosis.—A study of 100 selected cases of acute tuberculosis was made by Norris and Farley for the purpose of analyzing these cases, especially from the standpoint of diagnosis, with as far as possible a correlation of antemortem and postmortem findings. Of the 100 cases eighty-two were diagnosed by postmortem recovery of the organism, or by the roentgen ray showing miliary tubercles of the lungs. The eighteen remaining cases were clinically typical with spinal fluid mononucleosis, etc. In seventy cases meningeal symptoms predominated. In the remaining thirty the picture clinically was more like that described in the textbooks as general miliary tuberculosis. Eighty per cent. of the cases of tuberculous meningitis had general miliary lesions throughout the body as well as in the meninges. In 90 per cent. of these cases a tuberculous lesion of some variety was found elsewhere than the meninges. The average duration of disease of all types from history of onset to death was 36.5 days. Admission diagnosis was noted in forty-five cases of the series. This diagnosis was more often wrong than right. It was approximately correct in 47 per cent. of the cases. In the remaining 53 per cent. typhoid fever was the most frequent wrong diagnosis. Eighteen per cent. of the cases were diagnosed acute lobar pneumonia. All of these were of the general miliary type. The remaining wrong diagnoses included uremia, malaria, cirrhosis of liver, spondylitis and septicemia. On postmortem examination an active tuberculous lesion of some sort was found in the chest viscera in 90 per cent. of the cases. The pleura was involved in 58 per cent. and the lungs in 80 per cent. It is an interesting fact that approximately one third of the patients with meningitis did not stress headache as their chief complaint. These were the cases most often suspected to be typhoid. Their history was usually that of malaise, mild headaches, loss of appetite, prostration, fever and in some cases diarrhea. In nine cases there was a history of nose bleed. Convulsions occurred in 12 per cent. of all cases. There was a history of vomiting in 40 per cent. Night sweats occurred in 14 per cent. Only six patients complained of abdominal pain; yet on postmortem examination 80 per cent. of the subjects had tuberculous involvement of some abdominal viscera. In only three was the spleen enlarged sufficiently to be felt. By weight the spleen was found distinctly enlarged only once. A general adenopathy was present in five cases. Stiffness of the neck was apparently more reliable as a sign of meningeal irritation than Kernig's sign. It was often definitely present when Kernig's sign was doubtfully positive or negative. About one fourth of the total number of meningitic cases gave a negative Kernig's sign on admission to hospital. Forty-five per cent. of cases had miliary tubercles of the kidneys, yet outside the usual albuminuria with occasional hyaline casts, there was usually nothing to convict the kidneys. The high percentage of cases showing lesions of the kidneys suggests that efforts to find tubercle bacilli in the urine should be made more frequently.

Philippine Journal of Science, Manila

December, 1921, **19**, No. 6

*Various Methods of Serum Application in Bacillary Dysentery. P. T. Lantin, Manila.—p. 629.
Unsymmetrical Addition to Double Bond. I. A Theory of Reaction Mechanism of Direct Union. G. A. Perkins, Manila.—p. 645.

Charophyta from Annam and Guam. J. Groves, Yarmouth, England. —p. 663.
Philippine Wasps of Subfamily Sphecinae. S. A. Rohwer.—p. 665.
Two New Species of Plants from Hainan. E. D. Merrill, Manila.—p. 677.
Dissociation of Hexaphenylethane from Viewpoint of Octet Theory of Valence. H. I. Cole, Manila.—p. 681.
New or Noteworthy Philippine Birds. IV. R. C. McGregor, Manila.—p. 691.
Violets of Philippines. Von Wilhelm Becker, Rosian (Magdeburg).—p. 707.
Secondary Sexual Characters in Loach Misgurnus Anguillicaudatus Cantor. K. Okamoto, Tokyo, Japan.—p. 723.
Structure of Chlorine Dioxid and Related Compounds. G. A. Perkins, Manila.—p. 729.
Cercospora Leaf Spot of Coffee. C. G. Welles.—p. 741.
Cercospora Leaf Spot of Averrhoa Carambola. C. G. Welles.—p. 747.

Antidysenteric Serum Administered by Rectum.—Various methods of administering antidysenteric serum were used by Lantin, namely, (1) by the rectum alone, (2) intramuscular injection and by rectum (enema), (3) intramuscular injection alone, (4) intramuscular and intravenous injection, (5) intravenous injection alone. In view of the established facts, set forth by qualified observers, Lantin says, the local use of the serum seems not to be unscientific. Considering well the morbid changes in the large intestine, where acute inflammation and ulceration are taking place, and recalling that that is the site where the virus flourishes best, continuously elaborating the toxins, the working basis for the use of the local application of serum is evident. As it has been found that the serum is both antitoxic and bactericidal, its administration would mean, then, the neutralization, locally, of the unobserved toxins and the decreased vitality of the virus, if not its actual death. Clinical observations seem to support this view. Twenty-four hours after the administration of serum by rectum, the patient feels a marked alleviation of the subjective symptoms; the colicky pain is diminished, as well as the tenesmus; stools decrease in number; and the temperature is lower. During succeeding days the stools become less bloody and mucoid, then feculent, and then of soft consistence. This method is of great advantage only when the patient is able to retain the serum for a long period. Many patients prefer this method because it is not painful. The combined method (serum by rectum and intramuscular injection) has given just as good results as any method of administering the serum, and is safer than the intravenous method. Above all it must be given early, even in cases in which bacillary dysentery is only suspected, in order to produce good results.

Texas State Journal of Medicine, Fort Worth

April, 1922, **17**, No. 12

Diagnosis of Chronic Infection of Gallbladder and Ducts. H. T. Wilson, San Antonio.—p. 564.
Duodenal Tube in Diagnosis and Treatment of Diseases of Biliary Tract. O. B. Kiel, Wichita Falls.—p. 568.
Intestinal Tube from Diagnostic and Therapeutic Standpoint. S. T. Lowry, San Antonio.—p. 571.
*Significance of Pain in Right Abdomen. R. W. Baird, Dallas.—p. 574.
Pneumoperitoneum. C. L. Martin, Dallas.—p. 577.
*Case of Intestinal Obstruction Due to Diverticulum and Accessory Pancreas. C. Johnson, Fort Worth.—p. 579.
Gambusia Affinis, Natural Agent for Destroying Mosquito Breeding in Texas. G. W. Park, Austin.—p. 579.

Significance of Pain in Abdomen.—Of 500 cases analyzed by Baird which the chief complaint was pain in the right abdomen, 211 proved to be cases of appendicitis; neuritis, 96 cases; cholecystitis, 83 cases; pyelitis, 54 cases; salpingitis, 26 cases; pleuritis, 6 cases; ileocolitis, 6 cases; vasitis, 4 cases; urticaria (erythema nodosum), 2 cases; visceroptosis, 9 cases, and undetermined, 3 cases.

Intestinal Obstruction Due to Diverticulum.—In Johnson's case an ileac diverticulum, the length and size of a glove finger, with the distal end stuck to a loop of small intestine, caused obstruction. There was a small glandular body the size of a kidney bean attached to the tip of the diverticulum and the loop of intestine. The diverticulum was located approximately twenty-four inches from the cecum, springing from the ileum. A small mesentery was present. The diverticulum was removed and the stump inverted. Recovery was uneventful. The small glandular body proved to be pancreatic tissue.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 8, 1922, **1**, No. 3197

Rise and Progress of Laryngology. W. Milligan.—p. 547.
*Nature and Significance of Heart Symptoms. J. Mackenzie.—p. 551.
*Peptic Ulcer. K. W. Monsarrat.—p. 553.
*Treatment of Perforated Gastric and Duodenal Ulcer. A. H. Southam. —p. 556.
*Hereditary Microphthalmia. W. M. Ash.—p. 558.
Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 559.
Hemorrhagic Colitis. T. MacCarthy.—p. 560.

Nature of Mechanism Regulating Heart Beat.—The mechanism concerned in regulating the heart beat, Mackenzie says, belongs to the vital process included under the term "reflex." The cells taking part in this mechanism belong to two groups: an extrinsic, connected to the nervous system by the vagus and sympathetic nerves, and an intrinsic, which includes the sino-auricular and auriculoventricular nodes, and the Purkinje cells in the bundle and auricles and ventricles. Agents of disease (toxins) which modify the rate and rhythm act on different parts of this mechanism, and certain disease agents produce characteristic effects. Drugs that influence the rate and rhythm of the heart act in the same way, some of them also producing characteristic effects. As toxins act on the same parts as drugs the effects of drugs will be modified by the effects of the toxins. Before the effects of a remedy can be investigated it is necessary to know if the toxins have not already produced an effect which will interfere with the action of the remedy. The kind of knowledge which disturbances of the reflex process reveals is limited to the variations in rate and rhythm, and they give no information regarding the functional efficiency of the heart.

Treatment of Peptic Ulcer.—The necessity for operative treatment of peptic ulcer, apart from complication, Monsarrat states, arises from its resistance to other forms of remedy. In treatment attention must be paid to three main points: (1) the ulceration itself; (2) the activity, or excessive activity, of the gastric secretion, and the default of the mechanism which normally controls this; (3) the disturbances of motor function which precede and account for both. Surgical treatment deals with ulcer (1) by methods of removal which leave no embarrassing deformity behind; (2) by anastomosis, which provides a permanent check on the peptic attack of the gastric juice; (3) by removing any focus of disease elsewhere. In all the cases reviewed by Monsarrat there had been a lengthy period of medical treatment extending from many months to many years. The surgical remedy for duodenal ulcer is posterior gastrojejunostomy. In gastric ulcer healing is most certainly brought about by removal of the ulcer. In all the cases recorded by Monsarrat the method employed was the posterior Polya or Reichel operation.

Treatment of Perforated Gastric Ulcer.—The treatment of perforated gastric and duodenal ulcer in Southam's opinion is entirely surgical, and the prognosis largely depends on the time when operation is performed. Recovery is contingent on early diagnosis and prompt surgical treatment, for delay almost inevitably leads to a fatal termination. During a period of two years he operated in a consecutive series of forty-six cases of acute perforated gastric and duodenal ulcer. Four patients died following the operation, giving an operation mortality of less than 9 per cent.

Hereditary Microphthalmia.—Ash presents the history of a family affected with hereditary microphthalmia. Among thirty-four traced members there were eleven cases of congenital blindness. All the affected members were males, the condition being transmitted through healthy females, as in hemophilia; the children of male members of the family are normal. In that branch of the family in which Ash has been particularly interested, of four boys three are blind from congential microphthalmia, while the twin brother of one of the boys is normal. The one female child is normal. The father and mother are normal persons. In fact, the parents of all the blind children throughout the family are apparently normal. There is no evidence of consanguinity in the family and no history or evidence of syphilis. One is an epileptic; all the other children are free from congenital or acquired disease apart from microphthalmia.

Calcutta Medical Journal

January, 1922, **16**, No. 7

Organotherapy in Modern Medicine. B. C. Roy.—p. 5.
Internal Secretion of Thyroid and Parathyroids. J. C. Aich.—p. 9.
Internal Secretion of Suprarenal Glands. A. Chakravarti.—p. 23.
Internal Secretion of Pituitary Body (Hypophysis Cerebri). S. P. Neogy.—p. 31.

February, 1922, **16**, No. 8

Ductless Glands in Relation to Female Reproductive System. S. N. Bagchi.—p. 41.
Internal Secretion of Pancreas. I. Basu.—p. 50.
Gastro-Intestinal "Hormones," or Internal Secretion of Stomach and Intestines. A. Banerji.—p. 62.
Internal Secretion of Spleen. J. C. Aich.—p. 66.
Internal Secretion of Liver. A. Chakravarti.—p. 68.
Internal Secretion of Kidneys. J. C. Aich.—p. 71.
Internal Secretion of Testes. D. N. Banerji.—p. 73.
Internal Secretion of Thymus. G. Panja.—p. 77.
Internal Secretion of Pineal Gland. J. Chandra.—p. 80.

Lancet, London

April 15, 1922, **1**, No. 5146

*Sixty-Five Patients Seeking Relief After Short-Circuiting Operations. E. I. Spriggs and O. A. Marxer.—p. 725.
*Arsphenamin Jaundice: Its Causation, Incidence and Treatment. F. Chamberlain.—p. 733.
*Two Cases of Malformation of Kidney in Infancy. E. B. Smith and E. H. Shaw.—p. 737.
Impetigo Contagiosa as Seen in Schools. A. I. Simey.—p. 738.
*Extensive Human Infection by Sarcoptic Mange of Horse. R. A. S. Macdonald.—p. 738.
Further Experiences with Schick Test. R. A. O'Brien, A. J. Eagleton, C. C. Okell, A. T. Glenny and E. M. Baxter.—p. 739.

Results of Short Circuiting Operations.—Of the sixty-four consecutive patients whose cases are described by Spriggs and Marxer, fifty-one had had a gastro-enterostomy performed, nine a partial colectomy, and four an ileosigmoidostomy. About half the patients who sought relief after gastro-enterostomy recovered from their symptoms or improved greatly with lapse of time and suitable medical treatment. In most of the remainder a detailed investigation showed abnormalities which are capable of relief by a further operation. The conditions which call for a second operation are the persistent failure of medical treatment and inability of the patient to live a normal life: particularly if it can be demonstrated that bile is regularly in the stomach, or that the stoma is not in the lowest part causing accumulation of food between the stoma and the pylorus, or that the jejunal loops are not normal in appearance, or that there is dilatation of the duodenum and regurgitation of bile; or if there is evidence of ulceration in the neighborhood of the stoma, or of active ulceration of the stomach or duodenum. Except for structural disease, Spriggs and Marxer state, short-circuiting operations on the colon should not be performed unless (1) suitable and persistent medical treatment has failed; and (2) sound scientific reasons can be put forward for believing that the operation will benefit the patient. In all cases of chronic alimentary disease treatment, and especially operative treatment, should not be undertaken until the case has been investigated as thoroughly as the circumstances permit.

Arsphenamin Jaundice.—In a series of 1,200 arsphenamin treated cases of syphilis analyzed by Chamberlain there had been sixty-four cases of jaundice. The cases fall into four groups: (1) jaundice occurring some time after treatment, fifty-four cases; (2) jaundice occurring immediately after injection or accompanied by a recurrence, four cases; (3) cases in which arsphenamin had not been used, two; (4) fortuitous jaundice, four cases. The factors in the problem are: (1) the drug, (2) the method, (3) the surgeon, (4) the disease, and (5) the patient. It seems that the use of a combination of substitutes, or of a substitute which is difficult to dissolve, is a possible factor in the causation of jaundice. There seems to be a definite balance in favor of the syringe method. Dosage by itself does not seem to be a factor. The previous administration of arsphenamin, or irregularity in administration, seems to be a decided factor. The operator does not seem to cause jaundice, but in so far as he is concerned in the storage of the drugs he must be considered as a factor. The state of the disease is not a factor. Some men are intolerant of arsenic in any form, others can be rendered arsphenamin sensitive by previous injection of the drug. A strong healthy type of man is exceedingly unlikely to get jaundice. A weakly or degenerate type is likely to get jaundice as the result of any of the noxious factors. The administration of mercury, whether by pill, intravenous or intramuscular injection, concurrently with arsphenamin medication, seems to play no part. The facts enumerated suggest that the possible noxious factors are, in order of importance: (1) a "sensitizing" dose or course of arsphenamin; (2) irregularity in intervals between injections; (3) use of more than one arsenobenzol compound in the same course; (4) storage of the drug in a warm place; (5) gravity method, unless a new rubber tube is used after every few injections; (6) relative insolubility of the drug; and that all these factors are rendered immeasurably more noxious if the patient be degenerate, uncared far, or an alcoholic.

Malformation of Kidney.—In one of the cases reported by Smith and Shaw a condition of bilateral hydronephrosis was shown, with marked dilatation and convolution of the ureters, which were duplicated on either side. An elongated tumor felt during life was an enormously dilated and tortuous left ureter. The kidneys, ureters, and entire bladder were removed and submitted to dissection, an account of which is given. In the second case both kidneys were slightly enlarged, both exhibited a moderate degree of hydronephrosis, the pelves and calyces being widely dilated and the kidney tissue reduced in each instance to a narrow belt from one-quarter to one-third inch in diameter. From the upper pole of the right kidney there arose from a narrow orifice a widely dilated and convoluted ureter an inch in diameter. This ureter ended blindly in the right side of the bladder wall. From the pelvis of the same kidney a moderately dilated and tortuous ureter descended and opened normally into the bladder. From the left kidney a similar malformed ureter arose normally from the pelvis and presented a normal ureteric orifice in the bladder. The wall of the latter was distinctly thickened and hypertrophied. No signs of obstruction could be detected at either opening of the ureters or at the urethral orifice. Sections of the kidney tissue showed no abnormal changes.

Human Infection by Sarcoptic Mange of Horse.—The circumstances of the outbreak reported on by Macdonald are peculiar. A class of veterinary students was engaged in the performance of postmortem operations on a horse. The horse had a history of generalized sarcoptic mange, the disease having gained such a hold that it was considered an unsound economic proposition to proceed further with treatment. It was destroyed one morning at 10 a. m. and thereafter was left lying on a concrete floor while the students palpated, dissected, and operated on the carcass for a period of time which varied with the individual from two to five hours. Of the students who had any contact with the carcass in question, approximately 53 per cent. became infected. On the other hand, the noninfected individuals were either those who were engaged on the head and neck (which parts had been cured by the previous treatment) or those who had been little more than onlookers, in that they had been engaged in swabbing incisions, etc., to assist the actual operators. In short, of these students whose hands and clothing came into direct and prolonged contact with the infected carcass 100 per cent. complained of subsequent symptoms. The most constant symptoms common to every case were: itch of a most pronounced and continuous nature, accentuated by surface warmth, induced by exercise, by lying in bed, and by friction in the process of inunction of the affected areas, and a papular eruption present in all the affected cases at the site of contact with the carcass—i. e., forearms, ankles, and calves of the legs. The hands in most cases, though not in all, escaped infection, no doubt owing to washing with phenol soap immediately after, or in some cases during, the work on the dead subject. The carcass was scraped twenty-four hours after death. *Sarcoptes scabiei* were found to be present in abnormally large numbers.

Medical Journal of Australia, Sydney

March 11, 1922, **1:** No. 10

Pharmacy and Chemistry of Australian Pharmaceutical Formulary. R. C. Cowley.—p. 259.
Indications for Tonsillectomy in Children. R. M. Downes.—p. 261.
Syphilis in Children. H. B. Graham.—p. 265.
Psychiatric Clinic. R. A. Noble.—p. 269.
*Chronic Intussusception. H. H. Schlink.—p. 270.

Chronic Intussusception.—Schlink's patient, aged 7, recovered from the acute symptoms which accompanied the invagination of the cecum as well as the ileocecal valve and lower part of the ileum into the ascending colon. Peristaltic action gradually passed the intussusceptum on until the apex lodged in the rectum. The patient lived two months after the onset of the trouble as if the large bowel had been excised. No blood appeared per rectum either during the acute initiation of the intussusception or during its progress along the ascending, transverse and descending colons, or while resting in its final position. Reduction was effected and the patient made an uneventful recovery.

Sei-I-Kwai Medical Journal, Tokyo, Japan

March, 1922, **41**, No. 1

*Obstruction of Hepatic Portion of Inferior Vena Cava and of Hepatic Veins Due to Syphilis. T. Kimura.—p. 1.

Obstruction of Veins in Liver Due to Syphilis.—Of the eighty-two cases of obstruction of the hepal portion of the inferior vena cava reported in the literature, eighteen (22 per cent.) were syphilitic. Kimura is of the opinion that the condition is more common than has been believed to be the case. He has seen four cases. It seems that a pressure due to gumma formation and a cicatrical contraction of scar tissue are to be considered as a primary cause of this change. Thrombosis, which is often observed in the cases of obstruction due to syphilis, appears to develop secondarily as the result of slowing of the blood current and local irritation due to propagation of the syphilitic lesion. As regards to a relationship between obstruction of the inferior vena cava and those of hepatic veins, Kimura believes it is possible that these changes may occur independently in both vessels; therefore Sternberg's contention may be correct.

South African Medical Record, Cape Town

March 11, 1922, **20**, No. 5

Relations Between Gonorrhea and Diplococcus Neisseri. C. Pijper.—p. 82.
*Two Cases of Brain Tumor. F. H. Kooy.—p. 88.
Etiology and Treatment of Accidental Hemorrhage. E. C. Crichton.—p. 91.

Brain Tumors: Endothelioma; Sarcoma.—One of Kooy's cases was diagnosed tumor of the central gyrus. The tumor was removed easily, being encapsulated and free from the brain. Pathologic examination proved it to be an endothelioma. The chief symptoms were a paresis of the left leg and convulsions. A few days after operation, the patient got severe headache, and a complete paralysis of the left arm. By puncture a rather deep abscess was found, opened, and drained in. In the course of the next week this abscess healed, but the complete paralysis of the left arm remained. The attacks had stopped, and the headache was nearly entirely gone. Soon after he got the jacksonian fits again, also the headache; afterward he got into a semicomatose condition, finally ending in complete coma and death. In the second case the absence of any affection of the cranial nerves, the rather sharp cerebellar localization, and the predominance of the increased intracranial pressure over the meningeal symptoms, decided in favor of the diagnosis of tumor. The symptoms suggestive of a lesion of the left cerebellar hemisphere were: a marked adiadochokinesis in the left arm and hand, a hypermetria with deviation to the left, cerebellar asynergia, again with tendency to fall to the left and with deviation to the left when walking. Percussion of the left occipital bone was painful. The marked hypermetria, adiodochokinesis, and asynergia made it certain that this tumor was situated in or on the left cerebellar hemisphere. The fact that all the symptoms were most marked in the arm suggested a localization rather anteriorly in the left lateral lobe. This supposition was proved to be correct by operation. Pathologic examination proved it to be a sarcoma. The patient improved quickly after operation, and was discharged nearly completely recovered.

Annales de Médecine, Paris

January, 1922, **11**, No. 1

*Diagnosis of Pleuropulmonary Fistula. L. Bard.—p. 1.
*Mineral Water Diuresis. P. L. Violle.—p. 19.
*Tumor of Corpus Callosum. G. Guillain.—p. 33.
*Therapeutic Action of Light. F. de Groer.—p. 52.
*Regeneration of Parenchyma Tissue. Nathan.—p. 59.
*Plant Cancers. G. Roussy and M. Wolf.—p. 75.

Fistulas with Artificial Pneumothorax.—Bard presents arguments to prove that the tearing of some adhesion during the course of an induced pneumothorax is liable to cause a fistula between pleura and lung, and that this is a frequent cause of the pleural effusion so often noted in these conditions. He describes a simple tube and glass of water test; air bubbles through the water as the patient coughs. The intrapleural pressure drops at once, but then in a minute or two it returns to the previous figure. If the tube is pinched, the pressure does not vary with the coughing.

The Diuresis During Courses of Mineral Waters.—Violle practices at the French spa, Vittel, and his experience has shown the importance of graduating the course of mineral waters to the exact individual functional capacity of the kidneys. In the majority, the diuresis is proportionally more abundant with small amounts of mineral waters than with large. Everything depends on the permeability of the kidneys, and the aim in treatment is to graduate the intake to utilize to the utmost what permeability there is. It is possible to estimate this by the record of the output of urine as the patient drinks 25 gm. of water every fifteen minutes, during and between meals, to a total of 500 gm. and no other fluids, reclining all the time and urinating each hour regularly. The charts from a number of cases are given, showing how by utilizing the information obtained from this test diuresis it was possible to adjust the course of the mineral waters to insure the maximum of benefit. In one case an obese diabetic had high glycemia; glycosuria of 35 gm.; positive Gerhardt reaction; intense anemia, asthma, continuous headache and inadequate urine output, but the blood pressure was not very high. Violle kept him in bed and gave 500 gm. of water in amounts of 50 gm. every fifteen minutes. The chart shows the defective elimination of urine at first, gradually improving, until by the fifth day the output equaled the intake, and then progressively surpassed it, while the sugar dropped to 11 gm., and there was no further headache or hypertension.

Tumors of the Corpus Callosum.—Guillain describes a case in which the diagnosis of a tumor in the corpus callosum of the man of 52 was confirmed by necropsy. He compares with this the similar cases on record, and outlines the clinical picture that suggests a tumor in the splenium of the corpus callosum. The mental disturbances occur earlier, he says, and are more characteristic than with tumors elsewhere in the brain.

Therapeutic Action of Light.—De Groer declares that the effect of exposure to the sun's rays is analogous to that of parenteral protein therapy. There is a typical hemoclastic crisis, but this is transient, and is followed by leukocytosis. When only a well tanned region is exposed to the rays, the hemoclasis does not occur. The pigmentation evidently protects against it. Hence, he continues, the regions exposed should be systematically arranged so as to have always some nontanned region available. The changes liable to be induced throughout the organism by the exposures to the chemical rays were instructively shown by the Schick test. He inoculated the back with diphtheria toxin, four and two hours before the test, during the test, and again two and four hours afterward. Instead of completing the test with antitoxin, as in Schick's original method, he exposed the abdomen to the chemical rays, and gives an illustration which clearly shows the difference in the reaction when the system is or has been recently under the influence of the chemical rays. Every prolonged exposure to them acts like a poison on living matter. Besides the local inflammatory reaction, the absorption of products from the damaged cells induces a general reaction. The mechanism of protein poisoning from an extensive burn differs only in degree from that induced by the action of sunlight or mercury vapor light. He adds that in applying the chemical rays we must discriminate between their ergotropic action, their disinfecting action, and their irritating action, pigment production being merely a product of local inflammation.

Restoration of Parenchyma.—Nathan refers to Champy's extravital cultivation of cells of mixed epithelium and connective tissue. When the latter far outnumbered the epithelium cells, their reproduction practically crowded out the epithelial cells. But when the latter were predominant, they proliferated regularly and profusely. Nathan has realized this same cultivation of epithelial cells, but his culture medium was loose connective tissue. He transplanted this into the midst of the parenchyma of a living organ in its normal place. The parenchyma cells grew into the connective tissue, and in this way a large defect in the parenchyma might fill up with true parenchyma tissue. This repair cannot occur when the parenchymatous organ is enclosed in its tight capsule, separating it from all the connective tissue around. His experimental research on rabbits has confirmed the possibility of restoration in this way of a defect in the liver, kidney, thyroid and peripheral nerves and also of bone tissue when loose-meshed connective tissue is implanted. Ten photomicrograms show the results in rabbits and dogs. The functional value of the restored tissue is still a question, as also whether there is any prospect of applying this method in treatment of chronic liver and kidney diseases in man.

Cancer in Plants.—Roussy and Wolf remark that all the plant tumors known to date are of infectious origin. Like the infectious sarcoma of birds, they seem to be intermediate between inflammatory processes and neoplasm processes, but further research may classify them more definitely.

February, 1922, **11**, No. 2

*Syphilitic Diabetes Insipidus. J. Lhermitte.—p. 89.
*Malarial Edema. P. Sainton, C. Richet, Jr., and Schulmann.—p. 128.
*Oculogastric and Oculocolic Reflex. D. Daniélopolu et al.—p. 143.
*Case of Latent Neurosyphilis. C. I. Urechia.—p. 158.
Primary Fulminating Pneumococcus Meningitis. G. Bickel.—p. 168.

Syphilitic Diabetes Insipidus.—Lhermitte's diagnosis in a case reported was polyuria secondary to syphilitic meningitis at the base of the brain, and this was confirmed by necropsy, the meningeal lesions being restricted to the region of the infundibulum and the tuber cinereum. He reviews the experimental, clinical and necropsy data that have been published on this region in relation to diabetes insipidus, and its connection with syphilis, tuberculosis and trauma, the effect of spinal puncture and of pituitary treatment, and gives photomicrograms from his case. The patient was a tabetic of 65. The final conclusion from all this material is that diabetes insipidus must be regarded as a derangement of kidney secretion, and that this derangement is conditioned by a severe pathologic condition limited to the tuber cinereum and its infundibular prolongation. The threshold for water is lowered, and there is nothing surprising in the fact that this lowering of the threshold is secondary to a primary lesion in the vegetative center at the base of the brain, the center regulating the hydratation of the organism. The endocrine system can be exculpated.

Edema of Malarial Origin.—In the two cases of anasarca in the course of malaria, reported here, the heart and kidneys seemed to be intact, and there was no albuminuria. The subsidence of the edema under quinin treatment confirmed its malarial origin.

Oculogastric and Oculocolic Reflexes.—Compression of the eyeball induces a number of reflexes involving viscera, as well as the familiar oculocardiac reflex. Daniélopolu reports extensive research on them and on the mode of their production.

Latent Neurosyphilis.—Urechia reproduces the microscopic findings in a man of 42 with positive spinal puncture findings, slight anisocoria and extreme asthenia, who had died from the effects of aortitis plus coronaritis. His syphilis was of fifteen years' standing and the brain showed ameboid transformation of the neuroglia.

Bulletin Médical, Paris

March 25, 1922, **36**, No. 13

*Artificial Pneumothorax. G. Kuss.—p. 241.
*Artificial Pneumothorax for Dilatation of Bronchi. E. Rist.—p. 246.
Indications for Artificial Pneumothorax. P. Ameuille.—p. 249.
Artificial Pneumothorax for Gangrene of Lung. D. Denéchau.—p. 253.

April 1, 1922, **36**, No. 14

Conflicting Clinical and Laboratory Findings After Prolonged Artificial Pneumothorax. Hervé and Legourd.—p. 267.

Artificial Pneumothorax.—Kuss analyzes the mode of action and the reasons for failure, and warns of dangers to be avoided in inducing the pneumothorax. A fine trocar is safer than a needle, pushing a blunt guide beyond the tip when the pleura is reached. Manometer control is indispensable, and he never forcibly insufflates the nitrogen but lets the patient aspirate it as he breathes, the intake ceasing at each expiration. If adhesions are to be stretched and broken, he advises to use oxygen rather than nitrogen at this sitting. Oxygen is more readily absorbed and it reduces the danger of gas embolism, although not suppressing it entirely. It is better to begin insufflating not more than 200 or 300 c.c. of the gas, proceeding tentatively and slowly. One of the conditions essential for success is good hygiene.

Artificial Pneumothorax in Treatment of Dilatation of the Bronchi.—Rist says that of the 22 patients with bronchiectasis in his service since June, 1919, the condition had been mistaken for pulmonary tuberculosis in 14. Several in this group had spent years in a sanatorium. In 11 the bronchiectasis had developed after pneumonia; it had followed measles or scarlet fever or whooping cough in several, a foreign body in 2 cases, and in another case a syphilitic origin seemed probable. Rist has applied artificial pneumothorax in treatment of a number of these cases, and the results have been very gratifying when the location of the dilatation was such as to insure ample drainage. In one man the compression seemed to kink the outlet, and the dyspnea was not relieved until the compression was reduced. A partial pneumothorax plus thoracoplasty was required in some cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 17, 1922, **46**, No. 10

*The Frontiers of Syphilis. P. Merklen.—p. 461.
*Iodized Oil in Roentgenoscopy. Sicard and Forestier.—p. 463.
Nonpenetration into Trachea of Certain Supposed Intratracheal Injections. C. Lian et al.—p. 470.
*Visual Epileptic Equivalents. A. Léri and Béhague.—p. 472.
Bradysphygmia on Effort in Case of Heart Block. C. Laubry and A. Mougeot.—p. 479.
Hereditary and Familial Ophthalmoplegia. M. Pinard and Béthoux.—p. 483.
Serotherapy plus Calcium in Gonococcus Rheumatism. B. Weill-Hallé and H. Chabanier.—p. 486.

The Frontiers of Syphilis.—Merklen objects to a recent statement that hysteria and kleptomania are manifestations of inherited syphilis, while Pinard reiterates that inherited syphilis — often even in the second generation — breeds kleptomaniacs.

Iodized Oil as Contrast Medium in Radioscopy.—Sicard has obtained very instructive radiograms by injecting an oil solution of iodin into the epidural and other cavities, and even into the bronchi and lungs. The oil has to be injected directly into the trachea for the latter.

Visual Epileptic Equivalents.—Léri and Béhague report seventeen cases of visual disturbances occurring just before or with epileptic seizures or as an equivalent. Analysis of the cases demonstrated that these visual auras or equivalents were observed only with a lesion in the occipital lobe. In addition to these epileptic cases they describe a case suggesting ophthalmic migraine except that the stars, colored waves and other visual phenomena and headache were bilateral. There was chronic bilateral otitis in the man of 42, dating from childhood, and these phenomena were probably due to some meningeal or cortical reaction in the occipital region. In another case syphilitic meningitis induced the visual phenomena, followed in three or four minutes by an epileptiform seizure. Under specific treatment the seizures ceased, but there is still occasionally the vision of a brilliant whirling wheel.

Gynécologie et Obstétrique, Paris

March, 1922, **5**, No. 3

*Hysteropexy During Pregnancy. A. Rosner.—p. 185.
Relaxing and Contracting of Myomatous Uterus During Laparotomy; Three Cases. O. Beuttner.—p. 191.
*Hysterotomy for Placenta Praevia. Brouha.—p. 198.
*Galactoceles. E. Grynfeltt and Tzélépoglou.—p. 204. Conc'n.
*Pituitary Treatment of Metrorrhagia. S. Mossé and M. Fabre.—p. 228.

Hysteropexy and Gestation.—The hysteropexy in Rosner's case had entailed unyielding adhesions, and he broke them up through a laparotomy, four months before term, without interfering with the pregnancy. The effect of hysteropexy is that the uterus wall does not stretch evenly, and this has to be supervised as the pregnancy progresses, ready to operate unless the adhesions stretch.

Abdominal Hysterotomy for Placenta Praevia. — Brouha regards hysterotomy as indicated when the hemorrhage is menacing, the cervix is still long and closed, and the placenta is attached centrally or at the extreme margin. He prepares completely for the operation, and then waits until certain that ordinary measures are ineffectual. Six of the eleven women thus treated by abdominal cesarean section were primiparas. Recovery was smooth in eight cases, febrile in two, and one woman died four hours later from the anemia resulting from preceding hemorrhages. There was very little bleeding at the high hysterotomy in any instance; this incision avoids the site of the placenta.

Galactoceles.—The first part of this article was reviewed on page 1347. Nearly five pages of bibliographic titles are appended here.

Pituitary Treatment of Metrorrhagia. — Mossé and Fabre explain that pituitary treatment acts by inducing a vasoconstrictive action on the vessels, in the uterus and ovaries, and by checking the internal secretion of the ovaries as well as by inducing contraction of the uterus musculature. They have found it extremely useful in the over-profuse hemorrhages at puberty, arresting excessive bleeding and warding off further excess when the pituitary extract is injected a few days before the next menses. It has also aided in arresting hemorrhages at the menopause, as also in metrorrhagia of emotional origin. Pituitary treatment is not called for in cases of tumor, infection or heart, liver or intestinal derangement. As pituitary extract raises the blood pressure, the heart and pressure should always be examined beforehand.

Journal de Médecine de Bordeaux

March 25, 1922, **94**, No. 6

*Primary Acute Typhlitis. L. Verdelet and J. Chavannaz.—p. 167.
*Pneumococcus Endocarditis. Creyx, R. Damade and C. Massias.—p. 168.
Stages and Limits of Tranvesical Prostatectomy. J. Oraison.—p. 170.
*Ink Test for Suspected Jaundice. J. L. Roumaillac.—p. 173.

Primary Acute Typhlitis.—Verdelet and Chavannaz report the case of a man of 64 with perforation of the anterior portion of the cecum, entailing death by general peritonitis.

Mitral and Auricular Pneumococcus Malignant Endocarditis. — Creyx and his co-workers report the subacute course in a man of 26 of an infectious pneumococcus ulcerovegetative endocarditis producing anemia, emaciation and fever, septicemia and fatal embolism in old rheumatismal heart lesions.

Ink Test for Subjaundice.—Roumaillac has used what he calls his violet ink test for several years to disclose faint, atypical jaundice in the skin. Violet color is the proper reflector of yellow, and increases its intensity wherever it comes in contact with it. To examine a patient in whom he suspects icterus, not yet apparent in the skin, he traces a line with his fountain-pen filled with violet ink. At once the zones of skin separated by this line take a very apparent yellowish tint.

Journal de Radiologie, Paris

March, 1922, **6**, No. 3

Radiologic Anatomy of the Lungs. J. Garcin.—p. 110.
Radiotherapy of Malignant Tumors. Perthes.—p. 122.
*Photography with Radium Emanation. A. Kotzareff.—p. 131.

Radium Emanation for Photography of Organs. — Kotzareff states that the emanation of radium in solution form can be used by subcutaneous, muscular or intravenous injection and also in cavities. It can be injected with or without an opaque substance. He cites a case of carcinoma of the uterine cervix, in which, after three injections in the tumor the plate revealed four well defined lobes. He believes that radiumgraphy can be introduced now in practical medicine, especially when a roentgen-ray apparatus is not available, but its technic must be improved. It should be useful in cancer of the esophagus, of the rectum, in fractures, etc., because it does not require the fatiguing moving of the patient, as only one plate is developed. The photograph of the lesion is a valuable possible by-effect of the treatment. The future only will reveal if it can be used in diagnosis, and if the radium emanation in solution form will render real services in therapeutics. After an intravenous injection of 15 millicuries in one woman with uterine cancer and cerebral metastasis, pains became less frequent and she regained sleep. The patient did not present any disturbance due to the injection.

Journal d'Urologie, Paris

February, 1922, **13**, No. 2

*Bilateral Polycystic Kidney. S. Rolando (Genoa).—p. 81.
*Phimosiectomy. Dartigues and Roucayrol.—p. 95.
*Electric Treatment of Bladder Tumors. J. Martin.—p. 99.
Perforation of Acute Ulcer of Bladder. G. Jean.—p. 103.
Tuberculous Pseudocystic Kidney. Reynard.—p. 107.

Polycystic Kidneys.—In 4 of Roland's 6 cases of bilateral polycystic kidneys there were no pains, but in one case acute pain with nausea and vomiting returned several times. The kidneys were enlarged, the left kidney pushing up the diaphragm and lung, the right kidney being pushed down by the liver. Polycystic kidneys are probably of congenital origin. He advises abstention from operative measures unless one's hand is forced by complications. In a recent compilation of 126 cases treated by nephrectomy, 38 died, 32 were cured and the outcome was uncertain in 56. Hematuria and anuria are complications only in an advanced stage, but infection of the polycystic kidney requires the usual treatment for suppuration in the kidney. In his first case, the woman of 35 died from the anesthesia and trauma of an exploratory laparotomy. The large right tumor had been supposed to be of genital origin, and the liver was polycystic as well as both kidneys. In all his cases the left kidney had escaped palpation as it pushed up the diaphragm. The only means to demonstrate the enlargement of the left kidney was by radioscopy, the lower margin of the left lung being found at the eighth or ninth rib instead of at the tenth rib as usual.

Phimosiectomy.—This term is used to indicate therapeutic circumcision in case of phimosis, followed by an invaginated circular suture. Six illustrations show the exact technic.

Tumors in the Bladder.—Martin reports the case of a man of 65 with recurring hematuria and numerous sessile tumors in the bladder, some of them bleeding. Malignant disease was assumed, and the high frequency current was applied at one sitting and again lightly on two occasions. Five months later not a trace of the tumors could be discovered. They had evidently been benign papillomas.

Lyon Chirurgical

January, 1922, **19**, No. 1

Transient Paralysis of Recurrent Laryngeal Nerve After Goiter Operations. L. Bérard.—p. 1.
Stock Vaccine Therapy of Adnexitis. G. Cotte and J. Creyssel.—p. 11.
*Reinfusion of Extravasated Blood. T. Rietz.—p. 34
Stock Vaccine Therapy of Adenophlegmons. L. Plisson.—p. 48.
*Hypotension in Cerebrospinal Fluid. R. Leriche.—p. 57.

Reinfusion of Extravasated Blood.—Rietz reports extensive experiments on 7 dogs, inducing intra-abdominal hemorrhage and then restoring the extravasated blood to the blood stream. The intervals ranged from fifteen minutes to nineteen hours. A kind of soft coagulation occurs, and this defibrinates the balance of the extravasated blood so that it does not coagulate on standing even for a week, or even when coagulating substances are added to it. The clots formed are small and soft, showing that they contain relatively few blood corpuscles, and the process thus differs somewhat from ordinary coagulation. The fluid blood has the aspect of normal blood, but its character is that of defibrinated blood, and thus it is adapted for infusion. This defibrination is probably realized by the respiratory and peristaltic movements in the abdomen.

The erythrocytes keep their normal color and shape, up to nineteen hours at least. Two of the dogs died after the idiotransfusion. The reinfusion in these animals had been done before the defibrination had occurred. This fact he accepts as the explanation of the fatal outcome. Coagulation had not occurred but was on the point of occurring, and it did occur after the extravasated blood had been infused. This upset the colloidal balance in the blood stream, with fatal results. To avoid this, the extravasated blood must be examined to see if it still coagulates or not, and wait till coagulation no longer occurs. To insure greater safety, he advises citrating the blood to about 4 per thousand, and straining the blood through filter paper or a double gauze compress. He warns against injecting fresh blood, and urges very slow infusion. The risks of this idiotransfusion seem to be greater, the more intense the anemia.

Clinical Pictures from Subnormal Pressure in the Cerebrospinal Fluid.—Leriche declares that too little cerebrospinal fluid is liable to cause symptoms just as well as too much. Headache, vertigo, convulsive phenomena and semiunconsciousness may be due to an acute or chronic deficiency of cerebrospinal fluid. The proof of the causal connection is afforded by the immediate cure when the amount of fluid is increased. The favorable effects of subcutaneous saline infusion may often be traced to the return of the cerebrospinal fluid to its normal pressure thereafter. He describes some instructive cases to illustrate this. In one young epileptic an abnormally low tension was corrected by subcutaneous injection of serum or intravenous infusion of distilled water, with the result that he had no further seizures. In a case of epilepsy, the *état de mal* subsided rapidly after a single intravenous injection of distilled water. He suggests that convulsions in children ought to be studied from this point of view. The hypotension may induce a semicomatose condition, like that with hypertension except that it is never so intense. It is more a profound torpor, and therapeutic raising the tension banished it in a few minutes in one case in which much fluid had escaped through a fracture of the petrous bone. As the fluid continued to ooze through the fracture, the semicoma returned again and again after the infusions of distilled water until the flow was finally stanched, and the patient recovered completely. These clinical pictures from hypotension have been observed after lumbar puncture; after war wounds of the skull and other trauma of the head; in a case of trigeminal neuralgia following herpes zoster, and in a case of headache long persisting after poisoning from illuminating gas. The amount of fluid may be inadequate from losses, from insufficient production, or from enlargement of the spaces that contain it. He has never tried pituitary treatment, but in two cases some improvement followed pericarotid sympathectomy. Surgical measures need scarcely be considered, however, as infusion seems to answer every purpose.

Lyon Médical

Feb. 10, 1922, **131**, No. 3

*Protein Therapy for Soft Chancres. L. M. Bonnet and P. Juvin.—p. 91.
Pathogenesis of Cancer. F. Duplant.—p. 128. Conc'n.

Protein Treatment of Soft Chancres.—Bonnet and Juvin state that protein treatment of adenitis and buboes due to soft chancres has been the subject of numerous works in various countries, and they here report thirteen of their own observations. They injected a uniform dose of 5 c.c. while some authors gave progressive doses of from 5 to 10 c.c. From the first injection the inflammation and pain decreased, and this action was more or less durable. Subsequent injections as a rule produced a similar action. Virulent buboes assume the aspect of a cold abscess and they generally heal then easily with an ordinary galvanopuncture.

March 25, 1922, **131**, No. 6

*Chronic Non-Tuberculous Arthritis. M. Durand.—p. 235.

Arthrodesis of the Hip-Joint in Chronic Nontuberculous Arthritis.—In Durand's case the man of 55 had suffered since the age of 24 from a chronic arthritis becoming more and more crippling. The patient was neither tuberculous nor syphilitic, and had no nervous disease, and never had had gonorrhea or trauma of this joint. The hip-joint under roentgen examination appeared to be normal, but the grave disturbances entailed by the arthritis called for arthrodesis. He sutured the capsule and immobilized in plaster, and thus obtained a very strong ankylosis, with disappearance of pain, and satisfactory function.

Paris Médical

March 25, 1922, **12**, No. 12

*Spartein a Depressant for Heart. J. Minet et al.—p. 245.
Myiasis of the Eye. A. Gabrielides and J. Guiart.—p. 249.
Treatment of Scoliosis. C. Roederer.—p. 251
*Treatment of Dacryocystitis. G. Pacalin.—p. 256.

Spartein a Depressant for the Heart.—Experiments on frogs and dogs and on healthy human subjects as well as clinical experiences have confirmed Minet's impression that spartein is useless in treatment of heart disease.

Chronic Dacryocystitis.—Pacalin advocates cauterization with 50 per cent. zinc chlorid in cases of chronic suppuration in the lacrimal sac, and reports a successful case in a young woman. The chronic dacryocystitis called for operative treatment, but this the patient absolutely refused. The simplicity of this treatment, which can be done in the office, the patient seated, and the complete success without any scar are special advantages of this treatment, which in some cases, but not all, insures the permeability of the lacrimal passages. The only drawback is the length of the course of treatment, thirteen days in his first case. He has applied the method in a number of others since.

Progrès Médical, Paris

Jan. 21, 1922, **37**, No. 3

Technic of Abdominal Radium Puncture of the Parametrium. Richard and R. Dupont.—p. 25.
Diverticula of the Bladder. Legueu.—p. 26.
Negative Reaction to Tuberculin in Children with Lung Affections. Nobécourt.—p. 28.
Chronic Asthenia and Mania. R. Benon.—p. 30.
*Hydrotherapy in Acute Prostatitis. Derecq.—p. 32.

Hydrotherapy in Acute Prostatitis.—Derecq reports a case to illustrate the advantages of hydrotherapy in certain cases of acute prostatitis of gonococcus origin. The acute prostatitis totally incapacitating the man of 28 was so severe that operative measures seemed indispensable for the impending abscess, but all the symptoms subsided under local heat: repeated injection of hot water into the rectum, and, twice a day, a ten-minute sitz bath with jets of hot water playing on the sacrolumbar region and perineum, the feet in hot water. The general circulation was stimulated by scrubbing the entire body with a haircloth glove and soap, concluding with interrupted jets of hot water at 40 C. By the eleventh day the cure was complete. Derecq has had a number of equally favorable cases.

Schweizerische medizinische Wochenschrift, Basel

March 23, 1922, **52**, No. 12

*Nutritional Derangement in Infants. E. Wieland.—p. 293.
*Coagulation Time. R. Feissly.—p. 300.
Pneumothorax Apparatus. E. Leschke.—p. 301.
Action of Lenses in Spectacles. C. A. Hegner.—p. 302.
"Geographic Distribution of Epilepsy." R. Ammann.—p. 303.

Nutritional Disturbances in Infants.—Wieland reviews the experiences in different countries with the butter-flour mixture and other innovations in infant feeding, but says that, in Switzerland, nothing of the kind seems to be needed to raise healthy children outside of the hospitals. The old and tried methods demonstrate their value constantly anew, provided the correct quantitative ratio between the child and the intake is observed, namely, the individual tolerance.

The Coagulation Time.—Feissly illustrates a coagulometer of simple device which, he says, is free from the drawbacks of the usual methods of estimating the coagulation time. He adds that for this purpose the blood should always be examined fasting.

Chirurgia degli Organi di Movimento, Bologna

February, 1922, **6**, No. 1

*Embryogenesis of the Articulations. G. Faldino.—p. 1.
Mechanism of Fractures. C. Ghillini.—p. 12.
*Myxomas in Articulations. G. Bolognesi.—p. 17.
*Experimental Lengthening of Limbs. O. Nuzzi.—p. 33.
*Treatment of Elephantiasis of the Leg. A. Pignatti.—p. 49.

*Reconstruction of the Tibia. U. Trinci.—p. 63.
Dislocation of Astragalus and Scaphoid. G. Bonani.—p. 71.
*Operative Treatment of Talipes Cavus. I. Scalone.—p. 83.
*Irreducible Dislocation of Hip Joint. D. Maragliano.—p. 92.
Fracture of Head of Femur. F. Satta.—p. 97.
Osteomyelitis from Colon Bacillus. F. Satta.—p. 103.

Genesis of the Articulations.—This study is based on a monster.

Myxoma in Knee.—The pure primary myxoma in the knee of the man of 30 had developed with a clinical picture deceptively simulating a tuberculous joint and synovia process.

Experimental Lengthening of Limbs.—Nuzzi experimented on living and dead rabbits to determine the limits to which the muscles could be stretched without injury. It seems to be the rule that the soft parts can be stretched to correspond to any artificial lengthening of the skeleton or parts of it. The lengthening is borne better when done gradually, in stages.

Elephantiasis.—Pignatti applied Kondoleon's method in a man of 24, with excellent results, surpassing those, he says, obtainable by any other method. (An illustrated description of this technic was given in The Journal, May 30, 1914, p. 1720.)

Reconstruction of the Tibia.—Trinci has operated on two more children with an extensive gap in the tibia by sliding the fibula along to partly bridge the gap. In ninety days the fibula in one case had grown to more than twice its former diameter. A strip from the sound tibia was also implanted, and this insured a solid support. The success of the operations was hampered by the preceding chronic osteomyelitic process responsible for the defect in the first place, but the ultimate outcome is satisfactory.

Operative Treatment of Talipes Cavus.—Scalone's illustrations show the wedge which he cut out of the arch of the foot and then replaced, turning the wedge upside down, so that the broad end was in the sole instead of in the dorsum of the foot. He applied this technic to both feet of one young man with bilateral deformity.

Irreducible Luxation of the Hip-Joint.—Maragliano drove a bone-periosteum peg slanting through the femur up into a niche made for it in the ilium. This rendered the hip-joint solid, and the peg increased in size and grew firmly into place, the implant acting like a new neck for the femur. The bone peg was 17 cm. long (about 7 inches) and 1.6 cm. in diameter. One great advantage of this method is that the bone implant is entirely outside the zone of the pathologic joint process, and the latter heals when the irritation from the functional use of the joint stops.

Policlinico, Rome

March 27, 1922, **29**, No. 13

*Tuberculous Abscess in Tongue. D. Taddei.—p. 409.
*Influence of Gestation on Ovarian Cysts. L. C. Carboni.—p. 412.
*Action of Blisters on Lungs. C. Farmachidis and L. Grossi.—p. 416.
The Menace of Bubonic Plague. A. Filippini.—p. 417.

Primary Tuberculous Abscess of the Tongue.—The nodule had been noted for nearly two months when it ulcerated and was removed. A guinea-pig inoculated from the lesion succumbed to tuberculosis. No other manifestations of tuberculosis could be discovered in the woman of 52.

Influence of Gestation on Ovarian Cysts.—In the case described—the young woman at the eighth month of her first pregnancy—the diagnosis had been hydramnios, but she was delivered at term of a normal child. The abdomen continued to enlarge very rapidly and 10 liters of fluid were drawn from the ovarian cyst which was resected as soon as she had recovered from the childbirth.

Action of Cantharidin Blistering on Circulation Below.—Farmachidis and Grossi describe experiments on dogs which demonstrated that the blister had only a slight influence on the circulation in the lung, but the kidneys were found gorged with blood and showing signs of inflammation.

March 1, 1922, **29**, Medical Section No. 3

*Syphilis of the Spleen. A. Furno.—p. 123.
Inherited Syphilis with Separation of Epiphyses and Chondrocalculosis. M. Divella.—p. 143.
Sachs-Georgi and Meinicke Tests. L. Philippson.—p. 155.
Multiple Echinococcosis of the Lungs. B. Masci.—p. 163.

Syphilis of the Spleen.—Turno reports three cases of enlargement of the spleen with anemia in syphilitic women, with fever in two. Treatment of the syphilis was followed by return to normal conditions. In another woman, the syphilitic disease of the spleen had assumed the form of typical Banti's disease in its second phase, and this subsided completely under treatment of the syphilis. Intermittent fever, often preceded by a chill, and the positive Wassermann reaction differentiated it from true Banti's disease, as also the fact that the spleen was not so large as in Banti's disease, while it was more painful. In another woman, the splenomegaly was accompanied with hemolysis but the Wassermann test was negative. Treatment as for syphilis, however, was followed by rapid recuperation of the blood, the number of erythrocytes in fifty days running up from 1,550,000 to 3,800,000, the hemoglobin from 25 to 55 per cent. while the spleen subsided to normal size. This case teaches the necessity of tentative treatment for syphilis in hemolytic processes before considering splenectomy, regardless of the outcome of the Wassermann test. Women seem particularly inclined to syphilitic disease of the spleen, and it is liable to occur at any stage and with inherited syphilis. Enlargement of the spleen with simple anemia is most common, but the anemia may resemble the pernicious type. Specific treatment is usually effectual in all phases of the disease; if not, splenectomy may be required, which gives brilliant and durable results.

Riforma Medica, Naples,

Feb. 27, 1922, **38**, No. 9

*Pathogenesis of Chronic Kidney Disease. U. Parodi.—p. 193.
*Reflex Scoliosis. G. Lionti.—p. 199.
Multiple Nodular Tumors in Skin. G. Spremolla.—p. 202.
Present Status of Operative Treatment of Goiter. De Quervain.—p. 206.

Pathogenesis of Bright's Disease.—Parodi argues that nephritis with edema and high arterial pressure is a glomerular nephritis. The interstitial changes that complete the chronic clinical picture are probably secondary to the glomerular lesions. The course depends on the collateral circulation that may develop with the glomerular changes.

Reflex Scoliosis.—Lionti recalls that among the numerous disturbances for which a movable kidney may be responsible, reflex lumbar scoliosis must not be forgotten. In a case described, in a woman of 27, there had been disturbance from the sagging kidney for twelve years, beginning with sudden pain in the right hypochondrium, and the pain returned at intervals afterward. Slight curvature of the spine toward the painful side followed. After nephropexy by Tricomi's method, all disturbances ceased and the spine straightened.

Archivos Españoles de Pediatría, Madrid

February, 1922, **6**, No. 2

*Hydatid Cysts in the Brain. Luis Morquio.—p. 65.
*Bladder Calculi in Children. I. Sánchez Covisa.—p. 104.

Hydatid Cysts in the Brain.—In Morquio's forty-eight cases of brain tumors in children, 50 per cent. were hydatid cysts. He describes four typical cases to illustrate the variety of clinical pictures that may be induced. Operative measures may give good results with small superficial cysts, but the central ones are generally diagnosed too late for successful removal.

Bladder Calculi in Children.—Sánchez Covisa has operated by the suprapubic route in fifty-three cases of bladder calculi in children under 15. All recovered but two without any complications. The youngest child was only 21 months old. The largest concretion was in a boy of 12, the calculus measuring 2.5 by 3.5 by 5 cm. The two fatalities were in children of 2½ and 3; they died within twenty-four hours, in convulsions. Some endocrine derangement must have rendered them exceptionally susceptible to the anesthetic. Diuresis had continued apparently normal and the wound was in good condition.

Brazil-Medico, Rio de Janeiro

Jan. 28, 1922, **1**, No. 4

D'Herelle's Bacteriophagum. Costa Cruz.—p. 45.
Mosquito Parasite: Caulleryella Maligna. A. Godoy and C. Pinto.—p. 46.
The Radio-Active Waters of Lyndoia. A. Ricardo.—p. 47.

Feb. 4, 1922, **1**, No. 5

Intrasaccular Suture of Humeral Artery with False Aneurysm. O. Ramos.—p. 57.
*The Bregmocardiac Reflex. A. L. Pimenta Bueno.—p. 60.
Toxicity of Chenopodium. Reply. T. de Almeida, Jr.—p. 60.

The Bregmocardiac Reflex.—Pimenta Bueno has found that pressure on the bregmatic fontanel slows the heart action. This was a constant phenomenon in the healthy hospital nurses tested. He points to this as further corroborative testimony for his theory as to variations in the intracranial circulation being a factor in the principal cardiovascular syndromes. His theory was recently summarized in these columns, April 22, p. 1237.

Feb. 11, 1922, **1**, No. 6

*Cultivating Plague Bacilli from the Blood. A. Gavião Gonzaga.—p. 69.
Recent French Literature on Bone and Joint Surgery. F. Masmonteil.—p. 73.

Feb. 18, 1922, **1**, No. 7

Bismuth in Treatment of Syphilis. P. de F. Parreiras Horta and P. Ganns.—p. 81.
Clinical Teaching in England. O. Clark.—p. 83.

Plague Septicemia.—Gavião emphasizes the frequency of plague septicemia, and the necessity for an early diagnosis of the disease. Among 163 cases of plague at the isolation hospital there were six with such a mild course that the correct diagnosis could not have been made without the blood cultures. Three were in children. The septicemia is more frequent, occurs earlier, and the prognosis is not so grave as generally assumed.

Revista Médica del Uruguay, Montevideo

February, 1922, **25**, No. 2

*Criminal Abortion and the Law. M. Becerro de Bengoa.—p. 49.
*Chronic Epidemic Encephalitis. C. Payssé.—p. 94.

Criminal Abortion and the Law.—Becerro de Bengoa compares the legislation in different countries on criminal abortion, and suggests a model law to remedy some of the existing abuses. He insists that the unmarried and the poor should be judged differently from well-to-do married women, when it is a question of induced abortion. Among the authorities he cites is one writer who says that a woman who wishes to interrupt her pregnancy is by that very fact proved to be abnormal, and hence her offspring will be defective. Therefore no obstacle should be placed to prevent the abortion in her case.

Chronic Epidemic Encephalitis.—In Payssé's case the woman of 36 tried recently to commit suicide as she had lost all hope of improvement. The myoclonus, tremor, hemiparesis, contracture, and parkinsonism were of nearly two years' standing. The cerebrospinal fluid contains over 1 gm. of glucose but no albumin or cells.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1922, **169**, No. 1-2

*After Amputation of Femur. F. Sauerbruch.—p. 1.
*Surgical Treatment of Dorsal Scoliosis. E. K. Frey.—p. 13.

Amputation of Femur.—Sauerbruch was able to make a stout and serviceable long stump in two cases after high amputation or exarticulation of the femur. He accomplished this by incising the leg on the median line below the knee, cutting the tibia across at the ankle, and turning the whole leg back on the thigh. The condyles and the skin of the popliteal space then formed the distal end of the stump. The gap between the stump of the femur and the lower end of the tibia—now turned back to form its upper end—was bridged with a segment cut from the fibula, in one case. The illustrations show the method and the excellent outcome in the two cases.

Surgical Treatment of Dorsal Scoliosis.—This article issues also from Sauerbruch's service. Experimental scoliosis was induced by tying together several ribs on one side in dogs and guinea-pigs. The scoliosis was more pronounced when the ribs on the other side were severed. In cadavers, likewise, tying ribs together on one side, after section of ribs on the other side, always induced scoliosis. The more elastic the thorax and spine, that is, the younger the subjects, the greater the degree of the scoliosis which resulted, but it was distinct at all ages. The therapeutic conclusion is obvious, namely, that tying the ribs together on the convex side of the scoliosis would have the opposite action, reversing the scoliosis and thus forcing the spine back into the median line. This was successfully applied in one girl of 18, and the immediate benefit confirmed the principle. The intercostal spaces were unusually wide in this case, and by tying the ribs together with stout silk plus wire the spine was stretched out nearly straight, and the correction was maintained by a plaster cast. Two of the wire loops were cast off later, and the correction is not quite so perfect as at first. This operation is adapted for incipient scoliosis but, for advanced cases, the spine would have to be mobilized to correct the convex rotation. Leverage for this is obtained by dividing ribs close to the spine on the concave side and dividing the corresponding ribs on the convex side at a distance from the spine, and then applying a correcting plaster cast with extension of the head. The ribs regenerate so rapidly after this that the correction realized was soon stabilized and apparently permanently in the two men of 16 and 17 treated in this way. The success in these two extreme and old cases of scoliosis confirms the possibility of straightening the spine by leverage from the ribs. The vertebrae and ribs form a very strong arch system, and only by cutting the ribs and exerting great force is it possible to work the spine back into its normal axis. Frey's article is a monograph on scoliosis with a bibliography of 591 titles and a history of the attempts at correction.

Jahrbuch für Kinderheilkunde, Berlin

March, 1922, **97**, No. 5-6

*Jaundice in the New-Born. E. Schiff and E. Faerber.—p. 245.
Congenital Occlusion or Absence of Common Bile Duct. G. v. d. Weth.—p. 259.
*Surgical Treatment of Pylorospasm in Infants. Heile.—p. 285.
Coarse Wheat and Butter-Flour Mixture in Infant Feeding. E. Brunthaler.—p. 311.
Experience with Intubation. M. Hohlfeld.—p. 320.
Utilization of Carbohydrates and Fat in Infants Fed with Butter-Flour Mixture. M. Zielaskowski.—p. 330.
Treatment of Bronchitis and Pneumonia in Infants. Stegemann.—p. 341.

Jaundice in the New-Born.—Schiff and Faerber have found bilirubin constantly in the blood of the new-born. It is probably derived from destruction of erythrocytes, possibly from the maternal blood. This indicates a physiologic preparedness for jaundice, but the jaundice does not develop unless some other still unknown factor intervenes.

Pylorospasm in Infants.—Heile found the anticipated hypertrophy at the pylorus in eighteen of his twenty operative cases. In nineteen the cure was complete in three weeks; the other infant succumbed to preexisting metabolic derangement. The pediatrist takes an unwarranted responsibility, he says, when he postpones the operative treatment which is borne so well, and which gives such almost invariably good results.

Klinische Wochenschrift, Berlin

Jan. 21, 1922, **1**, No. 4

Relations of the Skin to the Whole Organism. B. Bloch.—p. 153.
Pathologic Physiology of Chronic Constipation. Reiss.—p. 156. Conc'n.
Character and Significance of Vitamins. E. Abderhalden.—p. 160.
Surgery of the Suprarenal Glands. H. Peiper.—p. 161.
Effects of Mountain Climate on the Blood and the Exchange of Fluids Between the Blood and the Tissues. F. Laquer.—p. 163.
Different Effects of Tuberculins of Various Origin; Also Injuries from Tuberculin Tests. Neustadt and Stadelmann.—p. 166.
The Lethal Dose of Arsenic. G. Joachimoglu.—p. 169.
The Own Urine Reaction in Infants. A. E. Alder.—p. 170.
Roentgen Therapy of Erythremia. F. Schöning.—p. 172.
Phosphate in Relation to Cellular Respiration. P. György.—p. 172.
Origin of Pigments in the Eye. G. Miescher.—p. 173.
Roentgen Rays and Carbohydrate Metabolism. L. Pincussen.—p. 174.
Echinococcus of Spinal Column and Spinal Cord. H. Böge.—p. 174.
Treatment of Early Syphilis. G. A. Rost.—p. 175. Cont'd.
Diet in Nutritional Disturbances in Infants. Langstein.—p. 176.
Scarlet Fever Problems. K. Kisskalt.—p. 181.
Formation of Ferments in Cells. M. Jacoby.—p. 184.

Medizinische Klinik, Berlin

March 19, 1922, **18**, No. 12

Modern Treatment of Syphilis. E. Finger.—p. 361.
Psychanalysis and Medicine. A. Mäder.—p. 365. Conc'n.
Is Syphilis a Poison for the Reproductive Cells? A. Peiper.—p. 363.
*Testicle Implants. O. Rosenthal.—p. 370.
*Arsenical Polyneuritis. A. Cohn.—p. 371.

*Treatment of Erysipelas with Silver Nitrate. E. Fränkel.—p. 373.
Intravenous Injection of Camphorated Oil. W. Hüper.—p. 373.
Sciatica and Thermotherapy. E. Tobias.—p. 376.
Present Status of Treatment of Chronic Joint Disease. E. Meyer.—p. 378.

Testicle Implants.—Rosenthal protests against testicle implants as the donor is liable to suffer from the loss of the testicle. The one left may be injured later by accident or disease. He cites Moll's experience with a case in which a man consented to a testicle being taken from his minor son; 200 marks were paid for it, but the purchaser sold it to a third party for 500 marks.

Arsenical Polyneuritis.—Cohn reports the case of a physician who had been taking arsenic in treatment of psoriasis and a tendency to rheumatic joint disease. A typical arsenical neuritis developed, with such weakness of the legs that he was confined to bed. The prognosis is generally favorable, but the preexisting joint disturbances in this case render the outlook less promising. The permeability of the kidneys modifies the reaction to arsenic. Any tendency to contracted kidney magnifies the danger from arsenic treatment. The water freshet test in this case showed impairment of kidney functioning. He cites in conclusion some similar cases of arsenical neuritis from therapeutic doses in psoriasis, including another case in a physician.

Silver Nitrate in Treatment of Erysipelas.—Fränkel has applied 16 per cent. silver nitrate with good success in treatment of erysipelas of the face in twenty-five cases. The drawbacks of the solution are avoided by using a 12 or 16 per cent. silver nitrate salve. The entire area has to be smeared with it.

Monatsschrift für Kinderheilkunde, Leipzig

January, 1922, **22**, No. 4

Lactation in Relation to Menstruation. S. Engel.—p. 545.
Bronchiectasis in Children. Piltz.—p. 551.
Two Cases of Macrogenitosomia Praecox. G. Gabschuss.—p. 574.
Distoma Hepaticum in Children. Bihlmeyer.—p. 587.
Sepsis in Infants. E. Stransky and E. Schiller.—p. 590.
Heart Massage in Cardiac Stasis. A. Japha.—p. 597.
Cutaneous Hemorrhages in Uremia. G. Kaulen.—p. 599.

Münchener medizinische Wochenschrift, Munich

Feb. 24, 1922, **69**, No. 8

The Alleged Dangers of Twilight Sleep. E. Opitz.—p. 261.
Permeability of the Capillary Walls in Man. Gänsslen.—p. 263.
The Syndrome of Dystonia. G. Ewald.—p. 264.
Neo-Silver-Arsphenamin in Neurosyphilis. G. L. Dreyfus.—p. 268.
*New Field for the Talma Operation. E. Rubensohn.—p. 269.
Contagiousness of Condyloma Acuminatum. Lichtenstein.—p. 270.
Note on the Etiology of Cancer Based on Cancer Statistics of Cuba. W. H. Hoffmann (Havana).—p. 271.
Endolumbar Injections of Arsphenamin. L. Fuchs.—p. 271.
Technical Terms of the Modern Theories of Heredity. Siemens.—p. 272.
Therapy of General Paralysis. W. Weygandt.—p. 278.

Talma Operation to Relieve Mechanical Disturbance from a Tumor.—Rubensohn reports a case of grave disturbance from a rapidly growing tumor in the head of the pancreas, compressing completely the portal vein and common bile duct. At the laparotomy, the condition of the apparently moribund man of 35 prevented radical removal of the tumor. Working rapidly, the portal vein and the common bile duct were relieved of compression, and the gallbladder was evacuated. The liver was found to be of normal consistency and size, but interference with the portal circulation was clearly demonstrated. A typical Talma operation was then performed, the greater omentum being sutured to the parietal peritoneum, which was rubbed to develop adhesions. The ascites collected again but was not tapped as the newly created collateral circulation was gradually decreasing the ascites. Two months later, no effusion or icterus or dropsy of the lower extremities could be observed, and six months after the operation the patient had fully recovered, having gained 16 pounds in weight. The nature of the tumor was not diagnosed, but the success of the operation would indicate that it was not malignant. This opens a new field for the Talma operation, to relieve mechanical circulatory disturbances in the portal vein region. The outlook is more promising than when the liver is primarily diseased.

Wiener klinische Wochenschrift, Vienna

Feb. 16, 1922, **35**, No. 7

*High Blood Pressure and Tachycardia. J. Mannaberg.—p. 145.
Bearing of the Plasma Albumin on the Clinical Aspects and Treatment of Kidney Diseases. V. Kollert and W. Starlinger.—p. 146.
Pains in the Spinal Column, Their Anatomical Localization and Their Diagnosis. J. Hass and F. Eisler.—p. 147.
Reticulation in Normal Human Skin. H. Homma.—p. 149.
Glandular Formations in the Vagina. V. Pauliucu-Burla.—p. 150.
Analysis of Cancer Questionnaire. Peller.—p. 153. Cont'd.
Opening of New Histologic Institute. J. Schaffer.—p. 156.
Incidence of Tuberculosis Among Printers. P. Gerber.—p. 158.

High Blood Pressure and Tachycardia.—Mannaberg states that, in a series of 241 patients with high blood pressure, 55 per cent. presented a normal pulse rate; 43 per cent., tachycardia, and 3 per cent., bradycardia. Systolic pressures of 180 mm. of mercury and above were counted as high pressure, and a pulse frequency of 80 and above was considered tachycardia. Of the 103 cases of tachycardia, in 38 the pulse was under 90; in 17 cases the pulse beat exceeded 120, and the highest pulse was 140, with a pressure of 240. Of the 241 patients with high blood pressure, 41 per cent. were men, and 59 per cent. were women. Of the 100 men with high blood pressure, 32 per cent. were tachycardic, while of the 141 women with hypertension, 50 per cent. were tachycardic. Of the 7 patients presenting bradycardia, 5 were men and 2 were women. From this it appears that a much higher percentage of the women than the men were tachycardic, whereas a larger percentage of the men than the women were bradycardic. According to Marey's law, a pulse of high tension is slow, and vice versa. Mannaberg's findings were exactly opposed to this.

Zeitschrift für Urologie, Leipzig

1922, **16**, No. 2

*Appendicitis as Cause for Hematuria. A. v. d. Becke.—p. 50.
*Nephrolithiasis. S. P. Federoff.—p. 56.
The Sklerator: A Celluloid Device for Mechanical Correction of Impotence. E. Schubert and M. Zolotnitzky.—p. 83.
*Cicatricial Changes in Kidney Causing Pain. C. Hammesfahr.—p. 88.
Purpura of the Bladder. P. Denicke.—p. 95.

Appendicitis as Cause for Hematuria.—Becke reports that the kidney seemed to be normal after its removal on account of persisting right hematuria. The pains, tumor and fever continued as before, and the gallbladder was exposed but proved to be normal. The tip of the appendix was found adherent to it, and this was resected and a few more adhesions were broken up, and a complete cure followed at once. He reiterates that right hematuria should always suggest possible appendicitis.

Calculi in the Kidneys.—Federoff reviews a series of 557 operations on kidneys. Calculi were present in 151 of the men and in 90 of the women, bilateral in 14 per cent. In one case he found 35 calculi and in another 69. His experience confirms that nephrolithotomy is one of the most dangerous of operations, as no technic is known that wards off danger. He prefers to remove the kidney rather than cut into it, if a pyelotomy incision and a few small incisions in the parenchyma fail to answer the purpose, and there is suppuration and extensive atrophy of the kidney tissue or several calculi embedded in the parenchyma. He operated in 4 of the 6 cases of anuria from a calculus reflex. One man of 78 died; the anuria was of four days' standing and pronounced somnolency had accompanied the vomiting and singultus. The others recovered.

Painful Cicatricial Changes in the Kidney.—In the three cases described, the pains and colic were cured by detaching the capsule from the parenchyma. The scars had been left by a war wound in the two men. In the woman the disturbances had followed nephropexy.

Zentralblatt für Chirurgie, Leipzig

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Resection of Perforated Gastric Ulcers. E. Bircher.—p. 42.
Treatment of Tuberculosis of Kidney. J. J. Stutzin.—p. 42.
Operation for Varicocele. F. Franke.—p. 45.
Treatment During Sleep of Contracted Flatfoot. H. v. Salis.—p. 46.
"Longitudinal Resection of Stomach for Ulcer." Neugebauer.—p. 48.

Zentralblatt für Gynäkologie, Leipzig

Jan. 14, 1922, **46**, No. 2

Terminology of Menstrual Irregularities. L. Seitz.—p. 50.
*Syphilitic Gumma of the Ovary. Von Kubinyi and Johan.—p. 57.
Formation of Artificial Vagina. O. Steuding.—p. 61.
Occipito-Sacral Position of the Fetus. O. Fohr.—p. 64.
Etiology of the Low Transverse Position of the Fetus in the First Vertex Presentation. A. Nelius.—p. 68.

Syphilitic Gumma of the Ovary, with Positive Spirochete Finding.—Von Kubinyi and Johan report a case which furnishes absolute proof for the occurrence of syphilis of the ovaries, the existence of which many have been inclined to question. The presence of a syphilitic gumma of the ovary was definitely diagnosed, numerous typical specimens of *Spirochaeta pallida* being found in sections from the gummas. A thorough examination of the patient failed to reveal any further site of infection. The Wassermann reaction was + + +. The portal of entry of the syphilis could not be found. The husband of the woman presented no signs of infection, and stated that he had never had an affection of the genital organs. The Wassermann reaction in his case was negative. The writers think that possibly a previous conception that had ended in spontaneous abortion during the third month of pregnancy had resulted from illicit relations with a syphilitic. Through a syphilitic ovum the patient herself may have become infected through *choc en retour*. The result was a latent syphilis, and after a number of years the gumma in the ovary. Another possibility is that long before her marriage the patient had acquired syphilis, the portal of entry being unknown. Localization in the ovary took place and from here genuine ovulogenous syphilis developed, the ovum being the bearer of the virus. Later, expulsion of the diseased ovum (spontaneous abortion) occurred.

Zentralblatt für innere Medizin, Leipzig

Jan. 14, 1922, **43**, No. 2

*Determination of Ammonia Content of Blood Serum. H. Strauss.—p. 25.

Determination of Ammonia Content of Blood Serum.—Strauss recommends the method of Hahn and Kootz for the determination of the ammonia content of blood serum. Examination of twenty-seven subjects by this method showed that the normal values for ammonia lie between 1 and 2 mg. per 100 c.c. of blood serum, with 2.5 mg. as the highest normal limit.

Hygiea, Stockholm

March 31, 1922, **84**, No. 6

Measurement of Arterial Blood Pressure. E. Kylin.—p. 217.
Successful Operation for Prognathism. O. Aleman.—p. 239.

Norsk Magazin for Lægevidenskaben, Christiania

April, 1922, **83**, No. 4

*Deafness in Schoolchildren. F. Leegaard.—p. 225.
*Sclerema Neonatorum. A. Brinchmann.—p. 269.
*Tangential Sclerectomy for Glaucoma. S. Hagen.—p. 275.
*Tonometry. H. G. Gjessing.—p. 280.
Hollaender's Tuberculin Reaction. H. Krohn.—p. 285.
Filtrable Viruses. P. M. Holst.—p. 286.

Deafness in Schoolchildren.—Leegaard has examined the hearing of 7,700 children in Norwegian schools. In over half of the children that proved to be hard of hearing the teachers had never noticed that the hearing was subnormal. Chronic otitis was evident in 25.27 per cent. of the 459 more or less deaf children.

Sclerema Neonatorum.—In Brinchmann's case the young infant presented a tallow-like thickening of the subcutaneous tissue which proved to be fat tissue through which particles of calcium were scattered. He knows of no case of the kind on record. After a month or two the child developed a suppurative skin disease with recurring subcutaneous abscesses. Conditions gradually returned to normal until, at the age of 5 months, no further trace of the sclerema could be found. He has been unable to find any records of such a general dissemination of calcium deposits in the subcutaneous adipose tissue as in this case. The complete return to normal of the skin and subcutaneous tissue in this case, in the course of four months, is a further remarkable feature.

Sclerectomy in Glaucoma.—Hagen reports the application of Holth's tangential sclerectomy in fifty-two cases including forty of simple glaucoma. It is too early to pass judgment on the final outcome, but the impression is favorable.

Tonometry.—Gjessing applied the Schiøtz tonometer to measure the tension of the eye in 567 normal subjects and 526 with cataract.

Ugeskrift for Læger, Copenhagen

March 30, 1922, **84**, No. 13

*Lesions of Nerves in Arms. H. Abrahamsen.—p. 295.
Diagnostic Import of Regulation of Neutrality of Urine. A. Bisgaard.—p. 303.

Lesions of Nerves in the Arms.—Abrahamsen says that cutting wounds were responsible for the injury in thirty-seven of his fifty-two cases of lesions of the nerves in the arm. This is the most frequent cause of paralysis of the arm in adults, an open cut from a knife or piece of glass. Fractures seldom induce paralysis. In children, subcutaneous injuries are more common, and secondary paralysis is frequent. This may be due to the lesser resistance of the youthful nerves or to the extreme dislocation of the fragments which is common, but over-exuberant callus is the most frequent cause of nervous disturbance in children. It is necessary therefore to distinguish between lesions in children and in adults. He emphasizes the importance in all injuries of the arm near the trunk nerves to make a thorough examination before the operation, before conditions are modified by the anesthetic. Too often the injury to the nerve is overlooked until after the incision has been sutured. The end-bulbs have to be resected before the nerve can regenerate. In only nine of the thirty-seven cutting wounds had the nerve been sutured primarily, while in all the others (75 per cent.) the injury of the nerve had not been discovered until local anesthesia, chilliness, cyanosis, advanced atrophy or contracture had called attention to the fact that the nerve had been injured. The functional damage resulting from this oversight of the nerve lesion is often serious for handicraftsmen, as he shows by several examples, the disability compensation amounting finally to 20, 30 or 40 per cent.

April 6, 1922, **84**, No. 14

The Bacteriophagum. P. H. Pock-Steen.—p. 319.
Multiple Calculi in Ureters; Two Cases. K. Wegge.—p. 325.
*Motor Functioning of Stomach in Repose. A. A. Nielsen.—p. 328.
Traumatic Neuroses and Legislation. K. Malling.—p. 332.

Motor Functioning of the Stomach in Repose and During Exercise.—Nielsen found that in 20 persons examined the stomach emptied itself much earlier when they were up and about than when they stayed in bed. The difference was still greater when the subject lay quietly in bed during the entire test. The subjects were all cases of quite recent syphilis, with normal stomachs. In 3 of the 10 men in bed, the stomach took up to five hours to empty, and three and a half hours in the others. When up and about, the interval was only three and a half hours in 9, and four hours in 1 case. The interval was four hours in 3 of the women in bed; three and a half hours in 1, and four and a half hours in 6. When out of bed the interval was three and a half hours in 5 and four and a half hours in 5.

Upsala Läkareförenings Förhandlingar, Upsala

March 15, 1922, **27**, No. 1-2

*Pediatric Clinics in Vienna. A. Wallgren.—p. 1.
*Multiple Cysts in Brain. A. Mörtberg.—p. 23.
Bacilli Carriers of Poliomyelitis. A. Wallgren.—p. 45.
Pirquet's Nutritional Standards. A. Wallgren.—p. 53.
Chemistry of Homogentisic Acid. II and III. C. T. Mörner.—p. 77.
Double Ureters in Embryo. E. Jonsson.—p. 81.
Method for Making and Mounting Sections of Brain. I. Syk.—p. 95.
Gas Bacillus Complications in Typhoid. S. Ekvall.—p. 97.

Pediatrics at Vienna.—This is an account of what most impressed Wallgren in a sojourn at Vienna for study in the children's clinics.

Porosis of the Brain.—Mörtberg applies this term to a case of multiple cysts in the brain of a workman of 35 who had succumbed to cancer of the stomach, and the brain was found studded with cysts, like a Gruyère cheese. Gas-forming bacteria were found in them.

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A RETROSPECT AND A RECORD: AN EARNEST OF THE FUTURE

PRESIDENTIAL ADDRESS *

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President of the American Medical Association
PHILADELPHIA

One year ago, the view in which our House of Delegates regards the Section on Ophthalmology was made evident in the recognition of its long service, steadfast work and scientific output by the election of a representative of this membership to the chief executive office of the American Medical Association. It is furthermore a recognition of this section's endeavor, although fully alive to the need of its special development, not to cast its lines in narrow rows, but to increase its range of action, knowledge and influence in cooperation and in association with the great system of medicine of which it forms an important integral part.

It is altogether fitting and proper that a declaration of high appreciation of this act of the House of Delegates should be recorded, that in representative capacity I should make formal avowal of the grave responsibilities involved, that I should pledge the best service in my capacity and an earnest study of the insistent problems with which our profession is surrounded, seeking the advice of our constituency, courting consultation and conference, endeavoring to deserve support, and expressing the hope that that confidence has not been misplaced.

THE AMERICAN MEDICAL ASSOCIATION

Seventy-five years ago, the American Medical Association was formed, with Nathaniel Chapman as its first President, the organization, however, accomplished largely through the efforts of Dr. Nathan Smith Davis. Rightfully we acclaim him father of this great congress of physicians.[1] Founded for the specific purpose of advancing the standards of medical education, a purpose which from that day to this has been translated into values of which the profession we represent and the people we serve are the fortunate beneficiaries, this Association twenty-one years ago underwent an important reorganization with respect to membership and with reference to the constitution, whereby the House of Delegates was formed, which since that time has been responsible for the policies of the Association.

This reorganized body, as has been well said, opens its door to all qualified licensed physicians who honorably practice scientific medicine and who, in the words of the hippocratic oath, "into whatever houses they enter, will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption." Through these doorways have passed well nigh 85,000 physicians, who constitute the fellowship and membership of this Association. Let no qualified man avoid the state of being a Fellow. It is his privilege, it is his duty, it should be his ambition to join in our concerted effort on behalf of the world's greatest profession—the science and art of medicine and surgery.

Today the American Medical Association celebrates in organization its diamond jubilee; in reorganization, its majority. It is an occasion for rejoicing, and also an occasion on which to gather inspiration from the achievements of those American physicians who have preceded us for our share of work in this profession to which we have the honor to belong—inspiration, too, from the accomplishments of those who are contemporaries, and from those who are of younger years, in their efforts to carry on.

Did time permit, we might with profit linger on the period when the original thoughts of Benjamin Rush "swept the chords of the gamut" of the medical knowledge of the day; when through the efforts of John Morgan and William Shippen, the first school of medicine was founded in this land; and when the days were evil and yellow fever took its heavy toll of victims, one hundred years before its conquest, in largest measure, was to become an American achievement.

EARLY ACHIEVEMENTS IN AMERICAN MEDICINE

It is proper, however, for a brief space of time to refresh our memories of certain notable activities at a somewhat later date, but still one prior to the foundation of our Association. Naturally, we turn to William Beaumont, although preceded in experimental work on the processes of digestion by John R. Young, whose early death checked a career in medical science of which his graduating thesis gave clear promise, and accord him high rank in the list of distinguished merit, and hail him as the pioneer experimental physiologist of our country.

To the work and standard essay (1837) of William W. Gerhard, fresh from the clinic of the great master Louis, followed soon by the papers of James Jackson, Jr., "a candid listener to all opinions," George C. Shattuck, for many years a shining light in the medical faculty of Harvard, Enoch Hale, twice a winner of the Boylston Prize, and Alfred Stille, beginning his career

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* President's address before the American Medical Association at the Seventy-Third Annual Session, St. Louis, May, 1922.

[1] Dr. Nathan Smith Davis, Dr. James McNaughton and Dr. Peter Van Buren constituted the committee appointed to put in operation the resolution of the Medical Society of the State of New York that a national medical convention should be convened. This convention took place on May 5, 1846, and directed the drafting of a plan of organization which went into effect one year later, that is, in 1847, when the name "American Medical Association" was adopted.

as Gerhard's house physician, the first Secretary of the American Medical Association, and its President in 1867, whose eloquent words gave many of us our first lessons in the science and art of medicine, we owe the establishment of the clinical differences between typhus and typhoid fever long before they were widely appreciated by physicians abroad. Jacob Bigelow, ranking among the highest of American botanists, and "more learned, far more various in his gifts and acquirements than any of his colleagues," did more than any other man of his period to rescue in our country, as Holmes has said, "the practice of medicine from the slavery to the drugging system which is part of the inheritance of the profession." Although even in the latter part of the eighteenth century, British physicians had indicated how the contagion of puerperal fever may spread, light did not shine in the darkness of this land, where only too often the birth chamber became the death chamber, until, five years prior to the first publication of Semmelweis' immortal observations, Oliver Wendell Holmes read before the Boston Society for Medical Research his famous and also immortal paper on "The Contagiousness of Puerperal Fever." He broke the trail which was to lead to an era of safety. Therefore it is that a certain day in April, seventy-nine years ago, should be red-lettered in the calendar of American medicine.

To this comparatively early period belong Ephraim McDowell's introduction of ovariotomy into surgical practice (1809), and Sims' first work and observations (1845), which ultimately led, seven years later, to the cure of a condition previously almost invariably irremediable, and with one accord they are acclaimed the founders of operative gynecology in the United States. To this era, too, belong the achievements of many others whose names hold high place on the scroll of merit of our surgical household: Physick, precise and deft, the unsurpassed lithotomist of his day; Nathan Smith Davis, physician and surgeon, accounted to have done more for the general advancement of medical and surgical practice than any of his predecessors or contemporaries in this country (Welch); William Gibson, scientist, author, artist, with his eventful surgical record in war and peace; Philip Wright Post, unrivaled practical anatomist and notable teacher; Valentine Mott, distinguished as a pioneer in vascular surgery and for his record in the ligation of arteries; John Collins Warren, famous in the annals of surgical anesthesia, and in the operation for strangulated hernia, endeared to us always, and especially today, as one who was prominent in the establishment of the American Medical Association. The list is a long one; these are only a few examples. American surgeons have contributed a sterling chapter in the history of our profession. Even as they did in these earlier days, so they are doing now. The stimulus which Horner and Gross gave to the study and evolution of pathologic anatomy must not be forgotten, and the year preceding the foundation of the American Medical Association is ever noteworthy because of the introduction of ether anesthesia. It is unnecessary to discuss controversy and priority claims. Crawford Long and William Morton are safely enshrined in our memories. The great debt we owe to Bigelow and Warren for their successful efforts in establishing the administration of ether as a permanent part of operative surgical technic can never be repaid.

The time devoted to this limited and imperfect review is not, it may be hoped, time wasted. Is it not right, on an occasion like the present one, to believe that our attention should not be centered entirely upon the achievement of modern science and practice? May we not try, and especially you of the younger generation, to gain inspiration for the conduct of the higher medical life from the work and careers of the Fathers in our Israel?

It is not without dignity in the background of medical effort in our land, nor with any lack of inspiring exemplars in the order of men set apart for the sacred office of the physician, that the American Medical Association came into existence. Formed with the high purpose of elevating the standards of medical education, and purifying the methods of medical practice, it has never forsaken its lofty aim, nor shall it, if we approach our tasks with rightness of heart, force of character and clean, straight thinking.

PROGRESS DURING THE EXISTENCE OF THE ASSOCIATION

During the seventy-five years of our existence as an association, there has been a mighty forward movement throughout the world in the activities of our profession. Because of Pasteur's and Koch's researches, the science of bacteriology was founded, and sturdily it has grown; by the grace of Pasteur's genius and the immortal work of Lister, the great principles of asepsis were established, whose adoption has "saved more lives than war has ever slain"; by virtue of Pasteur's discoveries, the science of the specific prevention of disease has arisen, and "ever higher immunization raises her Red Cross."

During this period came other advances; the substitution in medicinal therapeusis of a clearer understanding of the physiologic action of drugs for the older empiric methods; the study of the phenomena produced by the disturbances of the function of the ductless glands and their treatment, and a better concept of the disorders of metabolism; improvement in the management of so-called functional diseases, especially those of the nervous system; studies and discoveries in relation to insect-borne fevers, notably malaria and yellow fever, and to the protozoal parasites as causes of disease; the application of protozoology to scientific medicine; the development of chemotherapy and the co-operative work of chemistry, pharmacology and clinical medicine; the value of radioactivity in the cure of disease processes and of morbid growths; the improved approaches to diagnosis, whereby clinical observations and examinations are fortified by satisfying "the exacting conscience of the laboratory;" the elevation of the standards of the so-called "specialties," and their removal from a position of comparative isolation to one of closer affiliation with the methods of exact diagnosis and therapy; and the improvements in medical practice and surgical procedures along all the lines of their activities. This résumé, necessarily far from complete, gives some idea of the world's efforts in medicine, surgery and the allied sciences during the period of our existence as an association.

American physicians and researchers have played no mean rôle in these endeavors and in this work. Sometimes they have been discoverers, pioneers and leaders in the field of approach; sometimes followers of a lead and carrying on; always they are, like Beaumont, alert inquirers of the truth, knowing they live in restless times and are a part of them.

DEVELOPMENT IN TREATMENT OF DISEASE

To return, purely from the American standpoint, to a brief review of this period, and to introduce the second phase of this subject, no better reference could be found than the work of Daniel Drake, who was the first, as America's greatest medical historian has said, after Hippocrates and Sydenham, to do great things for medical geography and who was great in his relation to the topography of disease. Small wonder, then, that the presence of this man, whose sterling efforts to elevate the standards of medical education in this country, the very purpose for which our Association was primarily founded, occasioned an enthusiastic demonstration never surpassed in the history of our organization.

With the elaboration, forty-seven years ago, by Weir Mitchell, of improved methods "of renewing the vitality of feeble people," the "rest-cure," or Mitchell methods," came into existence, rehabilitating, if it did not revolutionize, the treatment of functional nervous disorders, and, slowly at first, won its way to universal favor. This therapeutic measure, coupled with his complete and compact presentation, in association with Ezra Dyer and William Thomson, of the evils of "eye-strain," and the amazing relief afforded by their correction, rank with the best scientific announcements of the nineteenth century. They have brought untold thousands relief from suffering, and enabled them again to take their places in the world's insistent work. And earlier in his career Mitchell's studies, in collaboration with two colleagues in Turner's Lane Hospital, as the junior and only living member of that famous "firm" has said, "laid the foundations of modern neurologic surgery."

In the early seventies, in spite of the results recorded from European laboratories, therapeutics in our country depended almost entirely on empiricism or clinical experience. The publication of Horatio C. Wood's famous book (1874), based on the application of the physiologic action of drugs to clinical medicine, helped more than any other single volume to lay the foundation of our present American system of therapeutics, and gave him just title to be regarded as a pioneer pharmacologist of our land.

Familiar as we are with the fine work of the Medical Corps of the United States Army in Porto Rico, and of the United States Public Health Service and of the International Health Board in our Southern states in campaigns against hookworm infection and the disastrous anemia it occasions, it is historically interesting to remember that a dozen years before these notable activities Joseph Leidy, our greatest anatomist, zoologist and paleontologist, while studying animal parasites and finding the hookworm, expressed the opinion that it might be the cause of pernicious anemia in the United States.

With just pride, the Army Medical Corps points to the records of its members in bacteriologic investigations, in parasitology, insect-borne infectious fevers and the specific prevention of disease. The achievements of Walter Reed and his associates, and their demonstration of the methods of the transmission of the virus of yellow fever; the large accomplishments of the Sanitary Corps of the Army in Cuba and Panama under the leadership of William Gorgas; the practical elimination of typhoid fever by vaccination, according to improved methods originally advocated in France, England and Germany, represent a few outstanding triumphs.

Almost General Gorgas was enabled to achieve his great enterprise and "write the last chapter of the history of yellow fever." The fame of these men is eternal; Reed and Gorgas sleep in Arlington; glory guards them. Ricketts made known the transmission of Rocky Mountain spotted fever and Mexican typhus. He answers in the roll-call of medical martyrs, and within the year Howard Cross has joined that illustrious company.

Discoveries in bacteriology, especially as they are concerned with the etiology, prevention and cure of disease, have steadily advanced. The relation of the white staphylococcus of the skin to wound infection and of the capsulated aerogenous bacillus to emphysematous gangrene, the disclosure of the cause and cure of cerebrospinal meningitis, and the etiology of infantile poliomyelitis, the investigation of specific proteins and experimentally produced bacillary disease, the demonstration of anaphylaxis from the bacterial diphtheritic product, the differentiation of bovine and human types of tuberculosis, and the detection of the cause of epidemic conjunctival affections, are notable examples of work and triumphs along these lines.

From the days when John Bobbs introduced cholecystotomy, when Gross reigned the undisputed premier surgeon of this country, when surgical practice was passing from the prelisterian to the postlisterian era, American surgery in all its branches has steadily developed, not only maintaining the high rank it has always possessed, but ever advancing it.

Among those no longer with us, Fenger, earliest of teachers of modern pathology, and original in his operative work in brain abscess; Senn, expertly trained by experimental researches for his notable contributions to intestinal surgery; Agnew, famed for technical dexterity and sureness of operative touch; Ashhurst, the first among the surgical scholars of his day; McBurney, noteworthy for diagnostic points in appendicitis and improvement in the operative approach; Hartley, originator of intracranial neurectomy for trifacial neuralgia; Louis Sayre, introducer of methods of suspension for Pott's disease; John Murphy, *facile princeps* of surgical clinical teachers, conspicuous along all the lines of his art, especially in his contributions to vascular surgery and gastro-intestinal and entero-intestinal anastomosis, are a few of the names which spring up quickly in our memories.

Among those who live and are at the height of their productive activities, the work of many has earned the order of merit. These men, with minds of wide scope, have broadened and developed operative surgery in all its departments and enhanced the surety of surgical diagnosis. Intracranial tumor localization, clarified by virtue of improved neurologic and ophthalmoneurologic knowledge and intraventricular air injection has greatly increased the exactness of surgical approach. New methods of intracranial neurectomy have been devised; direct medicinal applications to deeply placed nervous ganglions are satisfactorily made, and surgery of the spinal cord and of the peripheral nerves has been guided into avenues of noteworthy advance. The study of disorders of the pituitary body and their treatment by glandular therapy, by surgical interference, and in quite recent times by radium, fill a noteworthy chapter replete with American achievements. The early radical excision of cancer of the breast has in high degree reduced recurrence percentage; experimental researches in surgical shock, the blocking of shock in operations and the improved methods of anesthetic administration have marvelously lessened the mortality lists. The opportunities afforded by war, skilfully accepted and elaborated, have brought to plastic surgery its recent noteworthy results. Direct bronchoscopy in its newest development has revolutionized the methods of removal of foreign bodies from the lungs.

Great clinics in all departments are available in many portions of our land, to the lasting benefit of those who seek relief and of those who come for instruction. Of one such great center it is impossible not to make special mention, wherein method and system and cooperative diagnostic technic and professional skill have developed an organization with a production of effective results that is unsurpassed.

Retiring from surgical reference, and turning now for a moment to medical clinicians, the names and work of many who have left us have conspicuous distinction, the list again curtailed, as in the circumstances it must be. We think at once of Austin Flint, a President of this Association, and of his skill in auscultation and percussion; of Jacob Da Costa and the elegance of his clinical teaching and diagnostic skill; of Edward Janeway and his wisdom as a consultant and his "almost uncanny" subtlety in diagnosis; of Reginald Fitz and his notable contributions on perforating inflammations of the appendix, pancreatitis and intestinal obstruction; of William Pepper, equally great in clinical ability, in university administration and elaboration of its functions in relation to the state and the community; and of Abram Jacobi, an alien by birth, but becoming a leader in American medical thought, a President of this Association, and sharing with Lewis Smith the honor of founding pediatric clinical instruction in our country.

The development of a medical literature written by American authors during the last sixty years has been characterized by ever-increasing excellence of the output, representing the results of clinical and clinicopathologic observation and research. Among these notable contributors the medical clinicians take prominent rank, including neurologists and pediatricians. The neurologic product is a rich one—studies of ascending and descending paralysis, isolation of previously unknown reflexes, new clinical entities, differentiation of mixed scleroses, and investigations of morbid processes so keen that neuropathology has become a well-nigh specifically distinct department.

Particularized examination of malarial fever, a just appreciation of the effects of altered blood pressure, a clearer comprehension of cardiovascular and renal disorders, the development of the doctrine of focal infections, which it is historically interesting to remember was first promulgated in this country by Benjamin Rush, who advocated the extraction of diseased teeth as a method of curing disease, improvements in infant nutrition and infant feeding, and the enthusiastic (sometimes, perhaps, overenthusiastic) attention devoted to the endocrine system, are a few of the many subjects to which the minds and work of our clinicians and researchers have been directed.

MORE RECENT DEVELOPMENTS

If time permitted, particularized mention should be made of the brilliant work by Americans of recent date in experimental embryology, morphology, physiology and pathology. To this record our own distinguished medical historian has directed the attention of the greatest continental authority on the subject, characterizing it as an interpretation of "the most important work in scientific medicine in this country."

As Sir William Osler has said, "A younger group of physiologic clinicians have been quietly but surely upbuilding and transforming American medicine." Not alone has there been a continuation of the welding of pathology with clinical medicine, but an ever-broadening field of activity in clinical, chemicophysical and experimental research. To do more than make titular record of some of this work is impossible, but even such an imperfect reference indicates the lines of endeavor. Witness the increasingly accurate methods of the functional diagnosis of renal disease, the studies in the physiology of renal excretion and the intimate pathology of types of experimental nephritis, and that sterling research on glomerular function and its well-nigh startling results. The advance in the technic of basal metabolism in disease and the studies of disease disturbance, the recent investigations of acidosis in children, in parathyroid disease, glycosuria and nephritis, of carbohydrate metabolism in diabetes and related diseases, of the clinical pharmacology of respiratory functions, of the methods for studying lung volume and their application to the study of disease, of the respiratory function of the blood and the direct analysis of arterial blood represent higher scientific researches culminating in their adaptation to specific medical needs. Studies in the pathology and etiology of rickets, in the physiology of the cerebrospinal fluid, in the transmission of measles, in the immunologic separation of the streptococcus associated with scarlet fever, in the development of active immunization against diphtheria, and in thyroid function also indicate by their very titles their practical application to disease.

To this list could be added the notation of many highly scientific researches, for example, the physicochemical basis of the rate of growth in the animal world, of the character of individual proteins, of immunologic reaction, and of the response to stimulation by light, all indexes of the brilliant record, before referred to, which is being made by the "younger group."

Of inestimable value in all this work has been the stimulating suggestion and supervision of those who have earned the title of "master," and especially of that exemplar among the men of science whose loyal disciples far and wide in this land and in the lands beyond the seas have reflected in their efforts his example, his influence, his scientific imagination and his instruction.

The importance of cooperation between medicine and chemistry becomes daily more evident; and, although important discoveries because of such cooperation have been made, in the words of a recent valuable report, "If we compare the number and scope of our institutions for medical research with those of other countries, it is evident that much remains to be done before we can aspire to leadership in chemicomedical research." It is therefore insistently evident that a strong appeal must be made for an increase of facilities in this regard in the United States. The wide influence of the membership of this Association should be utilized to its fullest extent to take advantage of the opportunities for work along these lines. These words are intended as a strong recommendation that this subject shall have, not only the active sympathy of our Association, as it unquestionably has, but that there shall be organized effort to make increased opportunities available for this type of research.

The service of the medical fraternity during the past war has been the subject of many addresses, and with notable exactness and eloquence has been reviewed by three of our Presidents and by the Surgeon-General of the United States Army. No words now spoken could add to the glory of this event, the record of which forms a treasured chapter in the annals of our medical history.

Because today we celebrate the seventy-fifth anniversary of our foundation, this review of medical events and achievements has concerned itself alone with those of our own physicians, past and present, without for a moment forgetting, in this hour of our rejoicing, and with no thought of vaingloriousness, the debt we owe to European discoveries, instruction and stimulation. We know, and we do not forget, the men across the seas, who were and are the giants of their day. We know that without them and without what they have done and are doing, we could not have reached the place we now occupy, and all we wish to make plain is that we have not been, nor are now, laggards in the field of medical endeavor. We believe that we have in some respects and along certain lines earned leadership. We strive in friendly scientific competition to attain to leadership in provinces as yet unconquered.

THE ACTIVITIES OF THE CENTRAL OFFICE

A competent, intelligent appreciation of the work which is actually done at the headquarters of the Association can be obtained only by a visit to the central offices.

Homeless nineteen years ago, today the Association possesses a good building on its own property. But even so, it is not sufficient; facilities and space must be commensurate with large and ever-increasing enterprises. Hence an important decision has been reached, and a plan put into operation, whereby new buildings shall be erected and, moreover, building operations instituted not for the present alone, but in full consideration of the future and its requirements.

Established thirty-nine years ago, The Journal has developed, under its present masterful editorship, until it has reached the high position it now occupies in the foremost rank of medical journalism. Today it reaches more than 80,000 subscribers, and extends its influence to an assembly of readers three times greater than that of any other medical publication in any language. The printing plant is unrivaled as a medical press. From it come the Spanish edition of The Journal, which has accomplished its purpose of establishing closer relations with Pan-American countries; also five special journals, and all the books and publications of the various Councils.

In the Biographic Department the personal data with respect to every licensed physician and every medical student are collated and classified. For seventeen years the Council on Pharmacy and Chemistry, in association with a finely equipped laboratory, has broadened its activities until its work may be characterized as a propaganda for the rational use of drugs; its recorded investigations and suggestions as to remedial agents are of lasting benefit to those whose paramount duty it is to heal the sick and check the inroads of disease. The Propaganda Department has become a clearing house for information on the nostrum evil, quackery and allied subjects. It is a great agency of righteousness, exerting power for good in public health which cannot be estimated, which is consecrated to the best interests of the citizens of our community, and which is vitally valuable in the protection of their well-being. The hope is expressed that the day is not far distant when the Association, through its central offices, shall publish a magazine, or a series of bulletins, wherein the information which the Propaganda Department and the Council on Pharmacy and Chemistry gathers shall be suitably arranged, edited and explained for the benefit of the lay public; wherein, too, the aims, results and value of legitimate medicine shall be clearly stated in contrast to the pretence of illegitimate practice and therapy. This information the public craves, and has a right to receive. It obtains it now in scattered articles, in occasional public lectures, in statements, often vague and badly understood. It should be available in a standard publication issued with the weight of recognized authority.

The Council on Health and Public Instruction has assiduously concerned itself with the protection of scientific research, the conservation of vision, vital statistics, and public health education. The Council on Medical Education and Hospitals, under eminent leadership, has accomplished results second to none in their importance. The enormous amount of statistical information which has been gathered not alone represents a mere collection of published information, but interprets the results of personal inspection, the only really trustworthy method of procedure. Its steadfast endeavor has been directed to the elevation of the standards of medical education, and the product of its labor is not the result of isolated energy. It has called in consultation, by means of specially appointed committees, the leading medical educators of the country. It has organized an annual congress, largely attended, by representatives of medical and educational interests from all over the United States and from Canada, where the problems involved have been discussed frankly and freely, and standards have been set and policies have been formulated. The object sought has been attained, not through revolution, but by evolution. Today American medical education, in its best development, maintains its allotted order of precedence, ranking high in the world's just estimation.

Just because progress has been great, the obligation is imposed that it shall be greater, that old problems shall receive renewed study, that new problems daily presenting themselves in the ever-changing scenes of modern medical instruction and modern medical requirements shall attract the insistent attention of those whose duty it is to endeavor to solve them.

A few suggestions in this regard follow, not with any idea that they clear up difficulties, but with the hope that, although they are not new and often have been expressed in similar or in other terms, they may stimulate future action on the part of those to whom wisdom has been given along the lines of improvement in medical education, especially where reconstruction is evidently needed.

MEDICAL EDUCATION

Medical education, omitting from consideration premedical instruction, naturally divides itself into: (*a*) undergraduate or pregraduate education; (*b*) graduate or postgraduate education and (*c*) university extension education, that is, community service.

1. *Pregraduate Education.*—The standards have been raised to an acceptable height, and a curriculum suggested after conscientious and sometimes meticulous study and thought. But emanating from educators

and from the student body there is a justifiable and well-known criticism, expressed almost epigrammatically by one of them, unusually well balanced and among the favored ten: "We get our instruction in packets. The students never realized, or more properly, were never made to realize," he proceeded, "the proper relation, for example, of anatomy and physiology to the general scheme, until the 'clinical year' arrived, and by that time the packet had grown old and musty."

As has been clearly stated by Dr. Henry S. Pritchett, "these fundamental sciences should be taught, not as something separate from medical practice, but as part of it. The fiction that the medical student can be prepared for medical practice by learning a mere fragment from every field of science ought to be definitely given up." Moreover, it is evident, as has often been pointed out, that instruction in these fundamentals—physiology, anatomy and pathology—is too widely, perhaps too strictly, separated from clinical training, which should be introduced into the curriculum at a time sufficiently early to make it the important medium through which the student shall acquire a familiarity with the practical application of these subjects. These should keep pace with the other branches of the tree of knowledge, being neither lopped off nor allowed to wither.

Elimination of this "packet-system" resides not alone in alteration of individual teaching, but in cooperative work, in that the head of each department shall personally and practically become acquainted with the scheme of instruction as carried out by every other department which has vital relation with that of his own, and present his material accordingly. The reply that this technic is in active operation is not sufficient; otherwise the criticisms referred to would not be rife.

A plan calculated to obviate this fault could be put in operation by the appointment, for example, of a member of the faculty who, in addition to his scholastic duties, should be a liaison officer, and who should be empowered (he must be a man of tact, intelligence and force) to supervise the cooperation suggested, correlate the instruction, and put out of existence the "packet-system." The dean of a Faculty, even if he has "authority to carry out fair ideals of medical education," is too burdened with executive and business duties to fulfil satisfactorily the functions of a coordinating officer defined in this regard. It is just for this reason that certain medical institutions have, in addition to the dean as ordinarily employed, appointed a dean of students. What is needed, however, is a dean of teachers, not in name, but in actual practice.

The curriculum is overweighted with instruction in the so-called "specialties," not because they should not be taught, but because of the manner in which they are presented. It requires little consideration to realize that in the time at the teacher's disposal a specialized branch cannot be revealed to the student in the sense that when he enters into his professional life he is fitted to assume the responsibilities of its practice. The very name "specialty" indicates that such is the case, and yet only too often we who are in charge of such departments, unconsciously perhaps, even while we bitterly complain of the diminishing scale of allotted hours, are tempted to burden tuition with particularized instruction and description unnecessary and unabsorbable at this period of the student's career. Neither is it worth while to afford the pupil the opportunity of learning only what has been called "a mere fragment" of such divisions of medical science, nor to attempt to satisfy the pedagogic conscience with the statement promulgated with wearying reiteration that the student should be taught of this and that "specialty" only "what the general practitioner ought to know." In point of fact, that is, only too frequently, exactly what he is not taught, or not taught in the way it should be if he is to carry the knowledge with him into his graduate life.

Naturally, it is vitally necessary that the medical student shall be thoroughly grounded in the symptomatology, diagnosis and treatment of the commoner diseases which by universal consent and practice have been listed as "specialties" (the term is unfortunate), and that his limitations shall be impressed on his mind, i. e., his responsibility in relation to expert help, and when it is required, exactly as he receives instruction, for example, in the exanthems. But it is not worth while to spend hours in trying to teach students in their overcrowded undergraduate years the delicacies, for instance, of exact retinoscopy, as if they were in training for their life work along such lines. It *is* worth while, and absolutely necessary, for example, to make them realize the pernicious activities of eyestrain in relation to headache, the neuroses, functional gastric disturbances, and the long line of its interpretations, and to make them easily familiar with the simpler methods of detecting its causes, exactly as they are taught the significance of focal infections, or the consequences of protein sensitization. The same is true in many other particulars which easily suggest themselves, but need not be detailed.

But this cannot be done if the teachers of departments having allied interests stand apart, each handing out his own packet, doubtless admirable in itself and carefully wrapped, while each is largely ignorant of just what the other package contains. How much better would the entire product be if it represented the result of cooperative work symmetrically blended.

These faults in medical education do not pertain to the so-called specialties alone; the "general clinic" is by no means guiltless. It has been pointed out time and again that major surgery, for example, is far too frequently exploited—the word is used in its original sense, and not with the meaning which has in recent times become attached to it. Ten gastro-enterostomies in one period of general surgical clinical instruction, with never an opportunity of witnessing in the same room a finger amputation or a circumcision, representing a tally kept by a statistically inclined student, is not a record that, from the standpoint of practical surgical demonstrations, justifies commendation.

If pharmacology shall represent the sum of scientific knowledge concerning drugs, their preparation and their activities, it must be, and is, coordinated with chemistry. Moreover, the pharmacologist should be able by virtue of his training and experimental work to ascertain the effect of drugs in human diseases. But he cannot do this to the student's practical advantage, and by that same token to his own better development, unless he has access to clinical material (and this is true also of the department of research medicine), associating himself with the division of medicine in this respect, or else conveying the results of his observations through the medium of a teacher of applied therapeutics as an associate of his department.

Drugs are not the only remedial agents, and too little attention is paid to the principles and methods of physical therapeutics, or, if you please, mechanotherapy and its indications. On this neglect, in part, at least, depends a certain well-known drift from legitimate medical supervision.

In short, looking at this matter from any standpoint, if the student is to be properly fed educationally, he must have a much more evenly balanced diet, and, in the words of a great educator, "reform of the curriculum of the undergraduate medical school is one of the most pressing questions of present-day medical teaching."

The conspicuously excellent result which the cooperative work of our Council on Medical Education has achieved in elevating the standards of medical instruction in this country is an earnest that the attention which is being directed to the reformation and rehabilitation of the professional curriculum shall culminate in an equally fine issue. Surely this is a matter of deep concern to the members of our Association, who with definite right demand that those who shall in the future become their associates, or constitute their replacements, shall be properly equipped to meet the requirements of medical practice in whatever city, town or community they are destined to serve.

In spite of the well-recognized plethora of the curriculum, medical history should be brought to the attention of the student, not only because it represents an educational asset of value, but because it is of real service in shaping character and enhancing ethical traits. It is not necessary that special hours shall be assigned; the main facts can be readily and briefly woven into the fabric of general instruction as the course proceeds from one subject to another, enabling the students to "draw new life from heroic examples."

In the reformation of the medical curriculum, chiefly constructed as it is to meet the demands of the cure of disease, more place must be found to satisfy the claims of preventive medicine. It would be foolish not to recognize what has been described as "the change from cure to prevention as an outstanding tendency in contemporary medicine." We see how amply endowed schools have been and are being founded granting special degrees in public health; and, if doctors of medicine are to retain their share of this work, to which they are entitled, and be not only healers of the sick, but also, as they should be, "advisors to keep people well," instruction in our schools of medicine in this regard must be more universally amplified and of a better quality than that which at the present time usually obtains.

We have advanced our standards of medical education and multiplied the hours of instruction and demonstration, making ever increasing demand on the student's time, energy and intelligence; but have we in all respects fulfilled our duty? Is it not fair that the student should in his turn make certain demands on us with respect to the art of teaching? Many clinicians, surgeons and laboratory men happily combine high grade efficiency in their professional work and in their teaching, but not always. It is not proper, therefore, that, failing in the latter, they should be urged, if not required, in the words of Dr Pritchett, "to bring themselves to consider the art of teaching as also within their field of educational activity."

Whether medical students shall be instructed by "full-time" clinical teachers is a subject which has excited keen interest and occasioned vigorous discussion, and has sometimes called into action what Hacket would call "an acrimony of voice and gesture." The fact that this rule has been adopted in a number of medical schools in this country and in England does not bestow upon it the quality of essentiality in medical education. Even those who are strong advocates of "full-time" clinical teachers frankly admit that the case is not proven, or, in the words of one of them, "it is too early to predict the outcome of this new experiment."

Although there is no intention to speak about the considerations for and against this matter, there can be no objection to recording a personal belief that the experience gained in private practice furnishes the head of a clinical department with an asset in his teaching of which the student destined to be a practitioner cannot afford to be deprived.

The clinical teacher may himself not find time for practical research work, as that is ordinarily understood (although this by no means is always the case), but it should be conspicuous through the aid of his laboratory and his assistants in his departmental activities, and he should be thoroughly imbued with the spirit of research, without which his instruction cannot attain its fullest development. Observation, contact with medical practice, research, the spirit of research and teaching are the important avenues along which medical science has advanced.

2. *Graduate Teaching.*—That even today, except in limited supply, opportunities for graduate instruction, greatly needed and eagerly sought, are not commensurate with the rank they deserve and require, is a matter of common knowledge and of regret. To be sure, for many years postgraduate courses have been available, and some of them have been conducted, especially those which pertain to the "specialties," on a high plane and have achieved good results; but, in the main, it must be admitted that they have been unsatisfactory. Indeed, only too frequently men have been certified as qualified along certain lines of medical and surgical practice after inadequate instruction, and they have been stamped, as it were, with approval unjustified in the circumstances.

The recent war has been an important factor in awakening the medical conscience in this regard, in that it disclosed a situation far from creditable. Indeed, in many areas it was necessary to put into operation graduate instruction in general terms, and not alone as this pertained to the special needs of warfare.

In this era of reconstruction, no problem in medical education should create keener interest than that which is concerned with graduate instruction. This subject is receiving the earnest attention of medical educators, has prominent place on the program of our Council on Medical Education, and has stimulated a previous presidential plea. It should make a strong appeal to all members of our Association, teachers and physicians alike, and those in charge of graduate medical teaching should unite in elevating its standards and in furthering the plans for improving its technic; it should take its place in the rank with undergraduate instruction, and keep pace with it.

Time does not permit an analysis of the types of graduate medical courses which are and have been in operation. We are all well acquainted with the methods (as summarized by Dr. Meeker) of obtaining graduate educational equipment through the medium of clinical and laboratory assistantships, of personal courses, of attendance on clinics recommended from a central registration office (London type), of short "polyclinic courses" (too often imperfect and superficial), of brief organized university courses (somewhat similar to the polyclinic courses, but with the advantages of university surroundings), and of assistanships under university and foundation control. None of these plans, in spite of certain excellent qualities which pertain to most of them, meets the requirements of graduate instruction as it should be considered at the present time, in the sense of taking place in a school of graduate medical education, and, moreover, in one in cooperative affiliation with an undergraduate medical school, and preferably with one which is a department of medicine in association with a university.

In the last-named circumstances, the graduate school of medicine becomes part of a university system, as Dr. Meeker has said, and should be so organized that it can take advantage of all other available or required medical and scientific instruction, hospital or laboratory, and industrial plants. Under such conditions, a truly comprehensive plan of graduate medical education is possible, founded on the best types of courses, correlated with the facilities which have been named, and leading to a certificate or suitable degree. That such a plan is not "too comprehensive," and can be carried out with gradually increasing satisfaction to those concerned, is evident from the fact that at least in one university it is in full and satisfying operation, and has made a contribution of the highest value to medical education. There is no reason why in the near future similar methods of graduate school education should not be active in all our larger medical centers. No appeal can be too urgent for sympathetic, moral and financial support for such a type of graduate medical education.

3. *Medical Extension-Education.*—In recent times a rather widespread disquietude has arisen lest the supply of doctors should become inadequate. From the numerical standpoint, as a recent investigation has shown, this fear may be dismissed. But the geographic distribution of physicians is a problem that may well excite concern. It would seem that the rural districts, villages and smaller towns are being drained, on the one hand, and, on the other, are failing to receive their just quota of the graduates in medicine, owing to the attractions and greater facilities—laboratory and hospital—of the larger towns and cities, from which the physician with a modern training not unnaturally declines to be separated. Also, poor economic conditions add their deterrent influence.

The recent graduate stationed in the country, lest he suffer a disastrous eclipse, must keep in practical touch with new developments in diagnosis and treatment, and, moreover, his patients are insistent that he shall do so. He cannot leave his duties to seek such information and instruction in distant "centers;" hence methods are being devised whereby such facilities shall be brought to him in an endeavor to satisfy the practitioner's laudable ambition and his requirements, as well as the desires of his clientele.

In some of our states, South and West, and also recently in the East, annual courses have been organized, conducted through their respective university extension services, in cooperation with the county societies alone, or with these societies aided in certain respects by the state boards of health. Primarily it should be ascertained in which districts such courses are desired. Information in this respect may well be secured by the committees on scientific work of the state societies, as, indeed, in certain commonwealths it has been, and the courses suggested after consultation with the local or county society, and their membership, because it is from them that the invitation should emanate. Such instruction must be free from the taint of imposition, and must not be enforced by state authority.

Naturally, a corps of teachers would be required, and these can be obtained from the schools of medicine in the state, or from those which are departments of a university, preferably of the "younger group," or from members of the state societies who are suitably equipped for such instruction. State boards of health, as has already been noted, may well help in this movement. As a distinguished commissioner of health has said: "Highly approving of such courses, if they are requested by the practitioners through their state and county societies, I shall gladly place at the disposal of the selected group of teachers, if it is desired, the facilities of my department."

Reference has been made to graduate medical courses based on university-extension services, as they are already in operation, notably in one state. Therefore, when a university system includes a school of graduate medicine, it can carry its educational efforts to groups of physicians found in selected localities. Such endeavors have as yet not attained their full development, and for the most part, at least, are in their formative stage. A comprehensive program with respect to this type of education is being studied, on request, by the dean of the Graduate School of Medicine of the University of Pennsylvania and a committee appointed by the state medical society, which includes the formation of groups of physicians at favorable localities, each member of the group being regularly registered as an extension-student, the courses to be conducted in hospitals, and based on diagnoses, prognoses and recommendations as to the best medical and surgical procedures. The patients, previously fully studied according to the best modern methods, with their histories, the laboratory reports and the tentative clinical conclusions prepared by the members of the extension-group, constitute the "material" of the teacher or teachers provided by the university.

RELATION OF THE ASSOCIATION TO THE WORK

The Secretary of our Association has investigated carefully the relation which the American Medical Association, working in cooperation with its constituent associations, should bear to this subject, especially as it is concerned with the smaller counties, and suggests that in many instances the councilor districts of the state might be used as the units for the presentation of such courses, the teachers to be secured from the sources already named.

It is evident not only that instruction of the character which has been discussed from various points of view is desirable, but that it is desired. Moreover, this desire and this need emanate not alone from rural districts, but also from larger towns and cities, separated from medical centers, but provided with hospital facilities. It is further evident that the courses must vary according to the needs and wishes of those who desire to attend them, and include, on the one hand, information on history-taking, the technic of the simpler laboratory tests and improved and approved methods of physical examination, and, on the other, more advanced procedures of medical, surgical and diagnostic technic.

It is a subject which should increasingly attract the attention of physicians, whether they be practitioners or educators, or both. It is a matter which has been introduced in the program of our Council on Medical Education, and should form part of the deliberations of our Association of State Secretaries. It constitutes one of the many reasons which justify the appointment of a Field Secretary, through whom a close "personal touch between component and constituent state associations and the central body can be maintained." Happily, the choice of the Board of Trustees in this respect presages a new era of admirable and much-needed cooperative work.

All of us know that other methods have been suggested and put into operation designed to meet the situation which surrounds many physicians who for various reasons are not in contact with hospital and laboratory facilities. Prominent among these are diagnostic clinics, community health centers, and well-equipped small, so-called community hospitals, which in certain quarters and from some physicians have encountered a not unnatural opposition. It is useless, however, to disregard the fact that, in the words of a thoughtful medical writer, a "transition from individual to organized practice has begun," and that the movement spreads widely. This presents a problem not in contemplation, but in active existence, and its solution must be undertaken with the protection of the rights of the general practitioner as a paramount duty. But the general practitioner, properly unwilling to submit to the abrogation of professional work, on which he has a just claim, must also be not unwilling, intelligently and in a spirit of cooperation, to recognize the desires, the demands, if you choose, of the people among whom he lives to have at their disposal the same advantages which pertain to those who dwell in larger centers, equipped with facilities which meet the requirements of modern medicine. The public is not satisfied with a service which is devoted only to the cure of maladies and the mending of injuries, but is very much alive to the advantages of the prevention of disease and the conservation of health; and he, the practitioner, should be equally alive to his opportunity to secure leadership in such movements, a leadership which is his to hold and maintain, provided he approaches the problem in a spirit of cooperation and with a "resolute will to win." Moreover, as a recent investigation has shown, when properly conducted health activities (preventive medicine) are in operation, and secure the doctor's cooperation, not only is the total number of people applying to the practitioner for treatment increased, but his work has been made simpler and more effective. Again, the establishment of a rural hospital, where its need is definitely recognized, financed and managed, as in most instances it would be, with lay aid, but open freely to the doctors of the district, and with all its facilities at his disposal, as should be the case, represents an important incentive for young graduates in medicine to go to such regions, making their start as interns within its walls.

Questions relating to this whole matter, that is, in general terms, to the readjustments in medical practice (which be it remembered are not only impending, but are in operation), with due regard to the evaluation of the rights and requirements of the practitioner and the public, complicated as they are, none the less demand investigation, which shall eventuate in their satisfying solution. Hence it is a happy circumstance that the Trustees, mindful of their duty and in full recognition of a principle laid down on the day of the founding of our Association, are, in cooperation with the component and constituent parts of our organization, conducting a survey of the whole situation. The hope is expressed that this survey, or investigation, shall satisfy all the demands which it entails, and result not only in "the formulation of such principles and policies as would assure the greatest good to the public and to the general practitioner," but in recommendations with respect to a reformation of the medical curriculum, especially as this is concerned with failure to yield greater attention to health conservation which is fundamental in relation to this great problem.

The relation of the medical profession to so-called "cult-practice" is often, if not usually, misunderstood. As has been well said, there is no desire or intention to interfere, even if this were possible, "with the freedom of the individual to employ any method of healing he may please," so long as the interests of public or individual health are not endangered thereby; but, when vicious or dangerous tendencies crop out, it is the business of regular medicine, not only to take cognizance of them, but to endeavor to correct them. Hence it becomes the duty of every qualified practitioner to seek membership in his county and state medical organization, to study projected legislation related to the practice of any part of the healing art, to see that it is constructed on a proper basis, and in this regard to keep in touch with medical legislative conditions, exercising his or her right of franchise and right of influence.

If the plan to establish a legislative bureau as part of the activities of our central office, linked in its endeavors with those of the state associations, should be consummated, it would constitute a movement of the highest value in relation to our legal requirements and rights, and enable a united profession to exercise a just influence which could not be disregarded.

CONCLUSION

It has seemed proper this evening to utilize some of your time in retrospect on the past, to review, albeit in fragmentary manner, the history of American medical achievements, and of the establishment, the development and the activities of the American Medical Association, to emphasize, with not unnatural pride, the greatness of an organization which represents the profession of an entire country, and to refer to required readjustments along certain lines. That which has been done is an earnest of that which shall be done. In the words of a distinguished medical leader, spoken in this city twelve years ago, "we are justified in the confidence that, with the united support and loyalty of the profession, this Association, broadly representative and standing for the best ideals of medical science and art, and for professional and civic righteousness, will contribute a beneficent share to the working out of our national destiny."

The advancement of medical effort, the improvement of medical education, the highest type of medical service in the cure of the sick and injured and in the conservation of health, the protection of medical and public interests, leadership in all the phases of medical activity and the maintenance of ethical standards—these are the agenda of our Association. With confidence we face the future—its coming events, its opportunities, its responsibilities. Let us be loyal in thought and action, steadfast in effort, united in purpose, remembering that "The one Great Light which halos all is passionate bright endeavor."

UTERINE HEMORRHAGE *

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On this occasion I shall state in as simple words as possible merely what I myself have observed in the laboratory, in the ward, and in the operating room.

The various conditions causing uterine hemorrhage fall into two main groups: (1) those dependent on recent pregnancy, and (2) those independent of recent pregnancy. If we bear in mind these two main groups, a study of uterine hemorrhage becomes much easier.

UTERINE HEMORRHAGE DEPENDENT ON RECENT PREGNANCY

Uterine hemorrhage dependent on recent pregnancy occurs with: (1) premature separation of the placenta; (2) retained membranes; (3) hydatidiform mole; (4) chorio-epithelioma; (5) tubal pregnancy, and (6) pregnancy in one horn of a bicornate uterus.

Premature Separation of the Placenta.—In such a case, the physician is aware that pregnancy exists, and he understands the cause of the bleeding. His chief aim is to keep the patient quiet and prevent a miscarriage, if feasible. The possibility of placenta praevia is always in mind, and he will naturally be on the lookout for this condition.

Retained Membranes.—Here also the patient usually gives a history of pregnancy. Every physician, however, encounters patients who stoutly deny the possibility of pregnancy and who do their best to mislead the physician in order that he may innocently dilate and curet, and bring away the fetus and membranes. In the typical case in which no criminal operation has been attempted and in which the patient does her best to cooperate with the physician, there is a history of missing one or more menstrual periods, then bleeding has commenced, then a fetus has escaped with some water, and the after-birth has or has not been expelled.

In such cases dilation of the cervix and gentle curetting will bring away any remaining portion of the after-birth, and the diagnosis will be definitely settled by the finding of villi or shadows of villi in the tissue removed.

In taking the history one must ascertain, if possible, whether or not the fetus has been actually seen. If it has, well and good; if not, tubal pregnancy must be borne in mind, because more than once the expulsion of a decidual cast from the uterus has been taken for a miscarriage, and the existing tubal pregnancy completely overlooked. This phase will be considered more in detail under tubal pregnancy.

Hydatidiform Mole.—Now and again a pregnancy will apparently proceed normally for two or three months, and then there may be a little brownish discharge, or the patient may not feel particularly well. The case is watched for a month or two, when it is realized that something is radically wrong. The physician does not want to terminate a normal pregnancy, and yet he cannot afford to neglect his patient. Finally, it becomes clear that the uterus must be emptied, and he dilates the cervix and at once encounters quantities of small cysts that vary considerably in size, and remind one of the variation in size of the individual grapes seen when a grape-vine has worn out or gone to seed.

Now and then, as the uterus containing a hydatid mole increases in size, a multilocular cystic tumor develops on each side of the uterus. A knowledge of this fact materially aids one in making the diagnosis. These multilocular cysts are filled with relatively clear fluid. They are lined with several layers of lutein cells, and scattered throughout the stroma of the enlarged ovary are rows or clumps of these cells. I have never seen these multilocular lutein cysts except in association with a hydatid mole or with chorio-epithelioma. After removal of the mole, the cysts tend to disappear, and the ovary may again assume its normal size.

Chorio-Epithelioma.—Occasionally, after a hydatid mole has been removed, the patient continues to bleed. Examination discloses that the uterus is enlarged, and now and then a metastasis may be noted in the vagina or elsewhere. When the process is advanced, hemoptysis may be noted, due to metastases in the lung. After a hydatid mole has been removed, one is always fearful that chorio-epithelioma may develop or may have existed prior to removal of the mole. In some cases of chorio-epithelioma, no history of a previous mole can be elicited.

The histologic pictures of hydatid mole and chorio-epithelioma are very much alike. The large cystic villi, the proliferation of Langhans' layer and the marked outgrowth of the syncytium with vacuolization are present in both cases. In order to differentiate between simple hydatid mole and chorio-epithelioma, it is necessary to examine a section from the wall of the uterus, and, of course, this is possible only after the organ has been removed. A diagnosis of chorio-epithelioma should never be made from scrapings. The finding of coagulation necrosis of the tissue lining the cavity of the uterus, when the diagnosis lies between chorio-epithelioma and hydatidiform mole, is strong presumptive evidence of malignancy, but even then it is unwise to make a flat-footed diagnosis.

One must either go ahead and remove the uterus in suspicious cases or await developments.

We cannot be too careful in the examination of tissue removed shortly after pregnancy. The uterine musculature just beneath the placenta in the early months of pregnancy often contains large, suspicious cells which seem to represent the normal reaction of the stroma and muscle cells to the stimulus of pregnancy. Were they to be encountered in the uterine wall in the absence of pregnancy, sarcoma would be suspected; but, occurring when early pregnancy has existed, they are normal. Bilateral, multilocular, corpora lutea cysts frequently accompany chorio-epithelioma.

Tubal Pregnancy.—Twenty-five years ago, few physicians knew anything about tubal pregnancy. Today, nearly all cases can be recognized when rupture occurs, and many of them are diagnosed before rupture takes place, when operation can be performed with relative ease and little danger to the patient. The previous history in the majority of these cases is well known: possibly one pregnancy several years before and no conception since then, a period a few days or a month late, then a little more or less bleeding, continuous, a little pain to the right or left of the uterus, and in some cases a premonition of impending danger. On pelvic examination, a small mass may be felt to one side of the uterus, and when a clot has formed in the pelvis, this may be felt breaking up under the vaginal finger, as rather firm jelly would do.

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* Read before the South Carolina State Medical Association, Rock Hill, S. C., April 19, 1922.

Our duty is to watch for new signs that will enable us to recognize tubal pregnancy at an early stage. In 1905, while examining a colored woman under anesthesia just prior to operating, I found a small multinodular myomatous uterus, and a nodule to one side of the uterus that gave a totally different sensation to the examining finger. On gentle pressure it had a velvety feel; on deep pressure it was firm. I diagnosed tubal pregnancy without reading the history, and operation disclosed an unruptured tubal pregnancy. The velvety feel [1] was undoubtedly due to the engorged vessels in the tube wall.

Years ago, I examined scrapings from a uterus in which the surface epithelium was intact, and the glands near the surface were slitlike and in their deeper portions hypertrophied. The stroma of the mucosa just beneath the surface had been converted into typical decidua. I wrote the attending physician that a pregnancy existed somewhere. He removed a large myomatous uterus which filled the abdomen, and in the right tube, which lay up under the liver, was a pregnancy. From the appearance of the uterine mucosa it was certain that an extra-uterine pregnancy existed somewhere.

I saw an instructive case in Washington, D. C. The patient had gone over her period a few weeks, and had had some bleeding. She was curetted, and microscopic examination revealed the surface epithelium intact, the glands slitlike near the surface, and characteristically hypertrophied in the depth, while the stroma of the mucosa just beneath the surface had been converted into decidua. Although thickening of the tube could not be felt even with the patient under anesthesia, a diagnosis of unruptured tubal pregnancy was made, and at operation, next day, a tubal pregnancy not over 1 cm. in diameter was found.

In some cases, the thickened uterine mucosa is expelled, and the patient, and even the physician, may conclude that a miscarriage has occurred, and that all danger is over, whereas the pregnant tube is liable to rupture at any time.

Everything that escapes from the uterus should be most carefully examined for the fetus. If it is found, tubal pregnancy can in the vast majority of cases be definitely excluded.

In the volumes dedicated to the late Sir William Osler on his seventieth birthday, July 12, 1919, I reported a new sign that may be of value in the diagnosis of some cases of tubal pregnancy, especially when the tubal bleeding has not been severe, but nevertheless rather constant.

March 21, 1918, there entered the Church Home and Infirmary a thin, wiry woman who looked to be nearly 60 years of age, but who was actually only 38. She was the mother of seven children. For three weeks she had had pain in the right lower abdomen with intermittent attacks of abdominal distention. One week after the onset of the trouble the umbilical region suddenly became bluish black, although there had been no injury whatever in this region. Pelvic examination was very unsatisfactory on account of the marked abdominal distention. Operation, March 27, disclosed the uterus slightly enlarged, and, to the right of it, a freely movable mass, about 8 cm. long and 5 cm. broad. The bluish black appearance of the navel unassociated with any history of injury, together with a mass to the right of the uterus, made the diagnosis of extra-uterine pregnancy relatively certain, although the patient had not missed a period, and although there had been no uterine bleeding.

The umbilicus itself was of a greenish hue; above it there was a faint bluish tinge; below it the bluish appearance was more intense. The bluish discoloration gradually diminished in intensity during the patient's sojourn in the hospital. The gradual changes in color that took place in this region were suggestive of those that occur in a black eye resulting from a blow. At the operation the abdomen was filled with dark blood, and attached to the fimbriated end of the right tube was an extra-uterine pregnancy, which I was able to remove without sacrificing the tube. The patient made a good recovery.

Pregnancy in One Horn of a Bicornate Uterus.[2]—Early in my practice I saw a young woman who had missed a period and then started to bleed. On examination I found a uterus which seemed to be a little enlarged, and to one side of it was a well defined lump. The patient's father was a physician, and after due consideration we concluded that an exploratory operation would be advisable. I made an incision about an inch long and found a bicornate uterus with pregnancy in the right horn. The patient left the hospital in a week and went on to term.

Pregnancy in one horn of a bicornate uterus is really extra-uterine, when considered from the standpoint of the nonpregnant horn. If uterine bleeding exists when there is a tubal pregnancy, we can expect, in some cases at least, bleeding from the nonpregnant horn of a bicornate uterus when pregnancy exists in the other horn.

UTERINE HEMORRHAGE OCCURRING INDEPENDENTLY OF RECENT PREGNANCY

Uterine hemorrhages occurring independently of recent pregnancy naturally fall into the following groups: (1) hemorrhage due to constitutional conditions; (2) hemorrhage due to benign changes in the mucosa of the cervix and body of the uterus; (3) hemorrhage due to malignant changes in the mucosa of the cervix and body of the uterus; (4) hemorrhage due to the presence of uterine tumors, and (5) hemorrhage due to diseases of the adnexa.

Hemorrhages Due to Constitutional Conditions.—In cases of hemophilia, there may be a tendency to very profuse periods. In some other diseases there is also a tendency to profuse hemorrhages at the periods. Such bleeding naturally comes under the care of the physician and not the surgeon. These hemorrhages are incidental to the medical condition with which they are associated. The cause of the hemorrhage is evident, and as a rule the constitutional condition and not the local bleeding receives attention.

Hemorrhage Due to Benign Changes in Mucous Membrane of Cervix and Body of Uterus.—These include (1) cervical polypi; (2) polypi of the endometrium; (3) hyperplasia of the endometrium; (4) an increased tendency for the mucosa of the cervix and vagina to bleed in elderly persons, and (5) endometritis, with blocking of the cervical canal in women advanced in years.

Cervical Polypi: Simple polypi, no matter where situated, usually conform in histologic appearance to the mucosa from which they arise. Cervical polypi consist of cervical mucosa. When the polyp originates far up in the cervical canal, it is composed chiefly of cervical glands and stroma. If it springs from a point near the external os, the surface of the polyp on one side may be covered by the squamous epithelium of the part.

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[1] Cullen, T. S.: The Velvety Feel of an Unruptured Tubal Pregnancy, Bull. Johns Hopkins Hosp., 1906, p. 154.

[2] Cullen, T. S.: Pregnancy in One Horn of a Bicornate Uterus, Giving Symptoms Identical with Those of Tubal Pregnancy, Bull. Johns Hopkins Hosp. **17**: 155, 1906.

Nature tends to rid herself of the polyp, and it is gradually extruded. During the process of extrusion it becomes engorged, and there may be hemorrhage into the stroma of its tip. When the polyp is exposed and subjected to trauma, its tip often shows an inflammatory reaction.

Cervical polypi often bleed a little. The patient complains of a slight intermenstrual bleeding, and in cases in which the surface of the polyp is inflamed there may be a slight purulent or watery discharge.

Polypi Springing from Mucosa of Body of Uterus: These consist of uterine mucosa which has been forced into the cavity of the uterus, forming a tonguelike projection. Some of the glands are often dilated, and the tip of the polyp may show some hemorrhage. The center of the base of the polyp often contains strands of nonstriped muscle which extend into it from the uterine wall.

Polypi in the body of the uterus tend to produce excessive menstrual periods. There may be some slight intermenstrual bleeding as well.

Hyperplasia of the Endometrium: In this condition the mucosa is usually much thicker than normal. The surface may be smooth or show a tendency to be gathered into folds or polypi. The surface epithelium is, as a rule, thicker than normal, and the epithelial cells tend to be higher and to stain more deeply than usual. Some of the glands are small and round, others are very large. These large glands may be tortuous or spherical. Their epithelium is higher than usual, closely packed, and stains more deeply. Here and there the epithelium of an entire gland may stain lightly, coming out in sharp contrast to the surrounding glands.

The stroma of the mucosa is exceptionally cellular, and not infrequently nuclear figures are found in the stroma between the glands.

In no other condition of the endometrium do we, as a rule, find nuclear figures in the stroma, although they are normally present in the epithelial cells. Occasionally large venous sinuses are found scattered throughout the stroma, sometimes partially or completely filled with organizing blood. Hyperplasia of the endometrium is invariably accompanied by profuse and prolonged menstrual periods. The condition is usually noted during the child-bearing period, but I observed it in a girl, aged 16 years, so severe that when she entered the hospital the hemoglobin was only 30 per cent. On curettage we removed several tablespoonfuls of mucosa.

After curettage, the periods are usually relatively normal for from three to five months, and then curettage again becomes necessary. Sometimes after four or five curettings the patient is permanently relieved of her symptoms.

Hyperplasia is one of the most frequent causes of profuse menstrual periods. There is usually no intermenstrual discharge, and on histologic examination of the scrapings there is not the slightest resemblance to cancerous tissue.

Increased Tendency for Mucosa of Cervix and Vagina to Bleed in Elderly Women: In some elderly women there is marked atrophy of the vagina, and the retracted cervix merges almost imperceptibly into the vaginal mucosa. In some of these cases, no matter how careful the assistant is in washing up the vagina, there is a considerable amount of hemorrhage, blood oozing from fine points on the vulva, vagina and cervix. Any appreciable contact in such a case will tend to cause slight bleeding.

Mild Endometritis, with Blocking of Cervical Canal in Women Advanced in Years: When a woman of 60 years or older says that, since her menopause ten or more years before, she has had no discharge until the last week or two, and that this is blood-tinged and slightly irritating, we at once suspect cancer.

On several occasions I have examined such patients and found the cervix normal in appearance. On curettage I have been surprised to obtain so little mucosa. This on microscopic examination has shown marked atrophy of the mucous membrane of the body, together with a mild infection of the endometrium. There has been a slight infection, the cervix has become occluded, the secretion has collected, and, finally, the cervix has opened up again.

The occasional occurrence of these cases should not, however, lull us into a false sense of security. Every woman beyond the menopause who has bleeding should be examined, and if the cause does not then become evident, the uterus should be curetted and the scrapings examined microscopically.

Hemorrhage Due to Malignant Changes in the Mucosa of the Cervix and Body of the Uterus.[3]—These include: (1) squamous-cell carcinoma of the cervix; (2) adenocarcinoma of the cervix; (3) adenocarcinoma of the body of the uterus (squamous-cell carcinoma of the body is rare), and (4) sarcoma of the endometrium.

The vaginal portion of the cervix is covered by squamous epithelium. The cervical canal is lined with the mucosa which produces the mucous plug during pregnancy. The glands of this mucosa are of the racemose variety, and the epithelium lining them is of a very high cylindric type.

The cavity of the uterus is lined with a mucous membrane which usually varies from 2 to 4 mm. in thickness. Its glands are tubular, and between them is a very unusual stroma whose cells, as we have seen, become decidual cells when pregnancy exists inside or outside the uterus.

From any of these three kinds of mucous membrane, cancer may develop. Accordingly, we have three varieties of cancer of the uterus, squamous-cell carcinoma of the cervix, adenocarcinoma of the cervix, and adenocarcinoma of the body of the uterus.

Squamous-Cell Carcinoma of the Cervix: Advanced carcinoma of the cervix is readily recognized by a large friable growth, which too frequently involves the entire cervix and extends to the surrounding vaginal mucosa.

As a result of the campaign of education waged by the American Society for the Control of Cancer and by local medical societies, patients are coming to the physician earlier and earlier, so that cases are seen now in which the physician is by no means sure whether the cervix is cancerous or not. These patients should be sent to the hospital to have a wedge of the suspicious area cut out and examined microscopically. A few months ago[4] I reported a very early squamous-cell carcinoma of the cervix accidentally discovered when the uterus was curetted for hyperplasia. The cervical cancer was too recent to give rise to symptoms, but the microscopic picture was well developed, and gave some valuable clues as to the very beginning of squamous-cell carcinoma of this region.

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[3] Cullen, T. S.: Cancer of the Uterus, 1900, pp. 693.

[4] Cullen, T. S.: Early Squamous-Cell Carcinoma of the Cervix Accidentally Discovered When the Body of the Uterus was Being Curetted for Hemorrhage Caused by Hyperplasia of the Endometrium and by a Small Submucous Myoma, Surg., Gynec. & Obst. **33**: 137 (Aug.) 1921.

Adenocarcinoma of the Cervix: This frequently begins up in the cervical canal; but if the cylindric epithelium extends down beyond the external os, as it sometimes does, then the adenocarcinoma may be seen on vaginal examination. The diagnosis of this variety of gland cancer is sometimes difficult. It is the most malignant of all uterine cancers, and fortunately the least frequent.

Adenocarcinoma of the Body of the Uterus: This can be diagnosed with certainty only from scrapings. As a rule, the diagnosis is easy. When the operator removes a large amount of friable material with the curet, he suspects cancer, and hastens to make a microscopic examination of the sections. There is as much difference between the appearance of the normal lining of the uterus, and cancerous tissue, as there is between two different patterns of wall paper. The diagnosis is made from the general pattern of the growth, or from individual cell changes, or from both. Now and again several sections must be examined, and occasionally it may seem best to curet again in a month or two, and examine fresh sections. This is, however, rarely necessary.

Sarcoma of the Endometrium: This condition is rare. When sarcoma is found in the uterus, it is usually in the musculature, or associated with uterine myomas.

When sarcoma develops in the endometrium, it must of necessity arise from the stroma of the mucosa.

Several years ago I saw a patient who had slight uterine bleeding and a small nodule in the breast. The uterus was curetted, and while frozen sections were being made, the breast nodule, which was benign, was removed.

Microscopic examination of the scrapings revealed a sarcoma. Complete hysterectomy was done at once, and on the day after operation the patient was in excellent condition, but on the second day her temperature rose to 104 F; on the third day it was again normal, and on the fourth day it rose to 105 F. Malarial organisms were found in the blood, appropriate treatment was instituted, and a normal recovery followed. This case has been reported in full.[5]

Hemorrhage Due to Presence of Uterine Tumors.—Tumors of the uterus are divisible into three main groups: (1) myomas; (2) adenomyomas, and (3) sarcomas.

Uterine Myomas: These are very common, and in the beginning are usually interstitial; but as they grow, many of them become subperitoneal, and are either sessile or pedunculated. Some of them project into the cavity of the uterus. A myoma may reach large proportions without in any way influencing menstruation, but when it encroaches on the uterine cavity the periods are liable to be prolonged. A myoma not over 2 or 3 cm. in diameter, projecting well into the cavity of the uterus, may cause such severe menstrual hemorrhage that the patient is almost exsanguinated.

In some cases the submucous myoma becomes necrotic in its more dependent parts, causing a foul and almost continuous watery discharge from the uterus. On examination, a portion of the growth may be seen extending through the cervix. This tissue often feels soft, but on traction is found to be tough. Cancerous tissue, on the other hand, is friable. When a large submucous myoma has been expelled from the uterus, it may completely fill the vagina. In such a case the cervix can be recognized as a smooth ring encircling the pedicle of the tumor.

Adenomyomas of the Uterus: These form an interesting group of tumors. Although in a certain percentage of these cases the uterus is not enlarged, in the majority of them the uterus is at least twice the normal size. The inner muscular layers of the uterus are transformed into a coarse, diffuse, myomatous tissue into which the uterine mucosa flows. The thickening may be limited to the anterior or posterior wall, or form a mantle around the entire uterine cavity. In time, portions of the adenomyoma may be forced to the outer surface, forming subperitoneal adenomyomas, or into the cavity, producing submucous adenomyomas. In many cases there are also a few small, discrete myomas scattered throughout the uterus.

Adenomyomas generally cause a very profuse and prolonged menstruation, but no intermenstrual bleeding. At the period there may be a grinding pain in the uterus, due undoubtedly to swelling of the many areas of uterine mucosa in the diffuse growth of the uterine wall. Curettage, as a rule, yields perfectly normal mucosa. When adenomyoma exists, the uterus tends to become adherent to the surrounding structures.

Sarcomas: Uterine sarcomas are relatively rare. In from 1 to 2 per cent. they are associated with uterine myomas. Should a sarcoma develop in the endometrium, it can be diagnosed from scrapings; but in the average case it will be diagnosed as a myoma, and its true character detected only when the abdomen is opened, or when the tumor has been cut into. Typical sarcoma on section differs markedly from myoma. It is homogeneous, porklike, not striated, and as a rule is easily broken up with the finger, whereas the finger makes no impression whatever on the myoma.

Occasionally, portions of a sarcoma become submucous, and undergo necrosis and gradual disintegration. In such cases there is a good deal of foul vaginal discharge. Microscopic examination of pieces of the tissues will give the correct diagnosis, although the differentiation between a degenerating myoma and sarcoma is at times somewhat puzzling.

When considering uterine tumors and their differentiation from cancer, we must always remember that the two conditions are occasionally associated in the same uterus. In our series of cases we found squamous-cell carcinoma of the cervix in more than 1 per cent. of myoma cases, and, in nearly 2 per cent., adenocarcinoma of the body of the uterus complicated the myomatous condition.

Uterine Hemorrhage Due to Diseases of the Adnexa.—Tubes: One of the cardinal signs in tubal pregnancy is uterine bleeding. In cases of purulent salpingitis also the patient frequently has uterine hemorrhage. Time and again the operator is in doubt as to whether the given case is one of tubal pregnancy or pelvic inflammation. Sometimes he makes a diagnosis of pelvic infection and finds tubal pregnancy, and on the other hand he may diagnose extra-uterine pregnancy only to find that he is dealing with pelvic infection. Fortunately, in both instances it is necessary to open the abdomen, and the temporary error in diagnosis does not in any way militate against the patient's welfare. If it were essential to make an absolute diagnosis before operation, a curettage would usually reveal decidua where pregnancy existed, but there would be no sign of decidua in the inflammatory case.

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[5] Brady, Leo: A Sarcoma of the Uterus Arising From the Endometrium, Bull. Johns Hopkins Hosp. **29**: 164 (July) 1918.

Ovaries: Inflammatory diseases of the ovaries are invariably secondary to and associated with salpingitis; consequently, what has been said about uterine bleeding associated with pus tubes applies to inflammation of the ovary.

Ovarian cysts and ovarian tumors occasionally cause slight uterine bleeding. The presence of the tumor independent of the uterus usually gives us the clue as to the hemorrhage, and with the removal of the ovarian growth the bleeding ceases. It is always well, however, to examine the uterus carefully if the bleeding has been severe. A woman who had been bleeding severely had not only a large ovarian tumor with a twisted pedicle, but also a carcinoma of the body of the uterus. When considering the diagnosis and treatment of any given lesion in the pelvis, it is always essential to remember that any one or more of various conditions may be responsible for the hemorrhage.

CONCLUSIONS

I have merely given a bird's-eye view of the various conditions that occasion uterine bleeding. When I was a student, we knew little or nothing about chorio-epithelioma, tubal pregnancy, hyperplasia, pus tubes or adenomyoma of the uterus. No one ever thought of attempting to remove a cancerous uterus, and a hysterectomy for fibroids was rarely considered. It was several years after my graduation before I saw the first appendix removed. If physicians could have looked down the ages from the beginning of time and had the power of selecting the best period in the world's history in which to practice gynecology and abdominal surgery, could we possibly have selected a more fruitful one than the last three decades? America has had no small part in placing abdominal surgery on such a sound and satisfactory scientific basis.

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USE OF THE CARBON ARC LIGHT IN THE PREVENTION AND CURE OF RICKETS

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In previous papers,[1] attention has been called to the curative effect of sunlight in infantile rickets. It has been shown that exposure to the sun's rays for about one-half hour daily, or even four or five times a week, is sufficient to bring about a definite and dependable cure of this disorder. The curative effect can be noted not only by ordinary physical examination, but also by roentgenograms of the epiphyses of the wrist, and by an increase in the content of inorganic phosphate in the blood. These results have been substantiated on rats by us[2] and by Shipley, Park, Powers and McCollum[3] in experiments in which the sole protective agent was frequent exposure to sunlight.

As is well known, Huldschinsky[4] and others have made use of the mercury vapor quartz lamp for this purpose. The rays which this lamp emits are rich in ultraviolet, but its spectrum differs markedly from that of the sun, in that it is discontinuous, and that much of its ultraviolet rays are of wave lengths considerably shorter than those of sunlight. For this reason, as has been referred to elsewhere,[5] it was deemed worth while to try the effect of the white flame carbon arc lamp, which more nearly approaches the sun's spectrum.[6] The fact that this lamp is very rich in luminous rays was another reason for testing its therapeutic value, for it seemed that it might provide illumination at the same time as therapy.

It has been our experience, as stated elsewhere, that in the winter, and especially in the early spring, rickets comes about on every diet. It is generally mild and overlooked; but if routine clinical, roentgenologic and chemical examinations are carried out, it is surprising what a small proportion of bottle-fed infants will be found to have escaped rickets by March or April. This aspect of the subject will, however, be discussed in detail at another time. It may be mentioned, in passing, that rickets is by no means confined to the artificially fed baby. A recent survey of a group of breast-fed infants showed that at the end of March almost one half gave definite roentgenologic evidence of rickets.[7] The infants which were treated by the carbon arc light had been on standard diets, which, as will be observed in Table 1, included raw certified milk, dry milk, malt soup and protein milk. All received orange juice daily. Roentgenologic examinations had been carried out every month in a routine way, as in the case of all infants in the institution, and at the first sign of rickets heliotherapy was undertaken, the diet remained unchanged.

The carbon arc lamp was not made for this definite purpose, and was similar to, but smaller than, those employed in taking motion pictures. A coarse meshed wire screen was placed in front of the lamp. The carbons were "white flame," and the current was 30 amperes and 110 volts. The lamp can be so adjusted that 15 amperes is used, in which case it gives a decreased amount of illumination. The infants, entirely naked, were placed at a distance varying from 3 to 9 feet (as mentioned in the table) from the lamp, and were provided with spectacles or other covering for the eyes. This form of irradiation does not lead to any tanning of the skin. That this is the case shows that pigmentation is an unessential factor in the heliotherapy of rickets, and argues against Rollier's theory that the beneficial action of sunlight is due to and in accordance with the degree of pigmentation which is produced. There is no tendency to superficial burns. Whereas one has to be very careful in using the mercury lamp to avoid burns, and it is difficult to gage the correct dosage of light, in the use of the carbon lamp almost no care need by exercised in this regard; an infant, at the very outset, can be exposed for one hour at a distance of 3 feet and will manifest no signs of irritation of the skin on the following day. Nor does the same care have to be exercised to avoid giving an overdose.

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[1] Hess, A. F., and Unger, L. J.: The Cure of Infantile Rickets by Sunlight, J. A. M. A. **77:** 39 (July 2) 1921. Hess, A. F., and Gutman, M. B.: The Cure of Infantile Rickets by Sunlight, **78:** 29 (Jan. 7) 1922.

[2] Hess, A. F.; Unger, L. J., and Pappenheimer, A. W.: The Prevention of Rickets in Rats by Exposure to Sunlight, Proc. Soc. Exper. Biol. & Med. **19:** 8, 1921.

[3] Shipley, P. G.; Park, E. A.; Powers, G. F., and McCollum, E. V.: The Prevention of Rickets in Rats by Exposure to Sunlight, Proc. Soc. Exper. Biol. & Med. **19:** 43, 1921.

[4] Huldschinsky, K.: Die Behandlung der Rachitis durch Ultraviolettbestrahlung, Ztschr. f. orthop. Chir. **39:** 426, 1920.

[5] Hess, A. F.: Further Experiments on the Prevention of Rickets in Rats by Exposure to Light, J. Biol. Chem. **50:** 44, 1922.

[6] The spectrum of this light is more continuous (a line spectrum), and its ultraviolet rays more nearly resemble those of the sun; like the sun, it is rich in rays about 300 microns.

[7] These nursing infants were almost all well nourished and the offspring of the Russian Jewish population of the tenement district of New York. In referring to the incidence of rickets or drawing conclusions of the effect of diets or hygienic measures, the month when the observations were made should always be stated. It is not sufficient to mention merely the season, as rickets increases definitely month by month—from December to January, January to February and February to March.

The course of the treatment was followed by clinical, roentgenologic and chemical examinations which were repeated at least every month. The table gives the details of the cases, but may require some interpretation. It will be noted that in every instance there was a rapid subsidence of the signs of rickets, which was evident by roentgen ray frequently after daily exposures of but two weeks. This consisted of calcification of the lower epiphyses of the radius and ulna, which increased progressively as the treatment was continued. Accompanying these changes was the constant increase in the inorganic phosphate of the blood, which, in some cases, had a tendency to fall after heliotherapy was discontinued; this phenomenon had been previously noted in relation to the treatment of rickets with sunlight. When carried out according to the method of Doisy and Bell, the normal inorganic blood phosphate of an infant may be considered to be from 4 to 4.5 mg. per hundred cubic centimeters of blood, although there is a marked "seasonal tide" in this regard—an ebb in the winter and a flood tide in the summer—which must be taken into consideration. In rickets the inorganic phosphate is almost always below 3.75 mg. per hundred cubic centimeters, and, as will be noted in the table, may drop as low as 2.17 mg.

It will be observed that the intensity of the treatment differed in two respects; in one set of cases exposures were carried out for one-half hour at a distance of 3 feet, whereas in another group the period was lengthened to one or two hours, and the distance of the lamp set at 9 feet. This procedure came about in the following way: At first our object was to ascertain merely whether this form of irradiation would effect a cure, so that the lamp was placed as near as possible without occasioning an undue degree of heat. Exposures were made for fifteen minutes daily at first, and very soon increased to one-half hour. When it became evident that these rays were effective the infants were placed at a distance of 9 feet, with the object of ascertaining whether the lamp could be used for illuminating the room at the same time as for therapeutic purposes. It will be seen that one hour even at this distance sufficed to bring about a rapid cure.

Before the carbon arc lamp was used clinically, experiments with animals had shown that rats could be regularly protected in this way, and it has been used in carrying out a large number of tests in relation to the effect of light in experimental rickets. Exposures of about three minutes daily at a distance of 3 feet were sufficient to bring about this protective effect. Table 2 gives a summary of the data on fifty-three animals

TABLE 1.—RACHITIC INFANTS TREATED WITH CARBON ARC LIGHT

			Treatment			Roentgen Examinations		Inorganic Phosphate (Blood)		
Case	Age, Months	Diet	Dates	Length, Minutes	Distance, Feet	Dates	Rickets	Date	Mg. %	Comment
1. M. E.	29	Malt soup	12/ 9/21	15	4	12/15/21	Moderate	12/ 6/21	3.70	K_2HPO_4, 2 gm. daily.
			12/16/21	30	4	1/ 2/22	Healing	1/ 5/22	4.00	10/16/21 to 12/8/21
			1/ 8/22	30	3	1/17/22	Improved	2/11/22	4.36	
			to 2/22/22	30	3	2/18/22	Healed	3/14/22	4.03	
						3/18/22	Healed	4/14/22	4.00	
2. Y. D.	12	Dry milk	12/ 9/21	15	4	12/15/21	Slight	12/ 5/21	3.70	
			12/16/21	30	4	1/ 2/22	Healing	1/ 5/22	3.90	
			1/ 8/22	30	3	1/17/22	Healing	2/15/22	4.31	
			to 2/22/22	30	3	2/18/22	Healed	3/15/22	4.08	
						3/18/22	Healed	4/13/22	4.03	
3. S. L.	5½	Raw milk	1/30/22	15	3	1/17/22	Slight	1/29/22	3.84	
			2/14/22	30	3	2/18/22	Healing	2/28/22	4.34	
			to 3/21/22	30	3	3/18/22	Healed	3/27/22	4.16	
						4/15/22	Healed	4/27/22	4.16	
4. D. R.	13	Raw milk	1/30/22	15	3	1/17/22	Moderate	1/26/22	3.49	
			2/14/22	30	3	2/18/22	Healing	2/28/22	4.16	
			3/21/22	30	3	3/18/22	Healed	3/27/22	4.16	
						4/15/22	Healed	4/27/22	4.27	
5. C. B.	6½	Raw milk	2/ 6/22	120	9	1/17/22	Slight	1/26/22	3.69	
			to 3/ 5/22	120	9	2/18/22	Healing	2/28/22	4.29	
						3/ 4/22	Healed	3/27/22	4.25	
						3/ 8/22	Healed	4/27/22	4.36	
						4/15/22				
6. M. C.	9	Dry milk	2/ 6/22	120	9	1/17/22	Slight	2/ 4/22	3.84	
			to 3/ 5/22	120	9	2/18/22	Healing	2/ 3/22	4.44	
						3/ 4/22	Healed	4/ 3/22	4.00	
						3/18/22	Healed	5/ 3/22	4.54	
						4/15/22	Healed			
7. R. S.	14	Dry milk	2/19/22	120	9	2/18/22	Moderate	2/17/22	3.73	
			to 5/ 9/22	120	9	3/ 4/22	Moderate	3/17/22	4.34	
						3/17/22	Healing	4/14/22	4.00	
						4/ 1/22	Improved	5/10/22	4.54	
						4/15/22	Almost healed			
8. F. F.	12	Protein milk	2/19/22	60	9	2/18/22	Moderate	2/ 9/22	3.71	
			to 5/ 1/22	60	9	3/ 4/22	Moderate	3/10/22	3.77	
						3/17/22	Healing	4/10/22	4.16	
						4/ 1/22	Improved	5/10/22	4.20	
						4/15/22	Improved			
9. D. J.	14	Dry milk	3/ 7/22	60	9	3/ 4/22	Moderate	1/ 7/22	3.11	K_2HPO_4, 2 gm. daily.
			to 5/ 9/22	60	9	3/18/22	Healing	2/ 3/22	3.22	1/3/22 to 3/5/22
						4/ 1/22	Improved	3/ 3/22	2.77	
						4/15/22	Almost healed	4/ 1/22	3.57	
								5/ 2/22	4.46	
10. H. B.	17½	Raw milk	3/ 7/22	120	9	3/ 4/22	Marked	12/30/21	2.94	K_2HPO_4, 2 gm. daily.
			to 5/ 9/22	120	9			2/ 5/22	3.11	1/3/22 to 3/5/22
						3/17/22	Healing	3/ 5/22	2.17	
						4/ 1/22	Improved	4/ 2/22	3.44	
						4/15/22	Improved	5/ 9/22	3.75	
11. P. B.	14	Protein milk	3/23/22	60	9	2/18/22	Slight	....	3.59	K_2HPO_4, 2 gm. daily.
			to 5/ 9/22	60	9	3/18/22	Moderate	3/17/22	3.57	2/23/22 to 3/23/22
						4/ 1/22	Improved	4/14/22	3.92	
						4/15/22	Improved	5/10/22	4.34	

which were treated while on the Sherman and Pappenheimer diet.

There is another aspect which should be referred to in connection with this study. In several cases we had attempted to bring about a cure of infantile rickets by means of large doses of the secondary potassium phosphate (K_2HPO_4) in addition to the ordinary diet; 2 gm. was given daily in divided doses. In view of the fact that rickets can regularly be cured in animals by an addition of phosphate to the dietary, it seemed as if this simple measure might be of value in infants. In four cases (Table 1), in which four different diets were being given, the potassium phosphate either failed to improve the condition, or the benefit was doubtful. Moreover, it will be noted that the inorganic phosphate of the blood decreased rather than increased during this period. On the other hand, there were prompt and definite evidences of cure in these cases when the carbon arc light therapy was substituted for the phosphate. In some, however, it seemed as if the previous administration of the phosphate aided and hastened the curative effect of the light.

TABLE 2.—PREVENTION OF RICKETS IN RATS BY CARBON ARC LIGHT

Rachitic Diet	No. of Rats	Irradiation		Rickets	
		Duration, Minutes,	Distance, Feet	Roentgenogram	Pathologic Condition
Flour, 95%................	11	3	3	Negative	Negative*
Calcium lactate, 2.9%....	12	4	3	Negative	Negative
Sodium chlorid, 2%.......	4	5	3	Negative	Negative
Ferric citrate, 0.1%.......	12	10	3	Negative	Negative
	3	60	3	Negative	Negative
	3	60	6	Negative	Negative
	4	60	9	Rickets	Rickets
	4	60	15	Rickets	Rickets
	53				

* Two showed slight rickets.

The carbon arc lamp has been found, in the laboratory as well as in the clinic, to be a very effective therapeutic agent in the prevention and cure of rickets. It has the advantage of being comparatively inexpensive, and its rays are nonirritating to the skin, so that it can be used for hours with perfect safety. There can be little doubt that, in the near future, rickets clinics will be established in our larger cities, where not only cod liver oil will be supplied, as suggested and carried out in this city some years ago,[8] but also heliotherapy will be practiced. It would seem that in such clinics or in child-caring institutions, lamps of this kind may prove serviceable during the winter and spring months for protective therapy for groups of children. Such treatment would be of especial value for negro infants; for it is evident that if these babies—whose skin tends to filter out the essential rays of the sun—are to thrive in the cities of the temperate zone, they must be provided with a greater abundance of effective light than white infants.

16 West Eighty-Sixth Street.

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[8] Hess, A. F., and Unger, L. J.: Prophylactic Therapy for Rickets in a Negro Community, J. A. M. A. **69**: 1583 (Nov. 10) 1917.

Physician and His Fees.—The physician who is not clear in his charges, who veils his intention of holding his patients to their obligations by deferring the issue, not only breeds distrust but suggests the possibility that he is not familiar with the correct attitude which he should assume, and is fighting for time to recover his poise and to grapple with the new situation.—P. J. Flagg, *Hosp. Prog.* **3**:142 (April) 1922.

HIGH FREQUENCY CURRENTS AND ROENTGENOTHERAPY IN VESICAL TUMORS

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AND
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The introduction by Beer of the high frequency spark in the treatment of vesical tumors was an impetus to the study of satisfactory methods for controlling such growths. Endovesical and transvesical application of the high frequency current was taken up with great enthusiasm by urologists, so that at present these forms of treatment are considered by a majority as the method of choice in tumors of the urinary bladder. Clinical experience, together with the teachings of modern biology and pathology, have helped to clear the field. In the application of high frequency currents one must distinguish between fulguration, the destruction of structures by the electric spark, and surgical diathermy, the killing of tissues without sparking by the heat produced through the resistance offered by the tissues to the current forced through them.

Fulguration may be applied by the endovesical route, the cystoscope with the attached carrying tube and active electrode being introduced through the urethra, while the inert electrode is placed on the back of the patient. The destruction of the tumor is accomplished without opening the viscus, the current used being of low voltage and amperage. This procedure is the method of choice in all presumably benign tumors whose location and size permit approach by the fulguration wire. Whether the spark is directed to the base or the crown of the growth will depend on the character of the papilloma. The quickest method of removing such an excrescence is to place the wire tip directly in the base of the tumor. Thus the nourishing blood vessels are rapidly obliterated. In consequence, the growth shrivels immediately and the whole operation is finished in one step. This sort of fulguration is advantageously applicable only to the leaf shaped papillomas that have a constricted pedicle and are so transparent that the blood vessels running through them are easily seen.

However, in papillomas that carry a dendritic, bushy crown, the direct approach to the base may not only be difficult but also disadvantageous for other reasons. Even if one succeeds in placing the end of the wire into the base, the crown of the tumor is likely to drop over it, making it impossible to watch the effect of the spark. Then the pushing around of the crown may lead to the separation of intact particles, thus leading to multiple implantation of such fragments, whose inclination toward proliferation may eventually lead to a papillomatosis of the entire bladder. In all such instances it is advisable to start the coagulation from the top of the growth, bringing the active electrode successively in contact with various sectors of the crown.

Even if particles of the tumor are dispersed throughout the cavity of the bladder, these fragments are readily devitalized by the spark and unable to form an implant. As a rule, in such cases it will be necessary to make several applications at various sittings; but this disadvantage is outweighed by the safety of the procedure.

Endovesical fulguration must not be attempted if circulatory changes are observed around the base of the papilloma, though in all other particulars this growth may show the clinical signs of benignancy. These changes may be edema, submucous blood patches, engorged and numerous blood vessels, or simply thickening and rigidity of the adjacent mucosa, which in such a case, as a rule, has lost its normal gloss. Then the application of the spark may involve pronounced danger. It must be remembered that the fulguration spark not only burns but also produces a mechanical effect, divulsing and comminuting the tissue it is brought to bear upon.

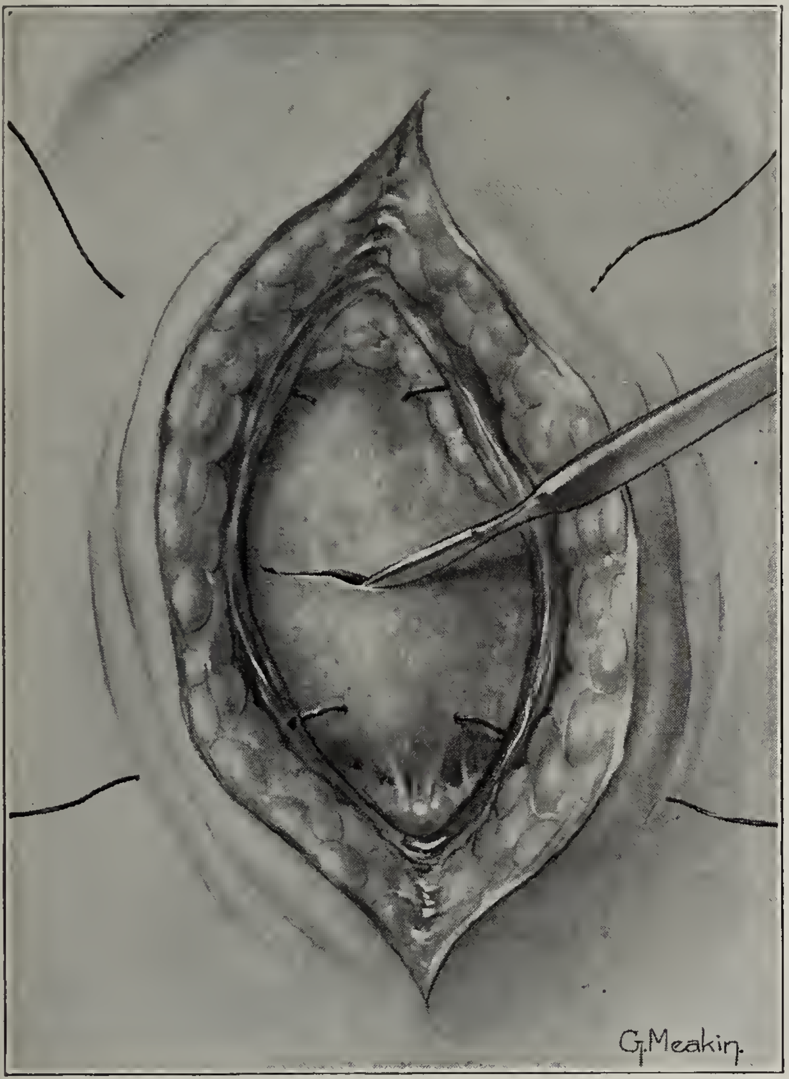

Fig. 1.—Bladder exposed; transverse incision placed between the two suspension sutures.

These circulatory disturbances may be due to inflammation subsequent to infection, or to malignant degeneration in and around the base of the tumor. In either case fulguration may be followed by untoward results. Infectious matter may be forced into the surrounding tissues, and severe pericystitis and even peritonitis may develop; in the case of malignancy, forced dissemination of malignant cells may result, which quite often leads to an explosive luxuriation, so that in a short time the whole pelvis becomes filled with cancerous masses.

In all cases of the character mentioned and in all decidedly malignant instances, surgical diathermy, after the bladder has been opened, should be employed; that is, currents of higher tension and voltage are used. The details of administering the high frequency current will again be regulated by the features peculiar to the tumor under consideration. The leading requirements are simplification of the entire procedure, avoidance of implantation of tumor particles likely to luxuriate in the adjacent areas, and the delivery of a finished surgical product, thus making possible an early resumption of the natural functions and shortening the time of recovery, and at the same time satisfying the principal postulate, the avoidance of a relapse of malignancy.

TECHNIC

We apply in vesical tumors solely the monopolar method. The inert electrode, a square of blocked tin, 20 by 10 cm., padded with gauze soaked in physiologic sodium chlorid solution, is placed under the hips of the patient, while the coagulation is carried out by a metallic electrode introduced into the opened bladder. Into the rectum a Barnes bag is inserted, and this is distended by 200 c.c. of water, raising the trigon and facilitating the clearance of the vesical base. The bladder is distended with 200 c.c. of a 2 per cent. protargol solution. By the usual median abdominal incision, the anterior aspect of the bladder is exposed, and the reduplication of the peritoneum is stripped off by gauze dissection, exposing freely the outer anterior bladder wall. Then in the upper and lower angle of the wound two tension sutures are inserted which penetrate the bladder wall. The ends of the suture are secured by metal clamps, the weight of which helps to elevate the bladder, which in later stages makes the vesical cavity better accessible. Now the bladder is opened between these guy ropes by a transverse incision (Fig. 1). The transverse incision, while permitting free exposure of the vesical interior, offers the advantage of facilitating the suturing of the bladder wound and at the same time prevents oozing of urine into the cavum retzii, in case the suture line should give. Then in the upper and lower angle of the vesical incision a fiber retractor is inserted. As a rule, pulling in an occipitocaudal direction will suffice to give sufficient clearance; in the case of very large tumors, one or two lateral retractors may have to be added. If one encounters an arboraceous bushy tumor, an electrode carrying three or four spikes is chosen (Fig. 2); and, by raining a shower of heavy sparks all over the crown of the tumor, a superficial coagulation or carbonization is accomplished. This deals successfully with any hemorrhage present, prevents bleeding during the following steps, and at the same time does away with the danger of implantation, because even if tumor particles are broken off during the necessary

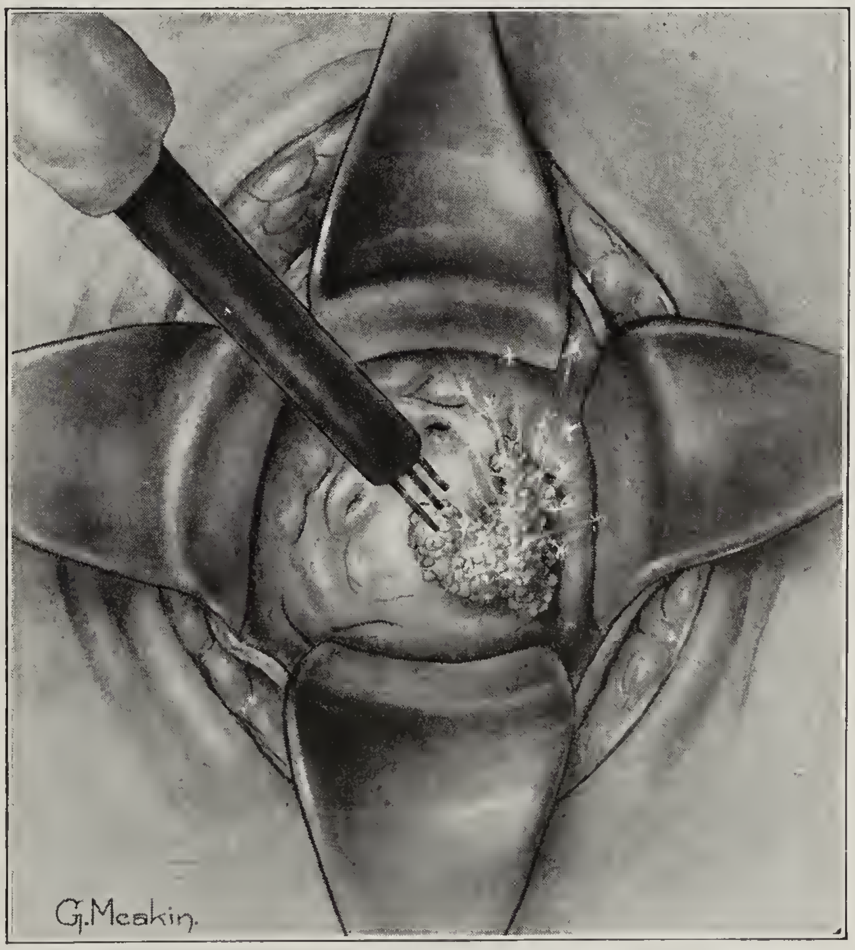

Fig. 2.—Carbonization of arboraceous crown of tumor with multispiked electrode.

manipulations, these crumbs are already devitalized. If the tumor is pedunculated, its seared top is seized with forceps and gently pulled upward. The exposed pedicle is now severed with a galvanocautery closely to its implantation (Fig. 3). The resulting stump and the immediately adjacent area are now coagulated with a stamp-shaped electrode to the desired depth (Fig. 4). If the tumor is dendritic, but rather sessile without a well defined pedicle, then the initial act of sparking is executed by means of a single spiked electrode. The sparks of this cover a lesser area than the multispiked one, but produce deeper penetration, so that the whole tumor mass is quickly reduced to a hard crust (incineration). This procedure is more in the nature of the original sideration. Then, the stamp-shaped electrode is applied again for the coagulation of the base, care being taken to include the whole visible and palpable area of malignant infiltration in the coagulation. The sideration and coagulation are carried on until a thoroughly dry scab results and no punctate oozing is to be seen. The scab is as a rule white, unless the tumor is very rich in blood, when it is black. Under no condition is the spike pushed into the tumor mass, for reasons explained above. Sessile infiltrating tumors are coagulated immediately with the stamp electrode without any previous sparking.

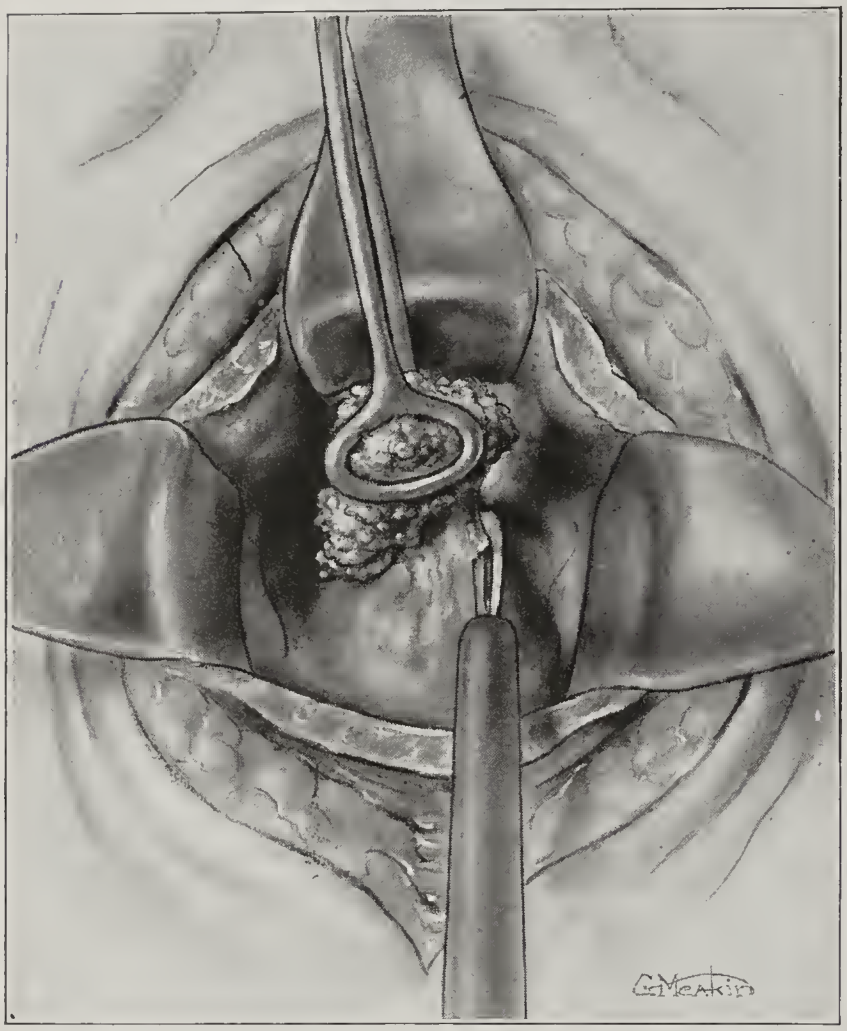

Fig. 3.—Elevation of tumor crown; severing of the pedicle by the galvanocautery.

COMMENT

The extent of the coagulation and to what depth it ought to be carried out deserve some discussion. At first it was deemed necessary to coagulate the entire tumor mass in dealing with malignant growths. But experience covering immediate and remote results in bladder tumors and uterine cancers led to restrictions which, if applied, apparently improve the results in a striking way. If, for instance, a tumor, whether an indigenous vesical growth or a prostatic cancer that perforated into the bladder, involves the vesicorectal septum, a complete coagulation of this mass will produce a cloaca after the sloughing is finished. In addition to the distress caused to the patient, such a condition will almost invariably lead to general sepsis or to death by the development of a septic pyonephrosis. Therefore, in cases of this type the coagulation should penetrate the tumor only to a limited depth, while the remainder of it is left to the influence of roentgenotherapy.

In case the latter should be successful, then the part of the tumor that replaced to a certain extent the septum will in course of time be replaced by fibrous tissue, thus avoiding the formation of a cloaca. This procedure, originally instituted as the choice of the lesser evil, became under the weight of further experience the routine method. It was observed that roentgenotherapy following partial electrocoagulation yielded curative results that, in our experience, surpassed those previously accomplished by the employment of one of these methods alone.

After the necessary electrocoagulation is completed, the bladder is mopped clean, care being taken to do all the sponging by dabbing and not by wiping, thus avoiding traumatism to the vulnerable vesical mucosa. Then the incision in the bladder is closed by catgut sutures inserted in such a way as to guarantee a broad apposition and avoidance of impaction of the mucosa into the suture line (Fig. 5). Over this suture a simple running suture is whipped to insure water tightness. Then the tension sutures supporting the abdominal wall are placed. Underneath these sutures a fine drainage tube, preferably a silver one, is placed, parallel to the incision and protruding at each end of it (Fig. 6). In this way perfect drainage is insured, and even in case of infection, sloughing of the fascia is prevented. Then fascia and cutis are closed in the usual way, and the guy ropes are tied.

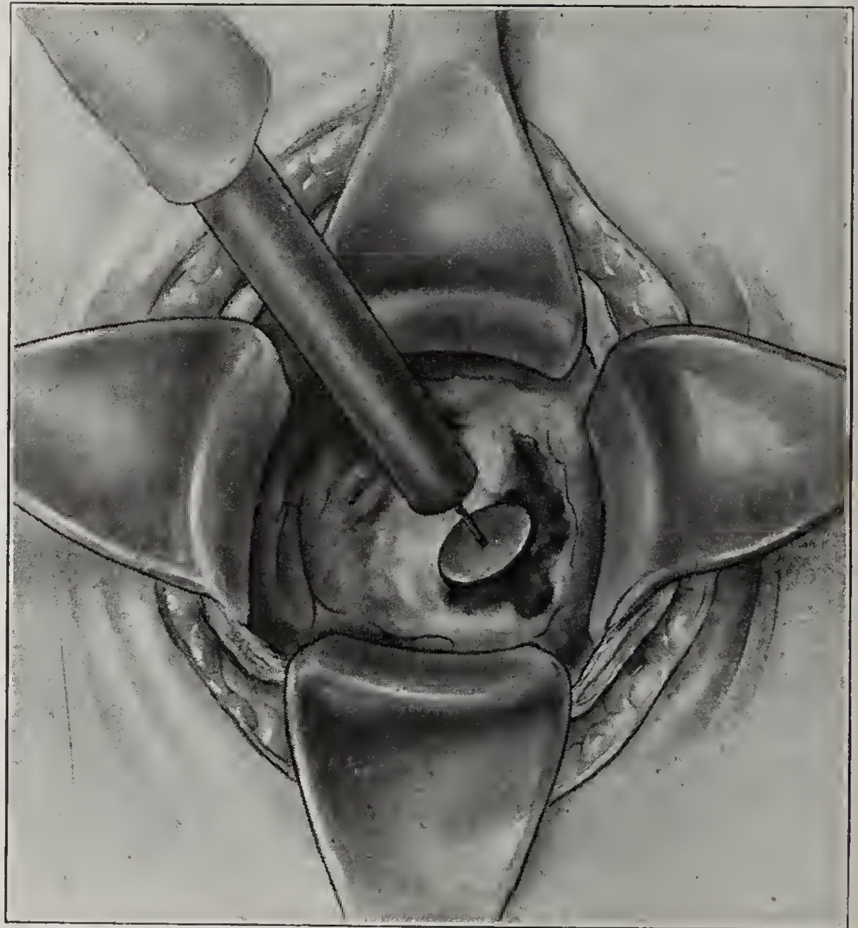

Fig. 4.—Coagulation of tumor base and concomitant sealing of adjacent lymphatics with the stamp-shaped electrode.

The patient either begins to urinate naturally shortly after the operation, or, if unable to do so, is catheterized at regular intervals until the natural function is resumed. As a rule, the whole wound heals by first intention, and even if a slight breaking down should occur, the repair sets in quickly.

The sloughing away of the diathermic scab takes from ten to sixteen days, according to the extent of the electrocoagulation obtained. On account of the varying intensity of the desiccation in the various sectors of the area subjected to diathermy, and the timely difference in the subsequently developing demarcating inflammation, the sloughing proceeds in the various areas with varying velocity. Therefore there are never large chunks of scabs thrown off at once, and the loosened shreds are further softened by the urine, and the sloughed particles are voided with the urinary stream. Beginning at the end of the first week after the operation as a matter of extreme precaution the bladder is regularly flushed with an antiseptic solution.

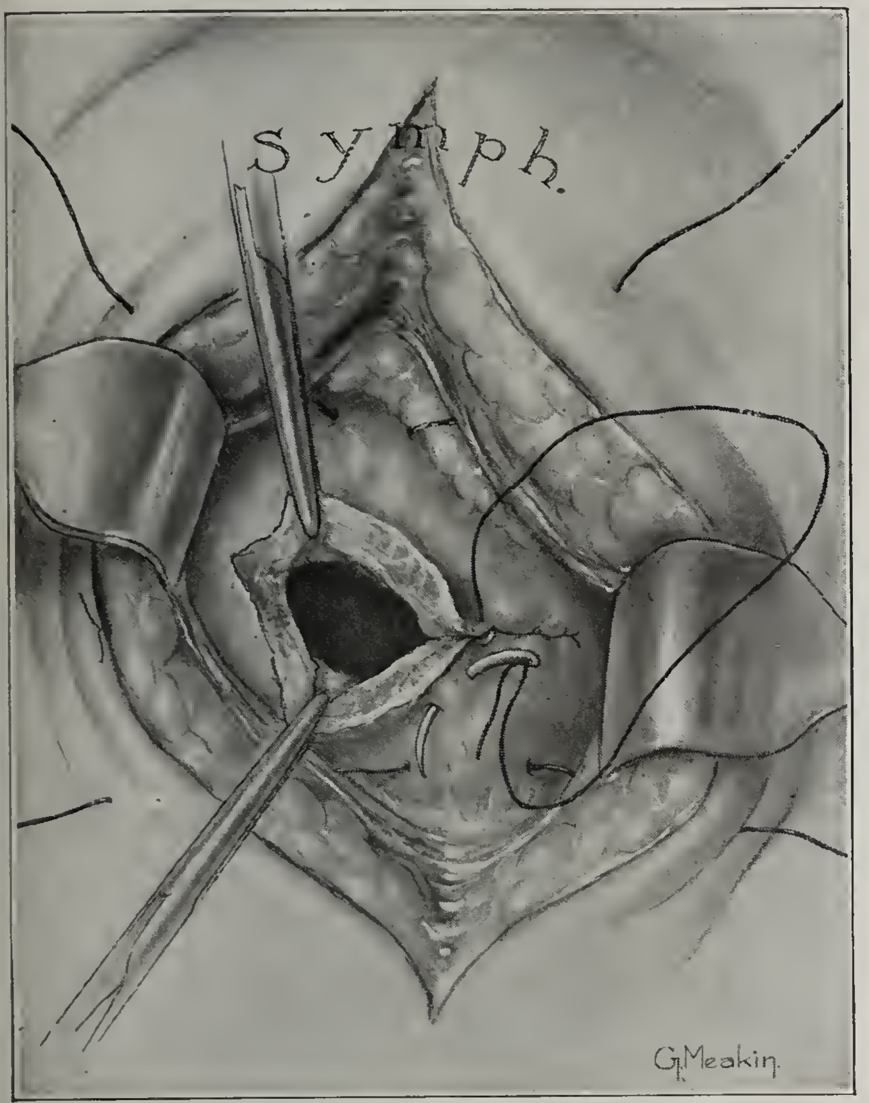

Fig. 5.—Vesical incision closed by a mattress suture.

THEORETICAL CONSIDERATION

In explanation, the following theory may be offered: It is shown that, subsequent to electrocoagulation around the necrosed area, there is created a zone of reaction, or aseptic inflammation; there is not only an invasion of highly active cells, as round cells and lymphocytes, but the fibrous tissue becomes abundantly vascularized and fibroblasts appear. It may be safely assumed that intact cancer cells existing within this zone also fall under this influence. All roentgenologists agree that the more hyperemic a structure is and the more it returns to the juvenile stage, the better is the prognosis for the curative effect of the therapeutic rays. It may be suggested that under the action of the rays these energized cells produce materials which, in turn, act systemically to reduce the excessive multiplication of malignant cells. It therefore became our routine to coagulate malignant tumors to a restricted depth only, and to leave the remainder to roentgenotherapy.

CLINICAL EXPERIENCE

Out of twenty-seven cases of malignancy treated in the manner described two patients died: A woman died three days after the operation, with the symptoms of protein poisoning, evidently due to insufficient sealing of the lymphatics, permitting rapid absorption of débris; a man succumbed to a gas-producing bacillus infection in the abdominal wound, which became evident on the fourth day after the operation.

All the other patients, the oldest one being operated on more than three years ago, do not show any relapse of malignancy at the present date.

The exposure, opening and closing of the bladder, may be done under local anesthesia; for the coagulation, general anesthesia is preferable; the short duration of this manipulation reduces materially the danger of general anesthesia.

SUMMARY

It should be mentioned that any extensive electrocoagulation is, as a rule, followed by the development of a more or less intensive edema of the vesical mucosa. If of a high degree, it may be and actually has been mistaken by the inexperienced for a relapse. Careful and repeated cystoscopic examinations will clear the issue. Roentgenotherapy in massive doses is administered forty-eight hours after the operation, thus taking advantage of the perithermic reaction. Preoperative irradiation interferes with the reconstructive potencies

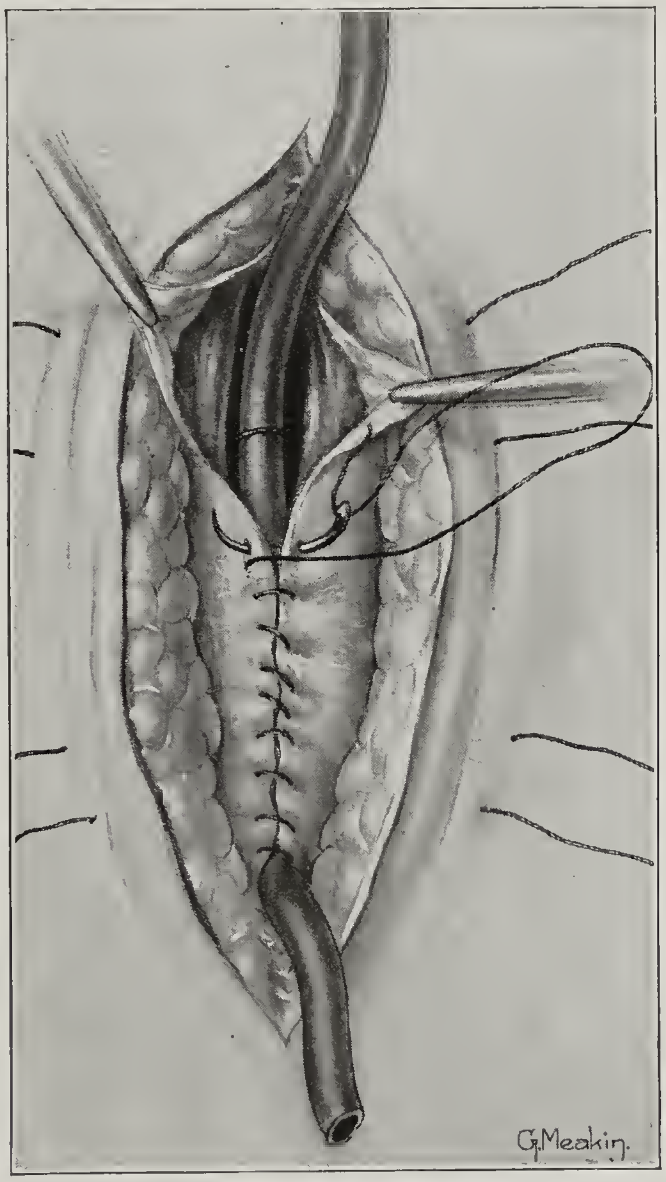

Fig. 6.—Drainage tube inserted underneath tension and suspension sutures; the fascia is closed over it.

of the tissues and prevents primary reunion. We have not seen any favorable results from the employment of radium needles, but frequently infection following their use has been observed.

The whole procedure is simple, practically bloodless, and of short duration. The primary mortality is considerably lower than that following resections or total extirpations of the bladder. The destruction of the tumor does not involve any reduction of the capacity of the bladder, which is one of the objectionable features of the cutting operation. The patient is not subjected to the dangers and misery of an abdominal drainage.

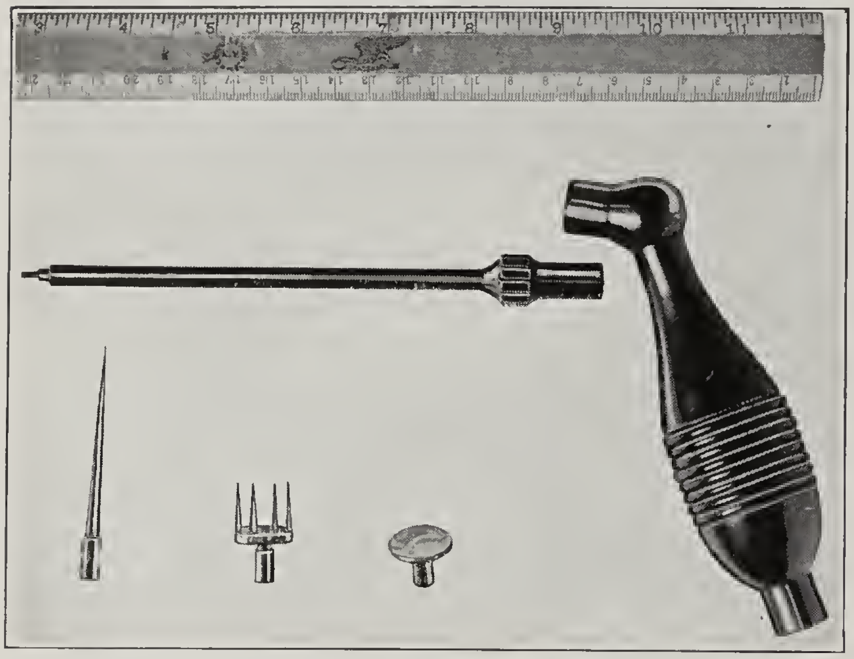

Fig. 7.—The multispiked, the monospiked and stamp shaped electrodes. The angular arrangement of the handle permits of the free manipulation within the bladder without obstruction of vision.

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AMEBIASIS OF THE BONES *

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Amebas in the lesions of Ely's [1] nonbacterial or second type of arthritis deformans were identified by us,[2] and the discovery announced coincidently with ourselves by Ely, Reed and Wyckoff.[3] Prior to this, we noted [4] the connection between infection by *Endameba dysenteriae* and bone rheumatism. Many instances of coincidence of amebiasis and a diagnosis of arthritis have come to light in the course of more than 15,000 stool examinations of more than 5,000 persons by us in the last four years. This note presents critical morphologic evidence of the identity of certain of the ameboid cells in the bone lesions of arthritis deformans of Ely's nonbacterial type with *Endameba dysenteriae* of human intestinal amebiasis.

Through the kindness of Dr. L. W. Ely of Stanford University Medical School, we have studied sections of his Case 187, which we have stained in iron hematoxylin. The material was fixed in formaldehyd, is well preserved, and retains a condition adequate, though not favorable, for cytologic examination after decalcification. We have found in this material ameboid cells which we interpret as *Endameba dysenteriae.* They occur in the head of the excised femur in the immediate neighborhood of the necrotic areas near the eburnated surface of the joint. These cells (Figs. 3-7) have vacuolated protoplasm, a few are filled with red blood corpuscles, or what appears to be their remnants, many have pseudopodia, in some instances of a hyaline ectoplasm, and all have a vesicular, spherical nucleus. This nucleus is of the type which characterizes *Endameba dysenteriae* in the cysts of the feces, and in the ulcers of intestinal amebiasis. The nucleus has a characteristically spherical shape. It is smaller (from 4 to 7 microns) than the less spherical nuclei of the surrounding human cells. Its chromatin is characteristically divided into two regions, a layer of peripheral chromatin applied uniformly, or it may be interruptedly to the inner face of the nuclear membrane, and a solid, spherical, usually centrally located karyosome. Immediately surrounding the karyosome a narrow clear halo may be found in some cases, but not in all our material. Between this karyosome and the peripheral zone is an intermediate clear zone which is usually traversed by a few more or less faintly stained spokelike radiations passing toward the karyosome from the peripheral zone. They may be obliterated by heavy destaining.

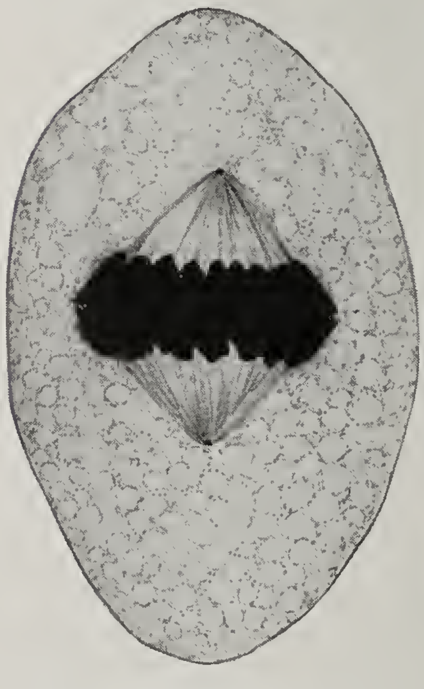

Fig. 1.—Lateral view of a small epithelioid (?) cell in the metaphase of mitosis from a hypertrophied cervical gland of man in Hodgkin's disease. Note the spindle fibers running from the centrosomes at the apexes to the massed, deeply stained chromosomes in the equatorial plate and the absence of nuclear membrane. From a section stained in iron hematoxylin; × 2,500.[5]

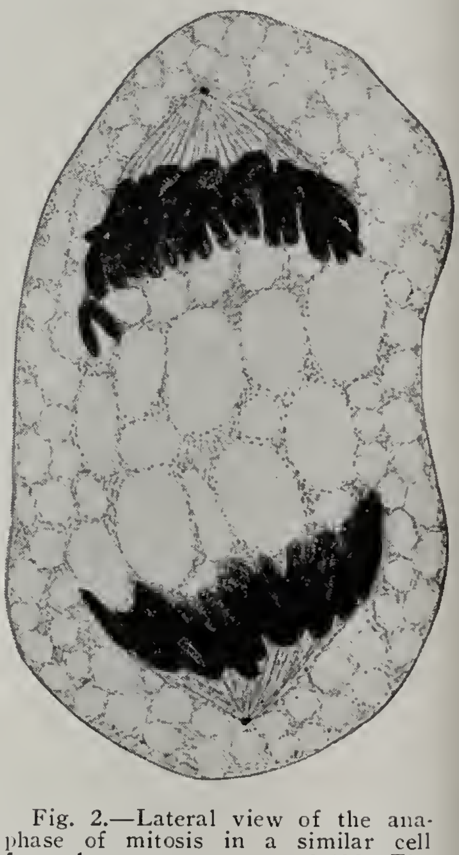

Fig. 2.—Lateral view of the anaphase of mitosis in a similar cell from the same source, × 2,500. The elongated, divided chromosomes retreat toward the poles of the spindle, and there is lateral constriction, indicating approaching separation of the two daughter cells. Only part of the chromosomes (about sixteen) of the cell have been drawn, because of the superposition of the deeply stained rods which form the chromosomes.[5]

These spokelike nuclei differ from those of the human plasma cells in their smaller size, more uniform sphericity, and in the fact that the chromatin blocks in

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* From the Zoological Laboratory, University of California, and Division of Parasitology, Bureau of Communicable Diseases, California State Board of Health.

[1] Ely, L. W.: The Second Great Type of Chronic Arthritis: A Laboratory and Clinical Study, Arch. Surg. **1:** 158-183 (July) 1920.

[2] Kofoid, C. A., and Swezy, Olive: On the Occurrence of Endamoeba Dysenteriae in the Bone Lesions in Arthritis Deformans, California State J. Med. **20:** 59, 1922.

[3] Ely, L. W.; Reed, A. C., and Wyckoff, H. A.: The Amoeba as the Cause of the Second Great Type of Chronic Arthritis, California State J. Med. **20:** 59, 1922.

[4] Kofoid, C. A.: Hookworm and Amoebiasis in California, California State J. Med. **18:** 329-332 (Sept.) 1920.

[5] We are indebted to Dr. Doxey Wilson and Dr. Eastman of San Jose for the material from which these sections were made.

the plasma cells are larger, and less confined to the immediate periphery. It would be possible to mistake human cells with vesicular nuclei, especially in case of plasma cells and eosinophils, for amebas if one were limited in his criteria to the morphology of the resting nucleus. Fortunately, this limitation does not exist.

It is known that among animals the number of somatic chromosomes which appear in cell division is constant in normal somatic cells, and is characteristic of all individuals of the species. There are, however, instances in which the somatic or diploid equipment of chromosomes is replaced in certain individuals by double the customary number, giving rise to the tetraploid condition. There are also instances in which the diploid number in the male is one less than in the female of the species. The chromosome number, with these occasional modifications, is, however, a species characteristic, though different species may have the same diploid number. In addition to the criterion of chromosome number, there exists among nuclei another diagnostic feature of nuclear structure and behavior, namely, the type of mitosis or cell division. Within the Metazoa, or animal types above the Protozoa, there prevails a fairly uniform type of somatic mitosis. This (Figs. 1 and 2) is characterized (1) by the disappearance of the nuclear membrane during mitosis and (2) by the formation between the daughter centrosomes at the poles of the spindle of a type of connection known as the central spindle, or centrodesmose. This is an axial bundle of linin fibers which constitutes the only connection, if any exists or can be detected, between the daughter centrosomes. It is surrounded by the mantle fibers which run to the chromosomes in the equatorial plate.

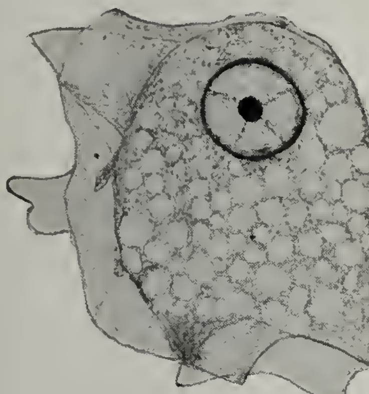

Fig. 3.—Endameba dysenteriae from lesions in bone marrow in the head of the femur in Ely's Case 187 of the second, nonbacillary type of arthritis. The spherical vesicular nucleus with peripheral chromatin, central karyosome, and spoke radiations may be noted.

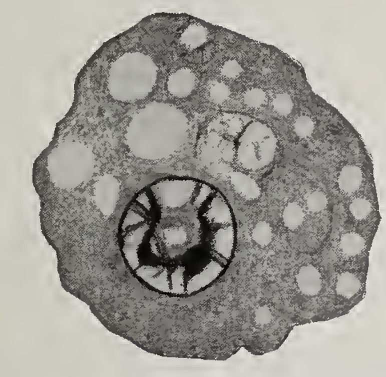

Fig. 4.—Same with nucleus in prophase with peripheral chromatin in strands (chromosome?), some of them split.

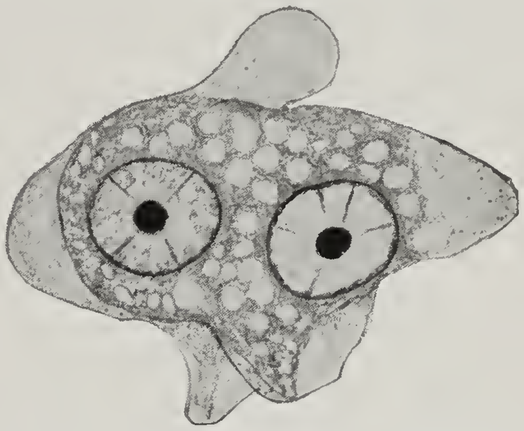

Fig. 5.—Binucleate ameba resulting from mitosis. Halo around central karyosome.

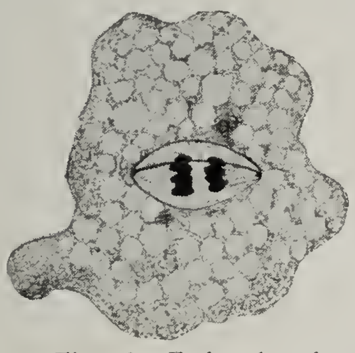

Fig. 6.—Endameba dysenteriae in early anaphase. The small number of chromosomes, probably six, the intact nuclear membrane and the intradesmose joining the centrosomes at the poles may be noted.

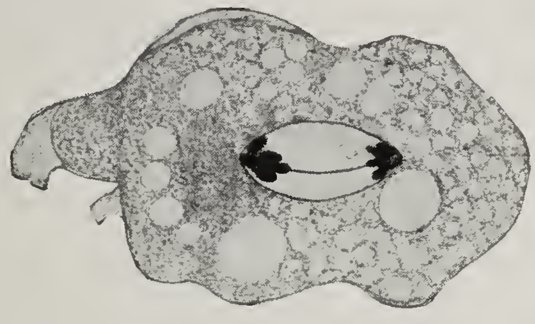

Fig. 7.—Late anaphase with distinct intradesmose. The magnification in all the illustrations is 2,500 diameters.

Among the Protozoa, on the other hand, there exist several types of mitoses. One of these is prevalent among the Rhizopoda, the order to which the amebas belong. This type (Figs. 6 and 7) is characterized by (1) the persistence of the nuclear membrane during mitosis and (2) the formation of an intradesmose, a single, usually meridional strand, which stains rather deeply and is often applied to the inner face of the nuclear membrane. It joins the two daughter centrosomes at the poles of the spindle. These two types are so distinct in structure, and the latter is so restricted to the Rhizopoda, that they afford a morphologic diagnostic basis of critical and decisive value in evaluating the relationships of ameboid cells. One does not expect to find the rhizopod type of mitosis in human cells. Ameboid cells in human lesions with the rhizopod type of mitosis we may with confidence diagnose as amebas.

We have, accordingly, assiduously searched the sections of the excised femur from Ely's Case 187, with the result that in the territory in which the cells interpreted as amebas are found, we have discovered several binucleate amebas (Fig. 5), one with both nuclei in the early prophase of the next division. These indicate that binary fission of the amebas is in progress in the lesion. We have also found amebas with the usual single nucleus in the early prophase of division (Fig. 4), in the early (Fig. 6) and late (Fig. 7) anaphase and several telophases. A detailed study of these under the best optical conditions with the monobjective binocular microscope and high magnification has enabled us to analyze the type of mitosis and determine, within narrow limits, the number of chromosomes.

For purposes of comparison, we reproduce here drawings of two human endothelioid cells from a case of Hodgkin's disease (Figs. 1 and 2). These show a metaphase (Fig. 1) with the numerous chromosomes massed in an equatorial plate, and an anaphase (Fig. 2) with the divided chromosomes moving apart and the beginning of the constriction of the cytoplasm which will part the two daughter cells. The mode of division is the metazoan type in which the nuclear membrane has disappeared and there is no intradesmose, the centrodesmose presumably being in the axis of the spindle. Furthermore, the chromosomes are large, and their number is considerable.

When the dividing cells in the lesions of the bone which we interpret as amebas are compared with these dividing human cells, the differences are at once apparent. The nuclei of the amebas retain the intact nuclear membrane, within which in the anaphase (Fig. 6) the meridional intradesmose, a black line joining the two poles of the elongating nucleus in the illustration, is applied to the inner surface of the nuclear membrane. Both of these features characterize this nucleus as one of the rhizopod type.

We have found [2] this type of division in *Councilmania lafleuri,* an ameba of the human digestive tract, in which the number of chromosomes is eight, and in *Endameba coli,*[6] in which the number of chromosomes is six. The same type is also found in *Endameba dysenteriae* in cysts in the feces (illustrated in Figures 1-3 in the following article). A report on mitosis in this will shortly be published. The type of mitosis is essentially similar in all three amebas, and as found in the amebas in the bone lesions is identical with that in the amebas of intestinal amebiasis in man.

There is an additional criterion of greatest critical value in the number of chromosomes revealed in the nucleus by the process of mitosis. The number of somatic chromosomes in man has been variously stated. It appears to be either twenty-four or forty-eight, possibly both in different individuals, the former being the diploid and the latter the tetraploid number. Owing to the crowding of the chromosomes in the human cells seen by us in the endothelioid cells in mitosis in Hodgkin's disease (Figs. 1 and 2), we are unable to count them. An estimate of this number in one quadrant is indicative of twenty-four rather than forty-eight. In any event, it is very much greater than in the cells we interpret as amebas. The number of chromosomes in these dividing amebas in the bone marrow is probably six, certainly not less than five or more than seven. In addition to the difference in number, the chromosomes of the dividing human cells are larger and proportionately longer.

On the basis of the type of mitosis and of the number of chromosomes in the cell, the ameboid organisms in the bone marrow are amebas rather than ameboid human cells. They appear in all respects to be normal amebas, and the mitosis to be normal in type. We find no structural evidences connecting them with any form of degenerating human cells in the lesions which we have examined. The inference to be made from this evidence is that the ameba may be the etiologic factor in Ely's second or nonbacterial type of arthritis deformans, and that this disease would then be amebiasis of the bone.

The question arises as to whether the ameba of the bone is that of the bowel (*Endameba dysenteriae*) or of the teeth and tonsils (*E. gingivalis*). The latter has a nucleus quite similar to that of the former, but appears to lack the radial spoke feature of the nucleus. The degree of decolorization of the stain has much to do with the appearance of the spokes in *E. dysenteriae.* The nucleus of the amebas of the bone lesions very often presents the spoke pattern. So far as this is critical morphologic evidence, we incline to the view that the ameba of the bone is *E. dysenteriae* rather than *E. gingivalis.* Coexistence of infection by *E. dysenteriae* and chronic arthritis has been high in our experience, but more data with accurate diagnosis of the type of arthritis are needed before any more than a purely tentative conclusion can be reached on this point.

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[6] Swezy, Olive: On Mitosis in Endamoeba Coli, Univ. California Pub. Zool., to be published.

Reminiscences.—It is reported that the number of convictions for drunkenness in London for the past nine years are: 1913, 64,783; 1914, 67,117; 1915, 51,372; 1916, 29,095; 1917, 16,567; 1918, 9,901; 1919, 20,674; 1920, 29,956, and 1921, 27,410.

OCCURRENCE OF ENDAMEBA DYSENTERIAE IN THE LESIONS OF HODGKIN'S DISEASE *

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and
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In November, 1921, a patient (H. M. S.) with Hodgkin's disease came for treatment to Dr. Boyers. His previous experience with amebiasis in the Infirmary of the University of California and knowledge of the unknown etiology of the first named disease led him to submit stools from the patient to the collaborators in this investigation for examination. This patient, and a subsequent one (A. J. P.) secured by Dr. Boyers, revealed the coexistence of amebiasis and Hodgkin's disease. Specimens of the organs of Lincoln's case (1908) were later secured; and these, with a section from the cervical gland in Boyers' case forwarded by Dr. Major of Melbourne, Australia, have been examined by us. We also acknowledge material from cases diagnosed as Hodgkin's disease and supplied to us by Dr. Ophüls of Stanford University Medical School, San Francisco; from a case at San Jose, Calif., forwarded by Dr. Finley M. Eastman; from a case at Columbus, Ohio, forwarded by Dr. G. F. Lambright of Cleveland, and an inguinal gland and stool from a case at Helena, Montana, forwarded by Dr. L. A. Walker. This stool contained degenerate cysts of an intestinal ameba, among which one typical four-nucleate cyst of *Endameba dysenteriae* was detected.

Examination of sections of glands from these various cases has revealed certain ameboid cells with vesicular nuclei, of smaller size than most of the human nuclei and resembling closely the nucleus of *Endameba dysenteriae* in the active and encysted stage in the bowel.

Prior to the examination of the section from the inguinal gland of Walker's patient, we were unable to find critical evidence that these cells were parasitic amebas rather than human ameboid wandering cells of the connective tissue or a phase of some leukocyte. We therefore reported in our first note [1] merely the coexistence of amebiasis and Hodgkin's disease, and our detection in the lesions of certain ameboid cells resembling those found by Kofoid and Swezy [2] in the bone marrow in Ely's second type of arthritis.

The discovery of mitosis in the amebas in bone marrow in lesions of arthritis deformans, Type 2, described by Kofoid and Swezy in the preceding article, encouraged us to continue the search for amebas in the process of nuclear division in the lesions in the lymph glands of Hodgkin's disease, especially since the cells interpreted as parasitic amebas, but not in mitosis, in the bone marrow very closely resembled those under suspicion as parasites in the lymph glands. Prolonged and assiduous search revealed only cells suspiciously like amebas, sometimes staining atypically, and possibly degenerating. Our available material was from mod-

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* From the Zoological Laboratory, University of California, and the Division of Parasitology, Bureau of Communicable Diseases, California State Board of Health.

[1] Kofoid, C. A.; Swezy, Olive, and Boyers, L. M.: The Coexistence of Hodgkin's Disease and Amebiasis, J. A. M. A. **78:** 532 (Feb. 18) 1922.

[2] Kofoid, C. A., and Swezy, Olive: On the Occurrence of Endamoeba Dysenteriae in the Bone Lesions in Arthritis Deformans, California State J. M. **20:** 59, 1922.

erately to well advanced stages of the disease. It seemed desirable to get glands in early stages of hypertrophy. It was not, however, until the material from the inguinal gland of Walker's patient, in what appears to be an early phase of invasion of the gland, was available, that we were able to find amebas in mitosis. Since our criteria come from this case, the clinical history of the case, necropsy report, and a brief statement of the pathologic findings in the excised gland are given. A summary of the history, laboratory findings, and necropsy surgeon's report has fortunately reached us by wire in time to be incorporated in this article.

The family and previous personal history were negative. The present illness began in February, 1919, with a swelling in the right cervical region. This remained the same size for two or three months. In the next few months the left cervical region became involved, and both cervical areas of swelling increased in size. They remained at this stage until July, 1921, when they increased greatly in size for one month, and then receded somewhat. In July, 1921, the axillary glands also became involved. By September, 1921, there was much hypertrophy, and a sinus was present in the right axilla. In October, 1921, an inguinal gland became involved, and in that month mediastinal involvement was demonstrated by observation and also by roentgen-ray examination.

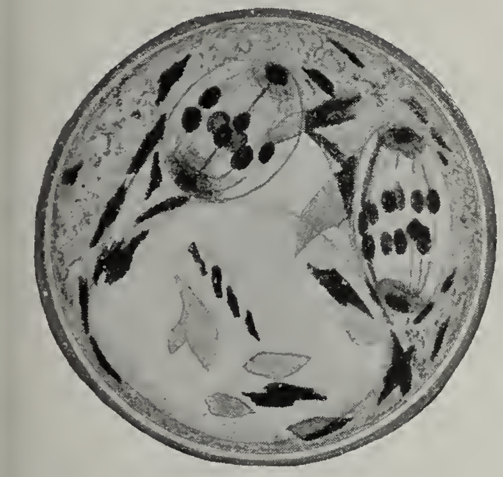

Fig. 1.—Binucleate cyst of Endameba coli from human stool showing empty glycogen vacuole, splinter-like chromatoidal bodies, and two nuclei in metaphase and early anaphase with six chromosomes (twelve in the anaphase), polar centrosomes connected by the intradesmose.

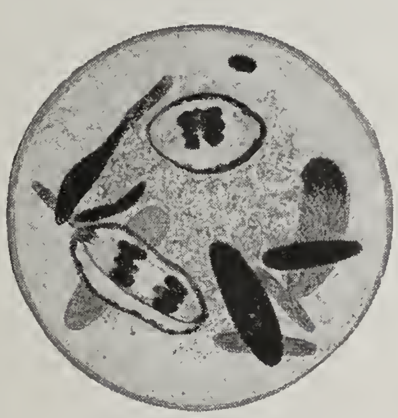

Fig. 2.—Binucleate cyst of Endameba dysenteriae from human stool with rodlike chromatoidal bodies, two nuclei in early anaphase, with small number of chromosomes (from five to seven), probably six.

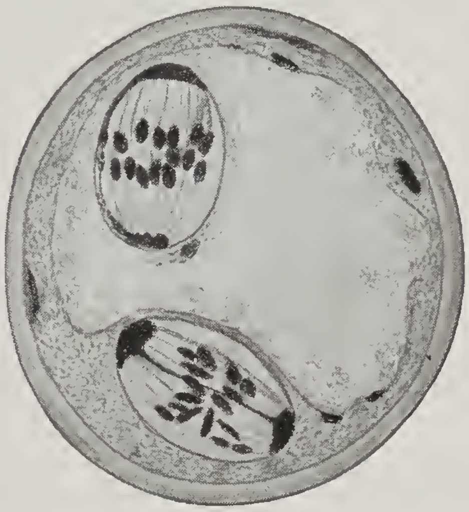

Fig. 3.—Binucleate cyst of Councilmania lafleuri from human stool with empty glycogen vacuole; chiplike chromatoidal bodies, two nuclei in early anaphase, with the eight chromosomes divided to sixteen, and intradesmose in lateral and median locations. All magnifications, 2,500 diameters.

Blood examination in October, 1921, revealed: hemoglobin, 90 per cent.; leukocytes, 15,600; neutrophils, 82 per cent.; eosinophils, 1.5 per cent. In December, 1921, the hemoglobin estimation was 66 per cent.; the leukocyte count, 13,000, and the neutrophils, 78 per cent. The urinary findings were normal. The blood Wassermann reaction was negative. In January, 1922, and in March, 1922, localized pneumonia and lung abscess developed. The patient died, April 8, 1922.

At necropsy there was marked emaciation. There was involvement of the superficial glands, and the mediastinal and superficial glands were adherent to the sternum, as was also a hard, tumor-like formation. The lungs were entirely adherent. In the right lung there was a large cavity, containing pus. The right upper lobe was necrosed in part, and the right lower lobe showed thickened areas, friable in character, and exuding pus. The upper left lobe resembled the right. The posterior mediastinal glands were markedly enlarged, the pericardium thickened, and the heart adherent. In the abdomen there was a small amount of fluid. The mesenteric glands were uniformly hypertrophied. The spleen weighed 550 gm., was dark red, firm, and cut with a gritty sensation. It contained several whitish areas.

The liver had several small, glandlike structures adhering to its capsule. It gave a gritty sensation on being incised, and showed several small necrotic areas.

The sections from the inguinal lymph gland are roughly 5 by 25 mm. and 8 by 25 mm., and were stained with iron hematoxylin. Grossly, the tissue appears to be heterogeneous in structure, showing deeply staining islands that are separated and surrounded by strands of connective tissue. These strands vary in different portions from delicate reticular tissue to frank bands of scar tissue. The capsule of the gland is thickened.

Microscopically, the follicular structure has been largely lost and the lymph spaces are filled in, in part. The darkly staining islands are composed of cellular elements of great diversity in character, comprising very occasional multinuclear giant cells with syncytial cytoplasm, the type of the foreign-body giant cell, large numbers of small lymphocytes and endothelioid cells, and small numbers of large lymphocytes, plasma cells, polymorphonuclear leukocytes and eosinophils. The sections are rich in mitotic figures.

The cells which we interpret as *Endameba dysenteriae* have been found at times nested by connective tissue, then again often in the most cellular portions of the section. Several have been located adjacent to blood vessels.

The section came to us diagnosed as Hodgkin's disease. In checking up on the diagnosis, two sections were submitted to Dr. G. Y. Rusk of the University of California Medical School and were diagnosed as showing a "chronic inflammatory process."

At the same time two sections were submitted to Drs. William Ophüls and Jean Oliver of the Stanford University Medical School, and were diagnosed as Hodgkin's disease.

The basis on which one may diagnose the presence of parasitic *Endameba dysenteriae* in the lesions of Hodgkin's disease by morphologic standards are restricted to the structure of the cytoplasm and nucleus. A trustworthy differential stain is unknown. The ameboid form of the cytoplasm is unsatisfactory and uncritical, since the structure of the wandering ameboid connective tissue cells, of the endothelioid cells, and of the plasma cells verges on the ameboid type. The nucleus is somewhat more distinctive, since that of *Endameba dysenteriae* is characterized by a spherical form, peripheral chromatin applied as a more or less interrupted layer on the inner face of the nuclear membrane, and a solid, spherical, central karyosome. Between the central karyosome and the peripheral chromatin is an intermediate zone free from any considerable amount of chromatin. The human cells, on the other hand, have larger nuclei in most cases, their shape is less frequently spherical, and their chromatin is broken up into rather coarser granules, not restricted to the membrane, but more or less distributed throughout the nucleus. A central karyosome is generally lacking, though many of the endothelioid and plasma cells exhibit a chromatin granule which is sometimes central in location. Likewise the eosinophil cells often have several small spherical nuclei from 2.5 to 3 microns in diameter, with a central karyosome and chromatin-laden nuclear membrane. These cells are clearly not amebas; but the presence of nuclei approximating those of amebas in them tends to make one hesitate to call any cell in these hypertrophied tissues an ameba on the basis of nuclear structure in the resting stage, since we do not know how far pathologic modifications of tissue elements might induce a similarity on the part of human nuclei to those of amebas.

While we can only surmise that the cells we have just described are probably amebas because of their structural resemblances, we have available a diagnostic feature of the highest critical value which enables us to determine with a high degree of certainty the status of certain ameboid cells as true parasitic amebas, and presumably *Endameba dysenteriae.* This criterion is the structure of the nucleus at mitosis.

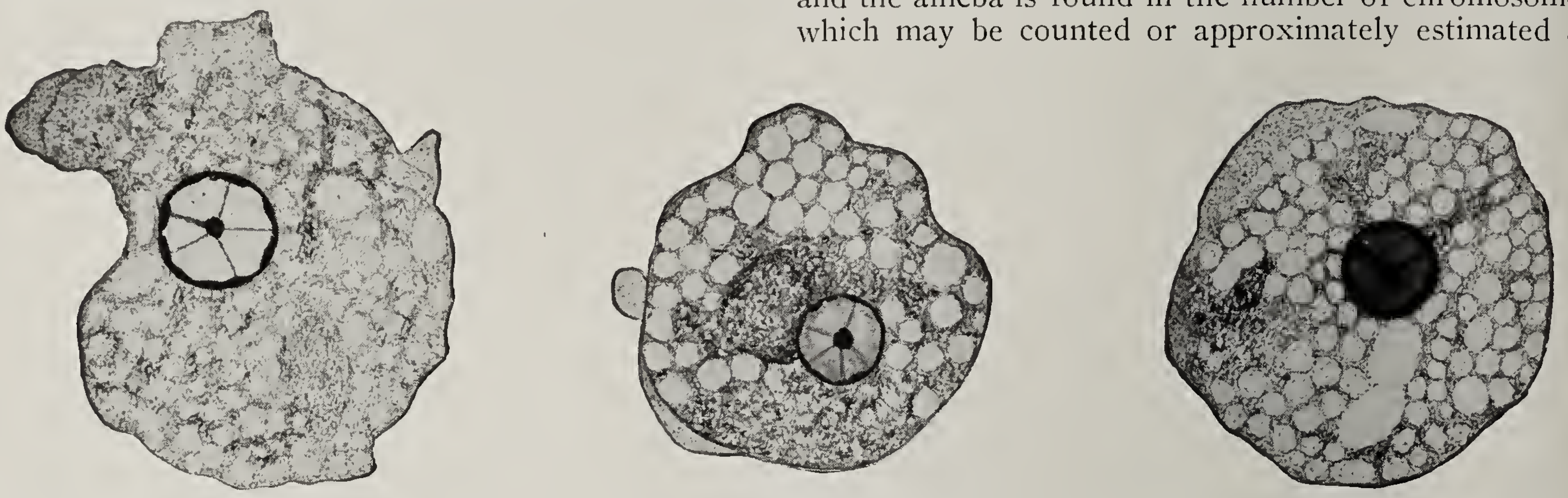
Figure 4 Figure 5 Figure 6

Figs. 4, 5 and 6.—Endameba dysenteriae in the active state with pseudopodia, spherical, vesicular nucleus with peripheral chromatin, central karyosome and spoke radiations; × 2,500.

Fortunately we (Kofoid and Swezy) have in hand investigations of the mitotic process in three of the common amebas of man, as yet largely unpublished. We have been able to determine the behavior of the chromatin, nuclear membrane, and centrosome during mitosis in the cysts of *Endameba coli,* of *E. dysenteriae,* and of a new ameba of man, *Councilmania lafleuri.*[3] We have also found that the number of chromosomes in *E. coli* is six and in *C. lafleuri* is eight. The number of these structures in *E. dysenteriae* is as yet not certainly known to us, but we have sufficient data to indicate definitely that its number is small, and probably not more than six.

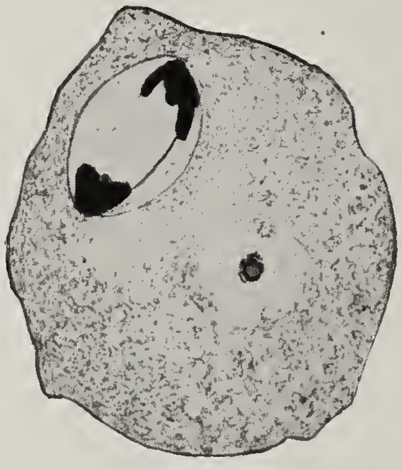
Fig. 7.—An ameba with nucleus in the telophase of cell division, with intact nuclear membrane, and a few (probably not more than six) chromosomes at either pole. The intradesmose is the black line connecting the two masses of chromosomes. It presumably connects the centrosomes at the apexes of the nucleus; × 2,500. All drawings from amebas in sections of inguinal glands from a patient with Hodgkin's disease, stained in iron hematoxylin. We are indebted to Dr. L. A. Walker, Helena, Mont., for this gland.

In Figures 1, 2 and 3, we portray cysts of *E. coli, E. dysenteriae* and *Councilmania lafleuri,* with nuclei in mitosis. Certain structural features of the mitotic process are common to the three. These are also to be found in mitosis of certain free-living amebas of the soil and of water, and are to be regarded as rather fundamentally characteristic of rhizopod, or at least of amebic mitosis. These features are (1) the persistence of the nuclear membrane as an intact envelop throughout mitosis, and (2) the presence within the nucleus in a meridional position of a deeply staining thread, the intradesmose, applied to the inner surface of the nuclear membrane and joining the two very large stained masses, containing the daughter centrosomes at the poles of the dividing nucleus. Neither of these features is present in dividing human cells. In them the nuclear membrane entirely disappears during cell division, and the small centrosomes at the poles of the spindle are joined by an axial bundle of linin spindle fibers, the centrodesmose. There is no possibility of confusing cells having these two widely divergent types of mitosis.

A third marked difference between the human cell and the ameba is found in the number of chromosomes which may be counted or approximately estimated at the metaphase of the mitosis, and sometimes during the prophase, when the chromatin material is arranged in a definite number of chromosomes.

The diploid or somatic number of chromosomes in man has been variously determined. Guyer[4] reports twenty-two, Montgomery[5] and Wieman[6] find twenty-four, while von Winiwarter[7] reports forty-seven in man, and Evans,[8] forty-eight. It is possible that sex differences exist in human chromosome numbers, and that the number in man is forty-seven or twenty-three, and in woman, forty-eight or twenty-four. It is also possible that both forty-eight and twenty-four are correctly determined. Similar instances of two chromosome numbers within the single species have been brought to light elsewhere by cytologists, the one (diploid) twice the other (tetraploid). If this holds true in man, forty-eight is the tetraploid state. In any event, the number of chromosomes in the human cell (twenty-four or forty-eight) is much greater than that in the ameba. It is three or four, or it may be six or eight times as great as the numbers thus far determined in human amebas (six or eight). There is therefore little conceivable possibility of confusing a human cell with an ameba or vice versa at mitosis if the number of chromosomes can be counted or even approximately estimated.

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[3] Kofoid, C. A., and Swezy, Olive: On the Free, Encysted and Budding Stages of Councilmania Lafleuri, a Parasitic Amoeba of the Human Intestine, Univ. California Pub. Zool. **20**: 169-198, 1921.

[4] Guyer, M. F.: Accessory Chromosomes in Man, Biol. Bull. **19**: 219-234, 1910; Science **39**: 721-722, 941-942, 1914.

[5] Montgomery, T. H.: Human Spermatogenesis, Spermatocytes and Spermiogenesis: A Study of Inheritance, J. Acad. Nat. Sc. Philadelphia **15**: 1-22, 1912.

[6] Wieman, H. L.: The Chromosomes of Human Spermatocytes, Am. J. Anat. **21**: 1-22, 1917.

[7] Von Winiwarter, H.: Etudes sur la spermatogenese humaine, I, Cellule de Sertoli; II, Heterochromosome et mitoses de l'epithelium seminal, Arch. d. Biol. **27**: 91-189, 1912.

[8] Evans, H. M.: Unpublished work cited by Babcock, E. B., and Clausen, R. E.: Genetics in Relation to Agriculture, New York, McGraw-Hill Book Company, 1918, p. 538; Unpublished work cited by Sharp, L. W.: An Introduction to Cytology, New York, McGraw-Hill Book Company, 1921, p. 362.

After prolonged search of carefully stained sections of lymph glands from several cases of Hodgkin's disease with the high power binocular monobjective microscope, we have succeeded in finding a number of human cells in division (Figs. 1 and 2 of the previous article) and several cases of mitosis in the type of cell (Figs. 4-7) interpreted by us as a probable ameba. The chromosomes of the human cell are large, measuring, in the anaphase in the cells illustrated (Figs. 1 and 2 of the previous article), from 3 to 5 microns in length, and from five to seven times as long as wide. It was not possible in these cells to count the number of chromosomes with certainty. There are certainly not less than twenty-four in each of the parting equatorial plates of divided chromosomes (Fig. 2) destined for each daughter cell.

It is also evident that these human cells are devoid of a nuclear membrane at mitosis, and have no trace of an intradesmose joining the centrosomes. The cones of spindle fibers are very prominent, terminating in the polar centrosomes.

When one compares these cells with the dividing ameba (Fig. 7), the contrast is striking. The nucleus is smaller in the ameba, its nuclear membrane is intact, there is an intradesmose joining the centrosomes, and the total chromatin material which lies within the nuclear membrane is very much less in amount than in the human cells.

The numerical contrast in the number of chromosomes between the human cells and the amebas is apparent and striking. Their exact number is difficult to count with certainty on account of their minuteness. It is probably six, and certainly not more than seven or eight. Their size, moreover, is only from 1 to 1.5 microns in length, and they are proportionately shorter and stouter than are the human chromosomes.

It will be difficult to find morphologic evidence of more critical nature than that of the types of mitosis, and the chromosome numbers here presented for the distinctions between human cells and supposed parasitic amebas. In our opinion, the evidence here presented is conclusive on morphologic lines. It suggests the desirability of further investigation along experimental and therapeutic lines to establish the conclusion that Hodgkin's disease is amebiasis of the lymphatic system.

In the event of search by clinicians for cysts in the stools in cases of Hodgkin's disease, it is very important to continue the search, in the event of negative results, in stools for six consecutive days, or even much longer, and to search stained smears systematically. In our experience, cysts, especially of the smaller race, from 7 to 9 microns in diameter, or sometimes smaller, are brought to light sometimes by assiduous and repeated stool examinations. The detection of the amebas in the glands has been made when the hypertrophy was as yet slight, and also requires assiduous and systematic search.

THE DIAGNOSIS, PROGNOSIS AND EARLY TREATMENT OF POLIOMYELITIS *

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BOSTON

The diagnosis and early treatment of poliomyelitis is of great importance to the profession in general, because with the general practitioner rest many factors which influence the ultimate function and usefulness of the patient. The conclusions which will be presented are based on a study of 5,100 cases of poliomyelitis for the care of which the writer has been responsible since 1916. Of these, 1,836 were in New York State, 2,159 in Massachusetts, 610 in Vermont, and 500 in private practice.

DIAGNOSIS

Diagnosis belongs primarily to the neurologist, the pediatrician and the medical practitioner, rather than to the surgeon; but so many cases seen by the surgeon in the later stages require a review of the whole question of early history and diagnosis that he too must be familiar with the early conditions.

It is common knowledge that many cases of poliomyelitis are overlooked in the early stages, being incorrectly diagnosed as all sorts of febrile affections, and the diagnosis cleared up only after the paralysis develops. This should happen much less often than it does, and the physician is wise who, in late summer, is suspicious of every ailing child, especially those near an epidemic center.

Laboratory diagnosis can be made in the early stages by spinal tapping. The fluid in the acute stage of the disease is clear and colorless, and does not show great increase of pressure. In the first week there is an increase in the cells, due to mononuclear cells of various types, of which the lymphocytic is the most common. The cells may increase to as many as from 1,000 to 2,000 per cubic millimeter. The globulin reaction, weak at first, increases to its maximum in the third week. The only difficulty in the laboratory diagnosis is between poliomyelitis and tuberculous meningitis, in both of which the characteristics of the spinal fluid are much alike, errors being occasionally made even by experts. Facilities, however, for making a laboratory diagnosis promptly are not always at hand, and one comes to rely in the main on making the diagnosis from clinical symptoms.

This diagnosis cannot be made from the history, and many errors have been made because too much reliance was placed on the history. It must be remembered that typical cases may occasionally occur without any manifestations whatever of systemic disturbance in the way of fever, malaise or respiratory or digestive disturbance. The disease at times follows other illnesses. I have seen a number of cases in which poliomyelitis followed typhoid fever, trauma, confinement, chill and infectious diseases, and in four instances it occurred after fracture of the arm, while the arm was in a splint, and consequently the paralysis not recognized until the splint was removed. It must be remembered, however, that trauma can no more cause poliomyelitis than it can cause scarlet fever. Poliomyelitis may also occur in cases in which the patients have previously had cere-

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* Read before the Birmingham Clinical Club, Birmingham, Ala., Feb. 20, 1922.

bral spastic paralysis, while still other cases have been seen in which the most extraordinary combinations existed, such as an obstetric paralysis existing in the arm, and a poliomyelitis in the leg. In these combinations it becomes an exceedingly difficult matter to disentangle the symptoms, and in such cases the history is again often valueless.

The history of the onset, in general, is that of a febrile attack, sometimes of great violence, sometimes very mild, at times having its chief manifestation in the respiratory tract, and at other times in the gastro-intestinal canal, during which attack, or shortly after, it is found that motion has been lost in one or more limbs.

A moderate or high fever occurring suddenly, without known cause and accompanied by symptoms in the gastro-intestinal or respiratory tracts, is suspicious, particularly between June and November. The most suspicious symptom of all is stiffness at the back of the neck in attempts to flex the head; but there is nothing really characteristic about the attack. Tenderness of the parts to be affected occurs early, and may be excessive. The attack is occasionally preceded by queer sensations in the parts to be affected, such as prickling or numbness. Paralysis, as a rule, occurs in from one or two hours up to three or four days of the beginning of the attack, and takes the form of a motor paralysis of erratic distribution, but most often roughly symmetrical. It affects the lower extremities more often than the upper and is in practically all cases accompanied by marked tenderness, sensitiveness, and even pain in the affected parts.

One cannot speak too emphatically of the danger of overlooking the real character of the disease in its early stages because this error is frequently made, and is one which the family find very difficult to understand or excuse. Of the incorrect diagnoses, rheumatism, typhoid fever, cerebrospinal meningitis, cerebral hemorrhage and febricula are the most common. It is impossible to speak too often of the tenderness, which, until recently, has not in general been rated as an important symptom, but which should at once arouse suspicion.

After the first days the diagnosis is, as a rule, only too obvious to those familiar with the fundamentals of the affection, but even here many diagnoses are missed. Although the problem at times may be exceedingly complex, taxing the skill of the most experienced man, as a rule it is perfectly simple if the pathology of the affection is kept in mind. The initial change occurs around the blood vessels of the spinal cord, where a marked infiltration takes place, shutting off their supply of blood. Anemia or necrosis of the anterior horn cells may result. In addition, there are always punctate hemorrhages and some edema, but, practically the whole effects of the condition are localized in the motor cells of the anterior horns of the spinal cord. The result of this, it is easy to see, must be a loss of power in the muscles supplied by the cells in question. The distribution will not be along regular nerve trunks because the damage occurs higher up, above the point at which the nerve trunks form. That is to say, the paralysis is not limited to muscles supplied by one nerve trunk, such as the ulnar or peroneal nerve, but is scattered over the muscles supplied by several nerves. Partial paralysis is more frequent than total if one takes into account all the muscles of the limb. There is no loss of sensation because the cells in the posterior horns are not involved in the process and reflexes are lowered in the parts involved.

The resulting symptoms, therefore, will necessarily be (1) a scattered, irregular, widely spread loss of motor power on one or both sides; (2) no diminution of sensation in affected parts, and (3) diminution or loss of reflexes in the parts affected.

If the physician who is called in a doubtful case will only bear these factors in mind, he will be saved embarrassment. There is no other widely distributed lesion which picks out motion alone and leaves sensation untouched, along with a loss of reflexes. In young children the diagnosis is especially difficult to make, particularly in slight cases, since it is hard to get any cooperation from the patient, and the test for loss of sensation is inaccurate.

When it comes to recognizing the disease in the presence of other affections, as one may have to do, the problem may be exceedingly difficult. Again, attention is called to the error of laying too much stress on the history, and too little on the objective signs. If the physician will merely go back to his medical school training and recall what a lesion of the anterior horn cells can do and what it cannot do, the diagnosis will be much simplified. The absence of an acute attack is of no importance whatever if the characteristic signs are present. Our sheet anchor is the fact that only a lesion of the anterior horn cells produces the especial symptom group mentioned above. This is the cardinal feature in the diagnosis.

PROGNOSIS

A word may be said about the early prognosis, but the physician will be wise if in the early stages he talks as little as possible. In general, a violent, severe attack is more likely to be followed by a moderate or severe paralysis than is a light attack. The increase of the paralysis for several days after its onset is a bad prognostic symptom. The long continued persistence of the tenderness is, on the whole, a characteristic of the severer cases, and the average duration of the tenderness is about six weeks. A rapid disappearance of tenderness is favorable.

Apparently, about 25 per cent. of patients affected in the average epidemic completely recover. All patients who live through the acute attack improve, and the involvement of all the extremities in the initial paralysis does not necessarily mean that complete recovery may not take place. Death, when it occurs, is almost always due to respiratory paralysis, and the prognosis as to life is less hopeful in adults than in children, and for this reason paralysis of the upper half of the body has a much more unfavorable prognosis as to life than paralysis of the lower half. Paralysis of the bladder frequently occurs, especially when the zone of the paralysis is a girdle-shaped one in the region of the pelvis. In my experience, this has always been recovered from, and it is not necessarily an index of a bad case. Apart from these few landmarks there is really nothing to guide one as to what the ultimate outcome will be; yet this question is asked with great frequency from the day that the diagnosis is made. Parents of every patient who lives through the acute attack may be assured that improvement will begin as soon as the tenderness disappears; but how far that improvement will go, no one can say. It may progress to complete recovery, but it is more likely to go only part way toward it.

Any patient with average intelligence, no matter how severely paralyzed, whose arms are good enough to hold a pair of crutches, and whose deformities, if present, have been removed by operation or other means, can be made to walk and to engage in the active pursuits of life. The only really hopeless cases are those in which there is permanent paralysis of both arms and both legs. In a fairly extended experience, I have never seen more than two or three patients who could not be made to walk in some manner.

TREATMENT

Of all the progress that has been made in the treatment of poliomyelitis, nowhere have the methods made such advance as in the treatment of the early stages, and this advance has consisted largely in stopping the former meddlesome therapeutics, and in realizing that a hemorrhagic myelitis has occurred in the spinal cord, that the damage is done almost at once, and that the future outcome will depend on two things, and two things alone: (1) the extent and location of the damage, and (2) the judicious treatment of the patient, particularly in the early stages.

We have learned that drugs are of no value. Hexamethylenamin has been shown experimentally to retard or avert the infection of monkeys who have received it prior to infection, but there is no evidence to show that it is of any value after infection has occurred. At the same time, it does no harm. Strychnin, ergot, bromid, etc., are obviously not likely to be of use in so grave an affair. As soon as the diagnosis is made, the patient should be kept perfectly quiet, not only physically but also mentally, because modern pathology shows that in every case there is some involvement of the cerebral meninges.

The use of blood serum of recovered patients administered intravenously or intraspinally, and the use of Rosenow's serum in the earliest possible stage, have been advocated, and both are regarded by competent men with enthusiasm on the one hand and with skepticism on the other. This method of treatment cannot as yet be regarded as being of established usefulness, but it is apparently harmless. Electricity, massage and any attempt to move the paralyzed limbs should be condemned at this stage. A child in my service, a year ago, in the third week of the disease, having a paralysis of both legs, was making good headway, and the tenderness was rapidly improving. An enthusiastic young physician, who was asked to examine the child and do nothing else, had a theory that an attempt should be made early in the disease to drive impulses through the affected region, and he sat by this child and encouraged her to move the toes for a few minutes. He was greatly pleased to find that as he urged her to do this she seemed to gain a little more power for the time being. Within twenty-four hours this child became acutely sensitive, and had a rather serious set-back in the leg observed. A patient in Vermont was reported as having had an acute attack of infantile paralysis, and word was sent to keep the child absolutely quiet until sensitiveness had disappeared. A masseur, however, took charge of the case, called attention to the danger and futility of waiting, and started on fairly vigorous massage. At the end of a very short time the patient required large doses of morphin to quiet the great suffering which was caused, and the family was then willing to wait as directed. This point cannot be too strongly insisted on—that rest, so long as tenderness is present, is the cardinal indication in the treatment.

If the knees can be straightened and the feet held at a right angle, it is better that they should be so held by light foot splints, although plaster of Paris may be necessary; but plaster of Paris causes so much atrophy that it seems better to get along without it if possible. If extreme tenderness is present, the patient should be allowed to lie in the position which is most comfortable, because any attempt to secure a correct position in the presence of tenderness will result in prolongation of the latter and presumably an aggravation of the local condition. In case of extreme sensitiveness the patient should lie on a frame, well padded to support the entire body and to prevent movement, but it is unwise to attempt to secure correct positions at the expense of discomfort. One occasionally has to let such patients lie for weeks with the knees drawn up, hips flexed and toes dropped until the sensitiveness has subsided sufficiently to allow correction. To attempt correction under anesthesia at this stage is to cause great suffering and retard recovery. In this delay there is no danger of ankylosis, there is no danger of serious or irremediable muscular atrophy, and in certain cases in which the patients lived in foreign countries where immediate treatment has not been available, complete rest over a period of months has done no harm; in fact, when the patients have come for treatment, progress has been unusually rapid.

When the tenderness is diminishing, generally from the second to the fourth week, much comfort and apparent benefit are derived from immersing the patient in a hot saline bath and allowing him to move his joints a little and change his position. This may be repeated daily, and apparently aids in hastening the disappearance of the tenderness. Tenderness is also diminished by daily heating the tender areas for a few minutes by the use of electric light, which treatment is generally followed by a feeling of comfort. If it should increase the tenderness it is evident that it has been used too early. It is generally not wise to use it before the second week. Frequent or extended examinations of the patient during the tender stage are to be avoided, as they yield imperfect results and are detrimental to the patient. Any estimate of the degree or extent of the paralysis is unreliable so long as any tenderness exists.

With regard to sitting up, if there has been any impairment of respiration due to involvement of the muscles of the thorax, it is not wise to let the patients lie too long on the back. The inability to cough audibly is a sign of importance and points to respiratory involvement, and such patients occasionally die from respiratory complications in from one to two months after the attack. These patients should be guarded very carefully against anything that would induce respiratory complications, and exposure to cold air is questionable in such cases; otherwise fresh air is desirable.

As a rule, four weeks after the attack, the tenderness has become very much less, and it is generally wise to let the patient sit up in a chair as soon as the tenderness has markedly diminished. If there is any involvement of the abdominal muscles—and this is very common, occurring in something over 70 per cent. of all cases—an abdominal corset should be applied before sitting up is allowed. This is most important, as the outlook for recovery in the abdominal muscles is poor, abdominal paralysis being more frequently permanent than paralysis in any other muscle in the body, except in the lower leg.

Finally, a condition which is often overlooked is that of general sepsis induced by the infection. Many of the cases in the late stages of the acute phase present much the same general condition that would be found in a child who had had very severe infection in the form of scarlet fever or diphtheria. In such cases it is very desirable to look after the general condition and to encourage fresh air and forced feeding. A period of mental instability and nervous irritability is likely to occur in adolescents and older persons toward the end of the acute phase. With the disappearance of tenderness, the acute phase may be assumed to have ended and measures are next to be considered for the convalescent phase.

CONVALESCENT PHASE

The question of operation is not to be discussed until a good many months, at least, after the attack. Former tradition set the period at least two or three years from the acute attack; but, with a closer study of the affection and the more careful anatomic diagnosis now made, it is often possible to operate successfully before this period, if operation is necessary.

In starting on the convalescent phase it is desirable to take account of stock, make an accurate anatomic diagnosis, and forecast in a general way the course of treatment. This consideration should deal with certain aspects of the case:

It is important that every muscle in both arms, both legs, the back, the neck and the abdomen should be examined and its condition ascertained with a view to determining the location of the most serious impairment. For modern treatment, this is absolutely essential. For those who are not skilled in the usual methods employed in such examination, which consists in putting the limb in such a position that leverage, or the weight of the limb, is eliminated in examination so that low grades of power may be found, examination may be made with the patient immersed in a strong saline bath, in which the weight of the limbs is negatived and low degrees of power can be detected in all the muscles where it exists. The most helpful examination is to discover what muscles can be voluntarily contracted by the patient under favorable conditions of leverage, as, for instance, in the hot saline bath, and an electrical examination at this stage gives much less reliable information.

The three physical therapeutic measures which should be considered are electricity, massage and muscle training or reeducation.

Electricity has been much in vogue in the treatment of these cases in the past, and is to a large extent used at present. In moderate doses it probably does no harm, except to induce the parents to believe that effective therapeutic measures are being used, whereas there is little if any evidence to show that the routine measures employed, generally the use of the galvanic current, are of any value whatever in increasing muscular strength. The use of faradism, though causing a contraction of the muscles, is very uncomfortable to children. The painful element, however, is much diminished by the use of the Smart Bristow coil, which is faradism used in conjunction with a condenser. This coil was of much use during the war, and may be regarded as a mild form of exercise to muscles. The weak point about it is that it is difficult to confine the treatment to any one muscle, for the current spreads.

Massage improves the circulation, tends to keep up the muscular tone, probably diminishes atrophy, and is a measure of value if properly given after tenderness has wholly disappeared. Heavy massage causes muscular wasting; long continued or too heavy massage is likely to depreciate muscular power, and massage cannot, at any rate, be regarded as restoring muscular power. It is simply a measure to improve the nutrition, circulation and muscle tone of the affected limb.

Muscle training forms the basis of the modern treatment of poliomyelitis. In theory it consists of an attempt to make the patient send a voluntary impulse to contract a muscle, and of aiding the muscle in contraction by passive movement by placing the limb in such a position that gravity aids in performing the movement, and by the assistance of the hand.

There is one very important point in this connection that is often lost sight of. In an affected limb some muscles are as a rule paralyzed, some weakened, and some comparatively normal. The muscles that we wish to exercise are the muscles that are paralyzed or weakened. If the exercises are not carefully controlled and located, the patient is sure to use the strong muscles instead of the weak ones, to develop these, and thus to make the muscular balance still worse. Loosely given exercises by untrained persons, and encouragement to the child to keep around and do anything he can, are likely to do harm rather than good. Exercises should be given daily, and for them to be effective they must be given by a person who understands not only the theory but also the technic. Exercises given without proper control along the lines mentioned will probably do more harm than good.

Until recently, it has been the custom to encourage patients with weakened muscles to use them in walking, and to promote activity in every possible way with a view to developing the muscles; but this was done under a false conception, forgetting the physiologic fact that the overuse of a muscle is probably worse than its disuse. Let us assume that many of the leg muscles in a child in middle childhood have been reduced to 20 per cent. of their normal power. If that child is encouraged to walk, it is obvious that he is carrying a considerable amount of weight with muscles no stronger than those of a very young child, and that overuse of a gross sort is likely to be induced by walking and weight-bearing.

That this consideration is not wholly a theoretical one is shown by an analysis of the 1,836 New York State cases reported in 1917. These figures show that weight-bearing exercise, such as walking to any extent in the first year after infantile paralysis, is apparently attended with risk and is followed in many instances by a change from partial to total paralysis. In this group a set of recent cases was investigated, affecting the leg and foot, and the ratio of total to partial paralysis was as 1 : 2.5. In the same series a group of cases was analyzed in which paralysis had lasted for several years. Walking had been encouraged, in most of these cases from the outset, under the old method of treatment, and in these cases the ratio between total and partial paralysis was as 1 : 1.5, or nearly twice as great as in the recent cases. In the leg and foot, therefore, the proportion of total to partial paralysis was very much higher in the old than in the recent cases. That is to say, under conditions of weight-bearing, the partial paralysis is likely to change to total paralysis in connection with weight-bearing. This is not the case in the upper extremity, in which the ratio between total and partial paralysis was the same in the old as in the new cases.

The conclusion that one may draw, therefore, is that weight-bearing by one or both legs, with or without races, in the first year following infantile paralysis, s risky and detrimental if practiced to any considerable xtent.

Deformity may occur in the early weeks, and is a letrimental factor in preventing the recovery of nuscles partly paralyzed, chiefly from stretching. It ecomes a troublesome factor, especially in the third ear, and should be watched for and antagonized from he outset, but not at the expense of lighting up the enderness. The common and troublesome deformities re flexion contraction of the hips, adduction contracion of the shoulders, flexion of the knees, plantar lexion of the feet, and scoliosis. As deformity is most ften the result of the pull of unopposed muscles, its reatment consists of the retention of the limb in its ormal position and in abduction of the shoulder. The reat majority of deformities can be prevented in this ay.

The question of apparatus and operation belongs to special field of surgery, and, having been adequately liscussed in current literature, will not be considered ere.

CONCLUSION

No summary of this paper can be given, as it is at est only a summary of a large field. The important oints are that the diagnosis must not be made on the istory, but on the physical examination; that tenderess is a guide of great importance in diagnosis, progosis and treatment; that early treatment consists of est, and that, in the convalescent phase, muscle fatigue s our chief danger and muscle reeducation our chief eliance, and that deformities prevent proper function nd promote muscular deterioration.

If these points are borne in mind, many patients can e spared much unnecessary deformity and disability, nd we shall be able to take a much more hopeful view f the outcome of poliomyelitis.

234 Malborough Street.

TREATMENT OF HYPEREMESIS GRAVIDARUM BY THE DUODENAL TUBE

CHARLES E. PADDOCK, M.D.
CHICAGO

During the initial stages of pregnancy, vomiting is ot uncommon. But during its period a patient, in pite of the vomiting, is able generally to retain enough ood and water to keep her weight comparatively noral. After three months of pregnancy, these gastric isturbances nearly always cease.

Occasionally, however, we find cases in which, egardless of treatment, the vomiting persists. A oman suffering from this trouble continues to vomit, lmost to the starvation point. Heretofore, in such ases, we have thought it necessary to empty the uterus.

To the three cases of hyperemesis gravidarum, or xcessive vomiting, treated successfully by the use of he tube, which I have recently reported, I will add nother:

REPORT OF CASE

History.—Three weeks after the cessation of the menstrual eriod, a woman, aged 24, began to have gastric disturbances. morning sickness quickly developed into severe vomiting, hich stubbornly continued. After several weeks of treatment by proctoclysis and feeding by the rectum, as the vomiting could not be controlled, Dr. N. C. Gilbert was called. He made a diagnosis of pregnancy, and removed the patient to St. Luke's Hospital.

The condition of the woman on entering the hospital, March 4, 1922, was alarming. She was exhausted, her skin was hot and dry, her lips were parched, and the vomiting, containing blood, was almost continuous. Her temperature was 99, the pulse from 136 to 150, the respiration 24, and the blood pressure 118 systolic and 68 diastolic. March 5, I saw the patient with Dr. Gilbert. Owing to the patient's exhausted condition, we considered it inadvisable to empty the uterus, and decided to feed by the duodenal tube. The patient continued to retch and vomit a dark fluid.

Treatment and Course.—March 5, the tube was passed into the stomach. A few hours afterward the patient was given glucose, soda and water; this feeding she promptly ejected. The latter fact indicated that the tube had probably not passed the pylorus; but the following day, March 6, as clear bile was aspirated, the tube evidently had passed the pylorus. The patient had a restless night, gagging most of the time.

From now on she was fed, one hour, by the slow drip, glucose, 5 per cent., aqueous solution of sodium bicarbonate 2 per cent. This formula was used through the day at three-hour intervals.

With the settling of the tube into the duodenum, the patient was relieved almost immediately, and the eructation of gas became less frequent, and the distress less painful.

March 7, feeding at three-hour intervals was continued through the day with a formula consisting of glucose, 5 per cent. solution, 2 ounces (60 c.c.); milk, 3 ounces (90 c.c.); water, 3 ounces (90 c.c.); bromid, 15 grains (1 gm.).

March 8 and 9 she continued to be fed by the tube, the formula being supplemented by such things as milk, maltose, fruit juices and eggs, besides physiologic sodium chlorid solution. The patient retained the feedings; the temperature was now normal, the pulse 110, and the respiration 20.

March 13, four days later, the tube was removed, and the patient fed by the mouth. From this feeding of boiled eggs, toast, etc., the patient experienced no distress. With the removal of the tube, recovery continued easily and rapidly.

Laboratory findings.—The stomach contents on the day of entry, March 4 (evacuation) were: amount, 70 c.c.; color, dark; reaction, acid + +; free acid, 28; total, 66; Weber test for blood, + +. March 16 (evacuation): amount, 15 c.c.; color, watery; reaction, acid, free, 0; total, 8.

Blood count, March 4, erythrocytes, 4,140,000; hemoglobin, 82.

Blood chemistry: March 6, blood urea nitrogen, 28.62 mg. per hundred cubic centimeters; total nonprotein nitrogen, 55.52 mg. per hundred cubic centimeters; uric acid, 6.18 mg. per hundred cubic centimeters; carbon dioxid combining power, 49.4 per cent. by volume. March 11, uric acid, 1.59 mg. per hundred cubic centimeters; creatinemia, 1.12 mg. per hundred cubic centimeters. March 12, blood sugar, 1.38 per cent.; blood urea nitrogen, 18.03 mg. per hundred cubic centimeters; total nonprotein nitrogen, 37.98 mg. per hundred cubic centimeters.

Urine: March 6, albumin, + +; sugar —; acetone, +; casts, many hyaline; frequent leukocytes; catheterized.

CONCLUSION

The deduction from this case would seem to be that, by the applied use of the duodenal tube in early stages of hyperemesis gravidarum, the necessity for emptying the uterus for this disturbance may be reduced to a minimum. This method of treatment not only relieves the concern about the loss of life to the mother, but secures the life of the fetus as well.

While, in the treatment, the passing of the tube is comparatively simple, still, to insure the best and quickest results, the cooperation of the patient with the physician is necessary. After the tube has settled into place—it takes from four to twenty-four hours—the rest of the cure is simple.

As I see it now, the principal indications for the use of the tube are the loss of weight (due to starvation) or the dehydration of the tissues, in other words, the depleted condition that arises from excessive vomiting, or hyperemesis gravidarum.

104 South Michigan Avenue.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE METHOD FOR DEMONSTRATING TUBERCLE BACILLI IN THE SPINAL FLUID *

Sheo-Nan Cheer, M.D., Boston

Most clinicians are dissatisfied with the methods now in use in the search for tubercle bacilli in the spinal fluid of the meningitides. The pellicle and the film methods perhaps are the best. Both are based on the hope that the tubercle bacilli will be caught in the film that forms a spider's net in the fluid or a scum on its surface. Their disadvantages are threefold: (1) Such fibrin nets and films are not always formed. (2) Both these methods require refrigeration or incubation for at least twenty-four hours. (3) Even when tubercle bacilli are present in considerable numbers, only a few may be caught in the film or net, and so require many tedious hours of search before they are found. The early discovery of the tubercle bacilli is particularly important in those fluids in which polymorphonuclears predominate, and when, because of the latter condition, the possibility of a tuberculous meningitis is not seriously considered.

In endeavoring to develop a more satisfactory technic, two objectives were sought: (1) To reduce the specific gravity of the fluid till the point was reached at which the tubercle bacilli readily sink to the bottom on centrifugation. (2) To produce an albuminous coagulum which on sedimentation absorbs the tubercle bacilli. The attempt was made to reduce the specific gravity of the fluid by the addition of distilled water or to cause an albuminous coagulum by heating the upper layer of the fluid in a tube (as in the test for albumin in the urine) with subsequent centrifugation. Both these methods gave inconstant results. The addition of sulphosalicylic acid produces a very abundant protein precipitate, and tubercle bacilli were found in such precipitates; but this method was discarded because the sediment after centrifugation was so voluminous that the chances of finding the tubercle bacilli in any single smear were not great. The acid also has deleterious effect on the cells.

At last a method which seemed to fulfil ideally the theoretical requirements and which in practice gave excellent results was devised. This consists in the addition of one-third volume of 95 per cent. alcohol to the spinal fluid, which amount is sufficient to allow the tubercle bacilli to descend to the bottom on centrifugation, and, in addition, to form a thin albuminous cloud which sweeps the tubercle bacilli down with it. A further advantage in this method is the fixing of the cells in the fluid by the alcohol, thus enabling the use of the same smear for differential counts.

TECHNIC

Five cubic centimeters of spinal fluid is collected in a well cleaned centrifuge tube. To this, from one-third to one-half volume of 95 per cent. alcohol is slowly added, the tube being gently shaken all the while so as to obtain an evenly distributed cloud of coagulum rather than a single thick ring at the top. More or less alcohol may be added according to the density of the coagulum. In case very little or no coagulum is formed, a drop or two of dilute solution of egg albumin may be added. The optimal amount of coagulum is one that forms a milky appearance, such as one would call a "trace" in urine analysis.

The tube is then centrifuged at a fairly high rate of speed for one-half hour, or longer in case the precipitate is scanty. The supernatant fluid is then carefully decanted, leaving the albuminous precipitate in a very tiny drop of fluid. With a wire or a capillary pipet, this is then transferred to three or four slides, care being taken not to touch the sides of the tube in withdrawing the loop, since the material may stick to the tube and be lost. One slide may be reserved for gram stain or differential count, and the rest stained by the Ziehl-Neelson method.

In the last year this method was used in seven successive cases of tuberculous meningitis at the Massachusetts General Hospital, and tubercle bacilli were found in every case without prolonged search.

Since the method was devised, surgeons of the genito-urinary department of the Massachusetts General Hospital have used it with considerable success in demonstrating the tubercle bacilli in the urine of patients with renal tuberculosis. However, they found it necessary first to centrifuge the specimen at a low speed for five minutes to throw down cells and débris. Not many bacilli will be caught in this sediment on account of the relative high specific gravity of the urine. The clear supernatant urine is then poured off and treated as outlined above.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

DIPHTHERIA ANTITOXIN-TOXIN MIXTURE (See New and Nonofficial Remedies, 1922, p. 282).

H. K. Mulford Co., Philadelphia.

Diphtheria Toxin-Antitoxin Mixture-Mulford—T-A Mixture-Mulford: Each Cc. of the mixture constitutes a single dose containing 3 lethal (L+) doses of toxin and 3.5 units of antitoxin; marketed in packages of three 1 Cc. vials (*M 70-50*) representing one immunizing treatment; in packages of thirty 1 Cc. vials (*M 70-5*) representing ten immunizing treatments; also in packages of one 10 Cc. vial (*M 70-024*) representing three immunizing treatments of three doses each.

PHENOLSULPHONEPHTHALEIN (See New and Nonofficial Remedies, 1922, p. 230).

Phenolsulphonephthalein-Ipco. — A brand of phenolsulphonephthalein-N. N. R.

Manufactured by the Intra Products Co., Denver. No U. S. patent or trademark.

Vensterile Solution Phenolsulphonephthalein, 1 Cc.: Each Cc. of solution represents phenolsulphonephthalein-Ipco, 0.006 Gm. (1/10 grain) in the form of the monosodium salt.

Public Health Conditions in the Dominican Republic.—The Dominican Republic is located in the West Indies, occupies two thirds of the island of Haiti, between Cuba and Porto Rico, and has an area of 20,000 square miles and a population of about 708,000, including Spanish, Indian and African, negroes predominating. Since 1918, the United States naval authorities have occupied the country, owing to frequent insurrections, and sanitary conditions were reported as appalling. Commander Hayden, M. C., U. S. Navy, reports that since then the position of chief sanitary officer has been created and recently a new sanitary law, governing sanitation, public health, and the practice of the medical profession, became effective, all previous legislation on these subjects becoming annulled. The department of sanitation and beneficence was established and the country was divided into seven sanitary districts, each in charge of a health officer, and a public health laboratory was instituted. Violations of the sanitary law are punished by fines of from $100 to $200. Appropriations of $322,000 were made by the central government, and the municipal appropriations totaled $210,000, by which charity hospitals and orphanages were established and maintained. Venereal disease is prevalent in the republic, the incidence of syphilis being about 70 per cent. There is approximately only one physician for every 8,700 people.

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* From the Medical Laboratory of the Massachusetts General Hospital,

PROCEEDINGS OF THE ST. LOUIS SESSION

MINUTES OF THE SEVENTY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ST. LOUIS, MAY 22-26, 1922

HOUSE OF DELEGATES

First Meeting—Monday Morning, May 22

The House of Delegates met in the St. Louis Medical Society Building, St. Louis, and was called to order at 10 a. m. by the Vice Speaker, Dr. F. C. Warnshuis, Grand Rapids, Mich.

Preliminary Report of the Committee on Credentials

The Chairman of the Committee on Credentials made a preliminary report for this committee, stating that the committee desired at this time to report progress, and that more than a quorum of delegates had qualified.

As there was no objection, the report was accepted.

Next in order was the roll call by the Secretary.

The Secretary stated that the registration of the delegates in attendance recorded the presence of more than a quorum.

A quorum being present, the Speaker announced that the House was constituted and ready for the transaction of business.

The next order of business was the presentation, correction, and adoption of the minutes of the Seventy-Second Annual Session.

The Secretary stated that the minutes had been printed and circulated among the members of the House of Delegates, with the request for criticisms or corrections, but none had been received.

It was moved that the reading of the minutes of the Seventy-Second Annual Session be dispensed with and approved as printed.

Seconded and carried.

Addresses of Executive Officers

Drs. F. C. Warnshuis, Speaker; Hubert Work, President, and George E. de Schweinitz, President-Elect, addressed the House. See addendum.

Reports of Officers

SECRETARY'S REPORT

Dr. A. R. Craig, secretary, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

The following report is submitted for 1921-1922:

MEMBERSHIP

The membership of the several constituent associations, which is the membership of this Association, according to records in the Secretary's office on May 1, 1922, was 89,048. This is shown in the accompanying table, which also indicates the increase and the decrease in the membership of each of the organizations.

FELLOWSHIP

The Fellowship of the Scientific Assembly of the American Medical Association on May 1, 1921, was 50,970. During the year from May 1, 1921, to May 1, 1922, 478 Fellows have died, 1,433 have resigned, 724 have been dropped from the roll as not eligible, 692 have been dropped for non-payment of Fellowship dues and the names of twelve have been removed from the roll on account of being reported "not found," making a total of 3,339 names to be deducted from the Fellowship roll. Of these discontinuances, 962 have been transferred from the Fellowship roster to the subscription list of The Journal. There have been added to the Fellowship roll 5,391 names. Of these 3,407 were transferred from the subscription list of the Association's publications. The Fellowship of the Association on May 1, 1922, was 53,022, a net increase of 2,052.

DEATH OF SPEAKER

Dr. Dwight H. Murray, Speaker of the House of Delegates, died suddenly at his home in Syracuse, N. Y., from valvular heart disease on Oct. 21, 1921, aged 60. He represented the Medical Society of the State of New York in this House of Delegates continuously from 1910-1920, when he was elected Speaker of the House. He was Vice President from 1916 to 1920.

HOTEL RESERVATIONS FOR MEMBERS OF THE HOUSE OF DELEGATES

In compliance with the action taken by the House of Delegates last year at the Boston Session arrangements were made to reserve tentatively 150 hotel rooms for the accommodation of members of the House of Delegates at the present session and these rooms were held until after all reported delegates had been advised by the Secretary's office that they could secure hotel accommodations from the rooms so reserved, and until the secretaries of the state associations holding meetings at which new delegates would be elected during the spring months had been urged to secure reservations for the delegates who were to be elected at their state meetings. This action has been criticized in at least two instances. Consequently, the subject is brought to the attention of the House of Delegates. The criticisms were to the effect that the reservation preempted rooms at one of the leading hotels which it was claimed should have been available to "first come, first served" applicants for reservations addressed to that hotel.

ORGANIZATION

In accordance with the plan of organization recognized by the Association, the several component medical societies are vested with the authority to elect the members of the organization, and the model form of constitution for these component societies, prepared by the Committee on Organization, declares that the society shall judge of the qualification of its members but that as it is the only door to the state medical association and to the American Medical Association for physicians within its jurisdiction, every reputable and legally qualified physician of the county or district who does not support or practice or claim to practice sectarian medicine shall be eligible to membership. The model form for constitution and by-laws of constituent state associations contains the following provision: "Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, and its decision shall be final."

The intent of these regulations seems to be clear. The authority for carrying out the provision is, however, not stated definitely enough to avoid possible conflict between a component society and the constituent state association. In order to obviate these questions of controversy, the model form for by-laws of component county societies might be modified to read:

> "The society shall judge of the qualifications of its members, subject, however, to the provisions set forth in the constitution and by-laws of the state association of which the society is a component branch, but as it is the only door, etc."

The section from the model form for constitution and by-laws for the state association, in order to conform to the provisions of the constitution and by-laws of the American Medical Association, should have added to the section quoted above the phrase

> "Provided, however, that on questions of law and procedure, but not of fact, appeal may be made to the Judicial Council of the American Medical Association."

Another subject which merits consideration is the question of the transfer of membership from one component society to another when a member of the organization moves to a new location and then engages in the practice of his profession. .

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	No. Counties in State	No. Component Societies in State Assn.	Number Counties in State Not Organized		No. Physicians in State (7th Ed. Directory)	Number Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1921	1922		1921	1922		
Alabama........	67	67	.....	.....	2,405	1,683	1,667	469	302
Arizona.........	14	12	3	2	380	245	180	168	88
Arkansas.......	75	63	12	12	2,450	1,194	1,114	437	203
California......	58	42	16	16	6,766	3,351	3,450	2,499	1,701
Colorado.......	63	36	27	27	1,817	896	1,045	667	349
Connecticut.....	8	8	.....	.....	1,729	1,019	1,083	703	393
Delaware........	3	3	.....	.....	262	129	135	94	56
Dist. Columbia.	.....	.....	.....	.....	1,689	567	570	374	253
Florida.........	54	31	23	23	1,281	577	580	302	252
Georgia.........	154	101	53	53	3,406	1,225	1,858	583	363
Idaho...........	44	26	18	18	553	250	313	144	116
Illinois..........	102	100	2	2	10,651	7,065	7,384	4,679	2,121
Indiana.........	92	90	2	2	4,446	2,420	2,444	1,348	649
Iowa...........	99	99	.....	.....	3,536	2,277	2,448	1,365	608
Kansas..........	105	67	38	38	2,550	1,639	1,632	865	387
Kentucky.......	120	114	6	6	3,323	2,142	2,158	744	309
Louisiana.......	64	41	23	23	2,001	1,124	1,076	758	278
Maine...........	16	15	1	1	1,105	667	748	367	139
Maryland[1]......	23	21	2	2	2,364	1,274	1,291	827	592
Massachusetts[2].	14	14	.....	.....	5,959	3,798	3,944	2,692	1,151
Michigan........	83	81	2	2	4,593	2,864	3,147	1,678	787
Minnesota......	86	82	4	4	2,628	1,452	1,704	1,201	643
Mississippi......	81	79	2	2	1,761	794	881	338	191
Missouri[1].......	114	108	6	6	5,921	3,383	3,511	1,743	828
Montana........	51	19	32	32	620	381	372	181	161
Nebraska.......	93	63	29	30	1,965	1,068	1,077	688	418
Nevada.........	17	3	14	14	147	91	99	60	34
New Hampshire	10	10	.....	.....	641	520	524	291	80
New Jersey......	21	21	.....	.....	3,260	1,895	2,108	1,441	681
New Mexico.....	29	14	15	15	529	286	298	126	92
New York.......	62	61	1	1	16,284	8,916	9,270	5,763	3,162
North Carolina.	100	82	18	18	2,236	1,636	1,412	563	415
North Dakota..	53	51	2	2	556	455	415	272	113
Ohio............	88	87	1	1	8,092	4,556	5,058	2,518	1,370
Oklahoma......	77	66	11	11	2,622	1,374	1,350	702	281
Oregon.........	36	34	2	2	1,145	616	714	300	252
Pennsylvania[3]..	67	63	4	4	11,348	7,384	7,429	4,648	2,096
Rhode Island[2]..	5	5	.....	.....	778	388	380	289	141
South Carolina.	46	41	5	5	1,452	632	714	299	228
South Dakota[2].	68	10	8	8	658	398	352	241	155
Tennessee.......	96	67	29	29	3,328	1,743	1,890	693	327
Texas...........	248	179	69	69	6,205	3,606	3,501	1,736	735
Utah............	29	5	24	24	496	296	335	206	128
Vermont........	14	12	2	2	594	379	402	184	90
Virginia[4]........	100	65	35	35	2,545	1,898	1,951	652	463
Washington....	39	19	20	20	1,797	987	1,113	593	384
West Virginia...	55	41	14	14	1,717	1,235	1,314	541	378
Wisconsin.......	71	70	1	1	2,750	1,949	1,921	1,168	637
Wyoming.......	22	10	12	12	267	130	160	81	74
Misc., Foreign, Govt. sub. for Army, Navy & U. S. P. H. S. ..	.....	.....	.....	.....	.....	.....	.....	131	2,860
Alaska........	.....	.....	.....	.....	.....	.....	20	13	10
Hawaii..........	5	.....	.....	.....	.....	81	92	44	45
Porto Rico......	7	.....	.....	.....	.....	116	127	32	33
Philippine Isl. ..	.....	.....	.....	.....	.....	158	196	64	82
Canal Zone.....	.....	.....	.....	.....	.....	74	91	25	29
Totals.......	3,048	2,398	588	588	145,608	85,283	89,048	49,590	28,713
Commissioned Officers [5] and Honorary Fellows..........								3,432	
								53,022	

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on April 1, 1922.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.
2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.
3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.
4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.
5. This figure includes the Medical Corps of the Army, the Navy and the Public Health Service.

The foregoing instances are cited for the purpose of bringing the general question to the attention of the House of Delegates. It is suggested that the Judicial Council of the American Medical Association be requested to revise the model forms for constitution and by-laws for both component societies and constituent associations. It is further suggested that the Judicial Council be authorized to submit to the constituent state associations such changes as may be unanimously approved by the Council in the fundamental principles set forth in these model forms for constitution and by-laws. It is to be hoped that any revision in these model constitutions and by-laws will commend themselves to the constituent state associations and the component county societies so strongly as to insure their adoption.

AMERICAN MEDICAL ASSOCIATION BULLETIN

The American Medical Association Bulletin was first published as the Councilor's Bulletin. It was planned to devote this publication to the discussion of organization matters. Contributions were received from officers of county and state organizations discussing the value of the county society to its members, the place of the state association in the organization, and similar subjects. These articles from the field did not continue, however, and the Bulletin was devoted to publishing reports of the Councils, conferences held under the auspices of the Councils, and similar matters. In accordance with the action taken by the Board of Trustees at its meeting held last November, an effort is being made to restore the Bulletin to its original purpose and to make it a forum for the discussion of sociologic, economic and particularly of organization themes. The Board has directed that the Secretary of the Association shall be the Editor of the Bulletin, and advantage is taken here to make special request of the members of the House of Delegates to use the Bulletin for the discussion of topics which should be considered by the House of Delegates. The editorial policy, if it meets with the approval of the House of Delegates, will be to place the columns of the Bulletin at the service of members of the organization, of officers of the component societies and of the constituent associations, and of the members of this House of Delegates and the officers of the Association. It has been suggested that the Bulletin be announced to be the official journal of the House of Delegates and it is requested that action by this body be taken on this proposal.

"MEDICAL ADVISORY COMMITTEE"

Early last January, inquiries were received at the Secretary's office regarding a letter that had been sent by a "Medical Advisory Committee" to the component county medical societies, the constituent state associations and others. This letter, which was reprinted in The Journal of the American Medical Association and in the American Medical Association Bulletin, suggested the adoption of a preamble and resolutions in accordance with a copy submitted. Twenty-three component county medical societies have transmitted to the Secretary's office reports to the effect that they had adopted the submitted preamble and resolutions offered by the "Medical Advisory Committee" in the form proposed in the circular or with slight modifications. In each instance, the officers of the county medical society reporting such action were asked for the evidence, in support of the postulates incorporated in the preamble, which was submitted to the county society at the time the action was taken; nine replies which were received have been published in the American Medical Association Bulletin. A statement issued by a joint committee of the Board of Trustees and the Judicial Council, discussing these postulates, also was published in The Journal as well as in the American Medical Association Bulletin. Copies of these Bulletins were mailed to the officers of the American Medical Association, the presidents and secretaries of the constituent associations and of the component societies, and also to the members of the House of Delegates as constituted at the Boston Annual Session; additional copies are available for the information of those members of this House who may not have had access to them.

COOPERATION IN ORGANIZATION

No real good can be accomplished by mere criticism of what has been done or what has not been done in the past.

All recognize that much constructive work in the various tasks undertaken by the Association has been accomplished. That these accomplishments have been all that are desired, no one will claim. The fact that there is a conflict of opinion is gratifying because if these conflicting opinions be controlled, they stimulate action that must result in the welfare of the organization, its members and the public service which is rendered. In any organization constituted as is the American Medical Association, development and effective service is conditioned on the helpful cooperation of the component societies and the constituent state associations. Finally, it is to this House of Delegates that the Association looks for the intelligent framing of a constructive policy to be carried out by the officers elected by this House, working in cooperation with the branch organizations.

UNFINISHED BUSINESS

At the Boston Session last year, the Reference Committee on Amendments to the Constitution and By-Laws submitted the following to lie over for action at the 1922 session of the House:

"The last sentence of Section 2, Article 5, of the Constitution reads:

> The Trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

We offer and introduce the following amendment—that this sentence be changed to read:

> The Trustees and Ex-Presidents of the Association shall be ex-officio members of the House of Delegates, but without the right to vote.

Additional matters in which the office of the Secretary has been active are reported to the House of Delegates through other channels.

Respectfully submitted,
ALEXANDER R. CRAIG, Secretary.

REPORT OF THE BOARD OF TRUSTEES

Dr. W. T. Sarles, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

The year 1921 was one of general depression and contraction in the commercial world. Practically all activities were affected, and the printing and publishing field was no exception; the reaction to the abnormal profits of the preceding year or two was such that great losses were common. Our publications, however, were affected but little by the conditions; in fact, the year was a prosperous one from the financial point of view, and satisfactory in respect to all the enterprises connected with the publications and with our business matters generally.

The increase of $1 in the annual dues and in the subscription price of THE JOURNAL went into effect in January, 1921. Naturally, considerable falling off in the circulation was expected on account of this increase in dues. However, there were comparatively few losses on this account; in fact, the mailing list at the end of the year showed an increase of 1,109. The actual count of that list as of Jan. 1, 1922, was 79,669.

Table 1 in the addenda indicates the circulation for the year by weeks; Table 2, the circulation by states and the percentage of physicians in each state receiving THE JOURNAL; Table 3, the number of Fellows and subscribers each year, beginning with 1900. In addition to the circulation indicated in Table 2, 307 copies of THE JOURNAL were taken by the Medical Department of the Army; 250 by the Navy, and 103 by the Public Health Service. Also, there were 2,828 foreign subscribers, including those in United States dependencies.

It will be noticed by Table 3 that there are approximately 50,000 Fellows taking THE JOURNAL, and a little over 30,000 subscribers. The latter number—30,000—exceeds by several thousand the total paid circulation of any other medical weekly. The *British Medical Journal* has the next highest circulation, which, we believe, at the last count was something over 23,000.

ADVERTISING DEPARTMENT

As stated in last year's report, until 1919 the receipts from dues and subscriptions exceeded those from advertising; since 1919, the order has been reversed. For the year 1921 the earnings from advertising exceeded the receipts from dues and subscriptions by $117,367. The total advertising earned during 1921 was $569,078, or an increase over the preceding year of $56,313. The confidence of the medical profession (in the advertising pages), maintained by the high standard governing acceptance of all advertisements, is no doubt a great factor in THE JOURNAL'S volume of, and increasing revenue from, advertising.

COOPERATIVE MEDICAL ADVERTISEMENT BUREAU

The bureau is now on a self-supporting basis; in fact, in December of the last three years it has returned a substantial amount to the various journals, as their proportion over and above the actual expenses of conducting the bureau. It continues to give satisfaction to all its constituent journals, which includes every state journal except that of Illinois; it is of practical assistance to the editors, most of whom are physicians in active practice, the majority having neither the time nor the inclination to look after the details which are assumed by the bureau. The Massachusetts State Medical Society has recently taken over the *Boston Medical and Surgical Journal,* and this has now come into the bureau.

SPANISH EDITION

The Spanish edition is doing fairly well, and the circulation is about holding its own. As with all foreign business, the principal obstacle is the matter of exchange. The present conditions in this regard are a serious handicap in connection with the publication of the Spanish edition; the amounts to be remitted are small and, therefore, proportionately more difficult and expensive to handle than would be the case if the amounts were large. An attempt is being made to overcome in part this handicap. While we are publishing this journal at a loss—the Rockefeller Foundation, as announced in former reports, bearing one half of it—at the same time, it will be remembered that the main purpose is to bring about closer relations between our Latin-American confrères and ourselves. In this it is succeeding. The Spanish journal contains the cream of the scientific matter that appears in the regular edition, and commendatory letters from its readers are received almost daily. Until this journal was started, Central and South America depended almost entirely on Germany—and to a less extent on France—for their medical periodical literature. The Spanish edition is making known to our Spanish-speaking confrères that the medical profession of the United States is in the vanguard in advancing medical science.

The circulation of the Spanish edition for last year was 3,469, and was widely distributed: Mexico has the largest number of subscribers—648; Cuba has 497; Argentina, 396; Spain, 379; Brazil, 269; Philippine Islands, 241; Chile, 184; Colombia, 109. The rest of the circulation is scattered and includes Ecuador, Guatemala, Nicaragua, Peru, Venezuela, etc. The language in Brazil is Portuguese, which accounts for the comparatively small number circulated in that country.

SPECIAL JOURNALS

There was a slight profit on the publication of three of the special journals—the ARCHIVES OF INTERNAL MEDICINE, the AMERICAN JOURNAL OF DISEASES OF CHILDREN and the ARCHIVES OF SURGERY; and a loss on the publication of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY and on the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY. The gains on the three practically overcame the losses on the two, there being an actual loss of about $40. All these journals may be regarded as successful and fulfilling the purpose for which they were established. The circulation of each, as of Dec. 31, 1921, is as follows: ARCHIVES OF INTERNAL MEDICINE, 2,611; AMERICAN JOURNAL OF DISEASES OF CHILDREN, 2,692; ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 1,220; ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, 1,245; ARCHIVES OF SURGERY, 3,146. The

Archives of Neurology and Psychiatry and the Archives of Dermatology and Syphilology appeal to limited specialties; therefore, their circulation is really better than was expected.

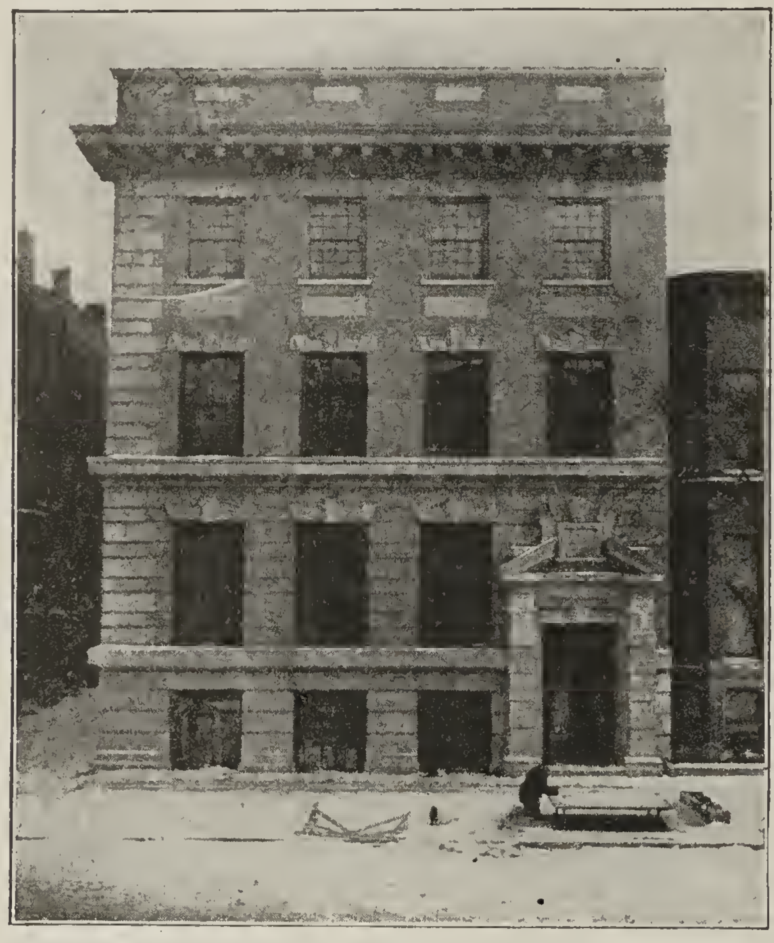


Fig. 1, Building "A."—The three-story and basement building originally erected, and occupied in December, 1902.

Quarterly Cumulative Medical Index

This index, established to supply up-to-date, ready references to practically all the important medical literature of the world, is proving a success and evidently is thoroughly appreciated. The circulation is slowly increasing: on January 1 of this year there were 1,133 names on the subscription list, which must be considered as eminently satisfactory for a book of this character. It is only just beginning to be known abroad, but already has 108 foreign subscribers.

The Propaganda Department

It is undoubtedly a fact that the American Medical Association is better known to the general public through the educational service of the Propaganda department than through any other phase of the Association's activities. Few members of the organization appreciate this, as is evidenced by letters received from physicians, in which the question is asked: How are you reaching the public with these articles published in a medical journal? The fact is, all the material published in The Journal on the nostrum evil and quackery that is of interest to the public is immediately reprinted in leaflet or pamphlet form for general circulation, especially in reply to the queries that are received continually from laymen.

It should again be emphasized that the articles that appear in this department of The Journal from week to week are but a small part of the Propaganda work. Thousands of letters of inquiry are received and answered yearly and the educational value of this work is not fully appreciated. This work is referred to with increasing frequency in school and college textbooks on general science, civic science, biology, hygiene, etc. These books urge the students to write to the Propaganda department for information and to obtain its books and pamphlets for supplementary reading and study. As an example of what this means in educating the public at its most impressionable age, one instance has been cited: The students of a single class of one metropolitan high school sent in 130 letters of inquiry. Each of these was answered and educational material sent to the students. Almost as important is the work of furnishing information to advertising managers of newspapers and magazines the policy of which is to keep their advertising pages as free as possible from objectionable medical "copy." Hardly a day passes that a request for information is not received from such a source. Here, again, the department is exerting a silent but far-reaching influence to an extent that can be appreciated only by those who are familiar with its daily work.

The second volume of "Nostrums and Quackery" has received a flattering reception by both the medical and the better representatives of the lay press. It is issued in uniform size and style with the first volume, but contains much more material. There is an increasingly active demand for the books, pamphlets and educational posters, and especially for the stereopticon slides, prepared and issued by the department. The pamphlets and posters already issued are kept up to date and new ones added.

Council on Pharmacy and Chemistry

The Council on Pharmacy and Chemistry, continuing its splendid efforts for rational therapy, has made its influence felt not only in this country but also abroad. Similar bodies, concerned with framing legislation affecting drugs and with service such as that performed by our own Council, have been proposed or established in France, Germany, Belgium and Holland. Through its publication "New and Nonofficial Remedies," which describes the medicinal preparations found worthy of recognition, and its "Annual Reports," which explain the rejection of those found unworthy, the Council provides the means whereby physicians may distinguish between drugs that may be expected to have therapeutic value and those which are more or less worthless. It may interest you to know that the distribution of N. N. R. is world wide; orders have been received from Brazil, Colombia, Cuba, Honduras, Mexico, Nicaragua, Philippine Islands, Porto Rico, Egypt, China, India, Japan, Korea, Manchuria, Alaska, Canada, England, Scotland, Ireland, Switzerland, Syria and the Transvaal. The problems before the Council today are not the complex proprietary mixtures which were the bane

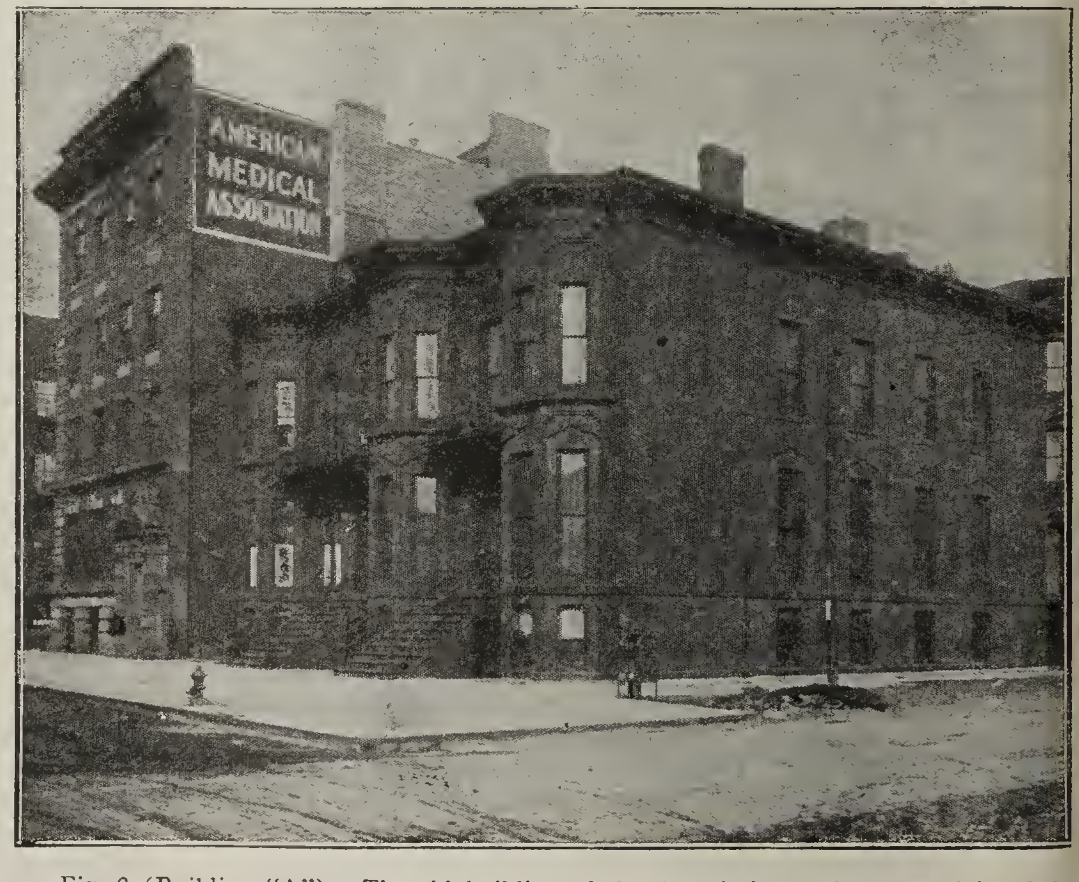


Fig. 2 (Building "A").—The old building of the Association as it appeared in 1910. This view shows the added fourth story erected in 1905, together with the remaining houses of the original purchase.

of medicine fifteen or twenty years ago, but the "mixed" vaccine, the "pluriglandular" endocrine preparations and the nonspecific protein products of animal and vegetable origin. In addition to many irrational mixtures of this type, the Council is also coping with both the extraordinary claims of firms specializing in intravenous medication and the attempts at commercialization of our new knowledge of vitamins.

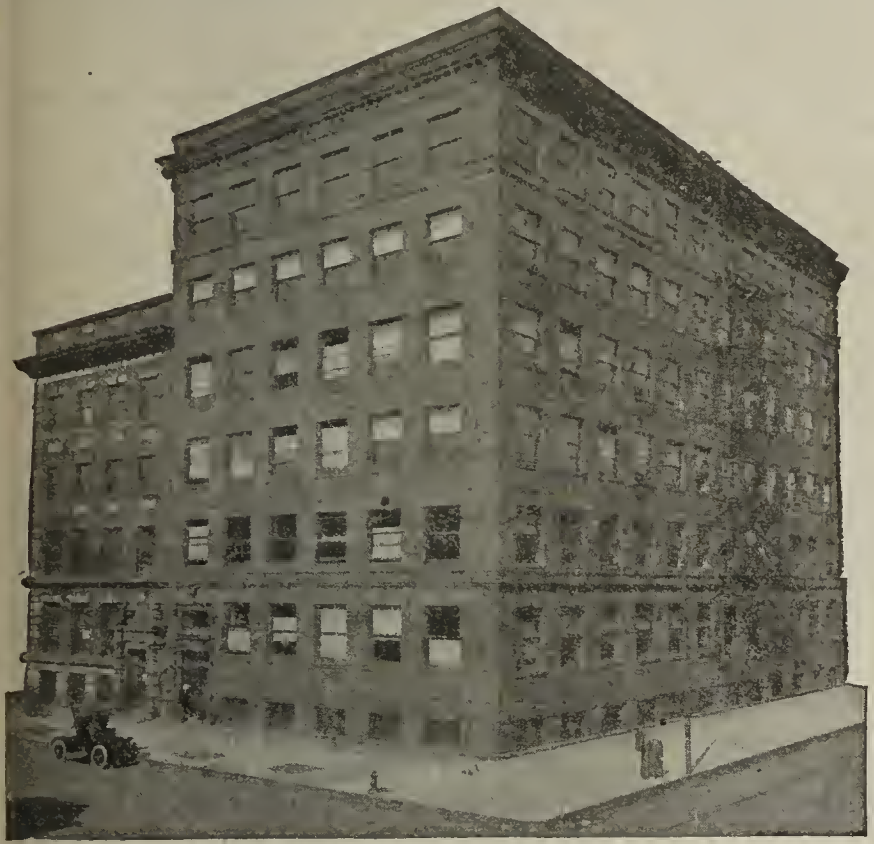


Fig. 3 (Buildings "A" and "B").—The Home of the Association.

The Chemical Laboratory continues to serve the profession by the analyses which it makes for the Council and through the independent investigations which it takes up at the request of the The Journal or on its own initiative. False claims regarding the composition of medicines sold to physicians are, thanks to our laboratory, less common than formerly. Instead of simple chemical analyses, the laboratory is obliged to make use of the most modern methods in investigating the newer products that are offered.

Appropriations for Research

The Board of Trustees has been making appropriations averaging about $3,000 annually for research: $1,500 for the Committee on Therapeutic Research, and a like amount for the Committee on Scientific Research. The former—a subcommittee of the Council on Pharmacy and Chemistry—confines its grants to the encouragement of investigations on matters relating to therapeutics; the latter covers the broader field of scientific medicine. For instance, during 1920 the Committee on Scientific Research granted $450 for continuation of the work on the influence of glands of internal secretion on ovulation; $300 for work on problems of excretion of urea; $400 for the study of bacterial proteins; $300 for work on metabolism of inorganic salts, and $350 to aid in a study of the arachnoid fluid in early syphilis. Most of the expenditures of the Committee on Scientific Research, as well as of that on Therapeutic Research, are for materials; occasionally they are for special assistants. This year, a special appropriation of $1,000 was made for the Council on Pharmacy and Chemistry, to be used in the conduct of an exhaustive investigation of the subject of local anesthetics. It is a continuation of the work that has been conducted during the last two years by a special committee of the Council, of which Dr. Emil Mayer, of New York, was chairman. Three reports made by this committee have appeared—the first in the *Laryngoscope* in July, 1920, an abstract of which was published in The Journal for July 31 of the same year. The final report appeared in The Journal, Oct. 22, 1921. The practical results of this investigation—which, however, covered only laryngology, rhinology and otology—warranted the Council in asking for a special appropriation to cover the general field of medicine. A new committee, with Dr. Mayer still as chairman, has been appointed and is now formulating its plans of work.

New Building

In its report to you at Atlantic City, in 1919, your Board of Trustees stated that the increased activities of the Association were beginning to crowd the present facilities at headquarters, and that it had under consideration the tearing down of the old building and the extension of the steel and concrete building to the alley. Soon afterward, conditions in the building trades became so unsettled that it was decided to defer the matter of building for a time. However, as matters became more settled, the Board authorized the architects to prepare plans for building in the spring of 1921. These plans were presented to the Board at its annual meeting in February, 1921. The Board approved the plans and authorized the architects to work up the specifications and to call for bids, with the idea of commencing to build early in the spring of 1921. As the lowest bid was $420,000—over $100,000 higher than the architect's estimate—it was decided to postpone building. This matter was discussed in detail in our report to you last June, to which we refer.

The basement has been the main problem: Here all the large presses have to be located; here also is the logical place for paper storage. But the space would not be sufficient even for our present work if the heating and steam plants and the coal storage were to continue to occupy basement space, as is now the case. Last year the plan was solved, at least in part, by providing for a subbasement for the heating plant and machinery. This was a rather expensive and an uneconomical solution; the cost for the subbasement was estimated at $25,000. In taking up the matter this year, the architects suggested—as they had done the year before—that, if possible, we purchase the property adjoining on the east. Without going into details regarding the difficulties of securing this property—it was owned by two different persons—it was purchased last December, for approximately $32,000—only $7,000 more than the subbasement would have cost. It consists of a lot 40 by 100 feet, on which was a cheap double house. The obtaining of this property made it advisable to reconsider the original plans. After giving the subject careful consideration, keeping in mind not only the present but also the possible future needs of the Association, the Board decided to carry out the plans outlined in its report of 1919

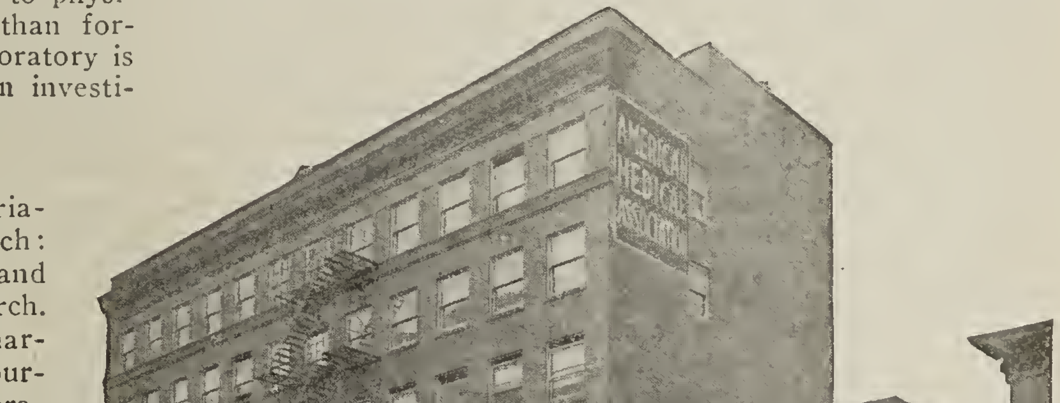


Fig. 4.—Showing new property.

and, in addition, to include the new property in the complete structure. This will provide a building 100 by 160 feet, six stories and a high basement, of steel and concrete construction, fireproof, and sufficiently strong to carry at least two more stories if more room should become necessary. Not only will there be sufficient room in the basement for the heating plant and the machinery appertaining to it, but also increased floor space. There will be an assembly room, 40 by 60, without pillars, that will seat from 300 to 350 persons, and a smaller room to seat from sixty to seventy-five; committee rooms also are provided for, besides the various departments, offices and storerooms. A slight change will be made in the main entrance on Dearborn street, and there will be an employees' entrance to the printing department on Grand Avenue; also another passenger elevator will be installed at the side of the present one.

This building will provide more room than is just now required; the mistakes of the past, however, have been in overconservatism. For instance: The first building [Building "A," Fig. 1] had hardly been occupied when it was outgrown. In about two years, additional property was bought, the building extended back 40 feet, and another story added [Building "A," Fig. 2]. In two years, still more room was needed, and one of the houses adjoining the old building on the south was taken over, altered and utilized [adjoining building "A" in Fig. 2]. Then, early in 1910, we moved into Building "B" [Fig. 3], which had just been completed, and rented the old building. In 1920, when it was found inadvisable to build, the old building [Building "A"] was taken over and occupied.

The new building should be ample for many years, and yet if the proposed popular medical magazine is published and is the success that most of us expect it to be, and especially if the Association's activities continue to expand, even the additional stories now provided for may be needed. The big—the important—thing is that we shall have space for a printing plant such as we have needed for several years. It may be recalled that, owing to lack of facilities, we were compelled to discontinue printing the Pennsylvania, Missouri and Indiana state journals, and that we were not able to undertake the publication of two special journals that were asked for. We have also been handicapped, on account of lack of space, in carrying on the regular work. The importance and the practical value of such a printing and publishing plant as the Association now owns should be emphasized. It gives the Association advantages in many ways: The large amount of paper used, especially in printing The Journal, makes it possible to deal directly with the mills and to obtain prices below those which the average printer has to pay; up-to-date labor-saving machinery, especially that adapted specifically to medical magazine printing, makes for economy of production. The ample space in the new building will make it possible for our mechanical department to do still more for the advancement of medicine in the United States—one of the fundamental objects for which the Association was organized—because it can print and circulate at a comparatively low figure scientific magazines that otherwise would be very expensive. Finally, the completion of this building will mean the accomplishment of an ambition which the officers and Fellows of the Association have had for many years—a substantial, well-equipped home that will be a credit to the medical profession of the United States and particularly to the American Medical Association. As this matter is put into type, we cannot state the cost, as the bids are not yet submitted. However, the building fund accumulated by order of the House of Delegates will, we are sure, be sufficient to complete the construction of the new building.

Referendum on the Therapeutic Use of Alcohol

The results of the referendum conducted by The Journal during December and January were published in detail in The Journal, and it is unnecessary to recapitulate. The Board desires, however, to call attention to the special importance of the comments made by physicians in returning the questionnaire. These comments were of even greater value than the statistical matter; they reflected the extreme dissatisfaction of the profession with the conditions which have resulted from the regulations for the prescribing of alcoholic preparations. Analysis of the comments showed that, aside from the fact that they are taxed to enforce a law which is primarily for the good of the public, physicians are satisfied with the control of narcotics, as regulated under the Harrison Narcotic Law; a large number suggested that the government take over the whisky, including its storage and sale. It has been proposed that the government supply it in sealed packages—say, 8, 16 and 32 ounces—for medicinal use only, at a fixed price, under regulations similar to those of the Harrison Narcotic Law. Such a plan would make available to physicians a drug of dependable quality—the fact that such whisky was not obtainable was repeatedly emphasized in the comments—and lead to the elimination of unsatisfactory conditions resulting from limitations in quantities of the drug and in the number of prescriptions, such as now exist. It is believed that if this matter is presented to the Internal Revenue Department and to Congress, with the support of the medical profession, some such plan as is outlined may be adopted. The referendum demonstrates that a majority of those members of the medical profession who replied to the referendum believe whisky to be a necessary therapeutic agent. It also showed that the conditions are such as to demand a change in the regulations now existing permitting the use of alcohol. In any event, the Board of Trustees believes that conditions demand action on the part of the Association and recommends that the suggested appeal to the federal government be endorsed by the House of Delegates, and that it be referred to a special committee, to one of the councils or to the Board of Trustees for further action.

Reduction in Annual Dues

As will be remembered, in 1920 conditions in the printing trade reached a point at which The Journal was being published at a steadily increasing loss, specifically because of the high cost of paper and of labor, and in November, of that year, a special meeting of the House of Delegates was called to authorize increasing the annual dues from $5 to $6. Soon afterward, however, prices began to go down until now the price of paper is practically two-thirds of what it was in the fall of 1920; the cost of labor also has been decreased to a slight extent. The Board therefore believes that by the end of the year conditions will be such that we can revert to the $5 dues. It recommends, however, that the by-law governing the matter be amended so as to leave the regulation of the dues to the Board of Trustees; if an emergency in the future should necessitate it, the annual dues and the subscription might then be changed without calling together the House of Delegates. The present by-law (Chapter XVII) reads:

> Annual Fellowship Dues: The annual Fellowship dues shall be six dollars, payable in advance on the first day of January of each year, of which not less than five dollars shall be credited to the subscription for one year to The Journal.

The Board suggests that the following be added:

> Provided, however, that the Board of Trustees, by unanimous vote, may change the amount of the annual dues; and provided further that these dues shall not be less than $5.00 or more than $6.00 per annum, and that any such change shall be announced in The Journal of the American Medical Association on or before November 1 of the year preceding that in which the change is to become effective.

The Board of Trustees—The Board of Directors

Until two years ago, the duties of the Board of Trustees were defined in the Constitution (Article 7) as follows:

"The Board of Trustees shall have charge of the property and financial affairs of the Association."

In other words, the functions of the Board of Trustees pertained solely to the publication of The Journal and to the control of the business and financial affairs of the Association. At the New Orleans session, in 1920, the House of Delegates amended the Constitution by the addition of the following clause:

"and shall perform such duties as are prescribed by law governing directors of corporations."

The Board of Trustees understands the modification to mean that the Board now bears to the House of Delegates the same relation that a board of directors bears to the stockholders of a corporation; in other words, in the interval between the annual sessions, it is to act for the House of Delegates and to have a general supervision of all the activities of the Association.

That the Board of Trustees might keep in closer touch with all the work at headquarters, it created an Executive Committee, to meet monthly, or as often as necessary, at the Association headquarters. This committee consists of the local member of the Board and two others, with the chairman of the Board and the general manager as ex-officio members. Occasionally, the President or the President-Elect, or both, have been in attendance at the Executive Committee meetings.

Since the adoption of the modification of the Constitution, the Board of Trustees and its Executive Committee have been considering certain problems that do not come directly under any of the constituent councils. It is at this time, however, prepared to report only on the following:

Pay Clinics, Diagnostic Clinics and Group Practice

At the meeting of the Board of Trustees on November 10-12, as stated in The Journal for November 26, p. 1741, the question of pay clinics, diagnostic clinics and group practice was given extended discussion. Inasmuch as such organizations exist and are rapidly increasing, it is evident the American Medical Association should recognize this fact and give the matter consideration. The Executive Committee was authorized to consider the subject in detail and to report what action, if any, should be taken. The committee later recommended that a small committee be appointed to make a survey of the whole subject of group practice, pay clinics and similar combinations. The recommendation of the committee was approved by the Board of Trustees. As an initial movement in this direction, the committee asked Dr. H. R. M. Landis of Philadelphia to make a preliminary survey of the Cornell Pay Clinic. March 20, Dr. Landis made a report based on three visits to the clinic. He confirms the statements of the dean of Cornell, as published in The Journal, November 26, p. 1755, and indicates that the clinic was then conducted under the regulations outlined by Dean Niles. Quoting from Dr. Landis' report:

"No patient can be seen outside of the dispensary by any member of the staff; nor can any patient who needs surgical treatment be operated on by any one connected with the Cornell Medical School. Unattached patients who seek advice and who are found to be ineligible are given the names of those physicians not connected with the dispensary, and told that they can consult any one of these physicians, but that they must make their own choice. If, on the other hand, they have a physician, they are urged to return to him. . . . The family budgets of all applicants are carefully graded in order to exclude any one who can afford the services of a private physician. Several instances occurred at the time of my visits in which service was denied because of the income. . . . Again several instances were brought to my attention in which a patient referred by a physician was found to have an income in excess of that which would make him eligible; such cases were promptly returned to their physicians. . . . At the present time the great majority of the people coming to the Clinic is composed of those who have had some long-standing ailment. . . . It is questionable whether the private physician was much injured by the loss of these patients. . . . The one distinct impression I obtained was that the physician who does honest work has nothing to fear from such a clinic; on the contrary, it will furnish him excellent consultant facilities for those of his patients who can afford a small fee only. . . . In my opinion the public as a whole prefers going to a private physician rather than to a public clinic. . . .

"As a result of my observations, I would say that there are three outstanding facts for consideration: 1. What shall be the attitude of the Association toward the sociological aspects of this experiment? This, it seems to me, is the outstanding feature. It may be that ultimately the present plan will need revision, but the question of principle will remain the same. 2. What answer is to be made to the profession if the experiment is successful? Most of the criticisms I have seen were made apparently on the assumption that such a plan was a menace to the doctor. The rights of the public seem to have escaped their attention. Careful consideration will show that the doctor doing good work has nothing to fear. On the other hand, there is no gainsaying the fact that the shiftless practitioner will most certainly be injured. 3. Can such clinics, granting that the experiment is successful, be recognized safely outside of the jurisdiction of accredited hospitals? Conducted by a group of individuals solely for gain, they might be misused."

The summary of Dr. Landis' report records an individual investigation of the subject of one pay clinic; and as these forms of practice have developed rapidly and concern the private practitioner and his professional and economic status for good or evil, according to the relationship which exists between him and them, the Board believes that the Association should attempt to establish the fundamental principles and policies for the conduct of these forms of practice, if they are to continue. Therefore, the Board recommends that a survey be made of the existing pay clinics, diagnostic clinics and group practice, so that there may be a basis on which to outline such principles and policies as would assure greatest good to the public and to the general practitioner. As this matter includes both ethical questions and matter pertaining to hospitals, clinics, etc., the Board recommends that this work should be conducted jointly by the Judicial Council and the Council on Medical Education and Hospitals.

The latter is making a survey of dispensaries, outpatient departments and group clinics, a report of which will appear in the Hospital Number of The Journal. It experienced some difficulty in securing a complete list of groups, apparently because of the confusion as to what constitutes "group practice"; also, some groups, it appears, do not have, or hesitate to furnish, the information asked for. However, thus far the Council has learned of 139 group clinics. Definite information is being obtained from each, including the number of patients treated annually, classes of people treated and, especially, the names of those who make up the groups. In addition, each group is asked for a general statement in regard to the diagnostic service rendered to other physicians in the community. So far as reports have been received, it appears that this service for other physicians is quite generally provided.

American Red Cross

At our annual meeting in November, 1921, the secretary of the Board reported the result of a conference with the vice chairman of the Central Committee of the American Red Cross, in regard to the present and proposed future activities of that organization in public health work. He also presented a copy of a letter written by him to the vice chairman of the Central Committee of the American Red Cross, in which the opinion was expressed that the time had arrived when the American Red Cross should cease its public health activities and should restrict its work to the relief of disabled ex-service men in the hospitals and in their homes, in addition to the purposes for which it was originally organized, as designated in its charter. The Board approved the action of the secretary and endorsed the opinions expressed by him in the letter referred to. Apparently, the Central Committee of the American Red Cross has not modified its public health program. It is the opinion of the Board that the Association, through the House of Delegates, should take appropriate action to convince those in authority that the public health activities of the American Red Cross are no longer necessary and if continued are likely to promote community irresponsibility and helplessness in regard to its own welfare.

Bulletin

As one of the means of securing more practical and intimate cooperation between the officers of the component societies and of the constituent associations and the officers of the American Medical Association, the Board of Trustees has directed that the American Medical Association Bulletin—originally started as a Councilor's Bulletin but in more recent years utilized to distribute full reports of the Council activities, conferences and similar matters—shall be issued under the editorship of the Secretary and the Field Secretary of the Association. The purpose is to devote the Bulletin to a full and free interchange of opinion on organization subjects and related topics, including economic, social and ethical questions pertaining to the practice of medicine. Not the least of its functions, however, will be to develop better and more effective organization.

Lay-Medical Magazine

The Board of Trustees and its Executive Committee have discussed the subject of the proposed lay-medical magazine on several occasions, but the Board is not prepared at this time to make a report. However, a conference has been arranged for May 19 and 20, in St. Louis, between the Council on Health and Public Instruction and the Board of Trustees, for the purpose of discussing the subject in full.

GORGAS MEMORIAL

Mr. H. de Joannis of Panama appeared before the Board of Trustees at its November meeting, and presented an outline of the proposition for a memorial to be erected to Major-General Gorgas at Panama. Mr. Joannis' mission before the Board was to secure the cooperation of the American Medical Association with the officers and directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine at Panama. After discussion, the Board unanimously approved of the proposition, gave assurance that the American Medical Association would cooperate in the work, and instructed the Secretary of the Board to notify Dr. Braisted, the chairman of the Gorgas Commission, that the American Medical Association was willing to cooperate. The matter came before the Executive Committee at its meeting in December, through a letter received from Dr. Braisted suggesting that a committee be appointed to represent the Association. The Executive Committee recommended to the Board that such a committee be appointed and, the Board approving, the matter was referred to President Work, who appointed Dr. George E. de Schweinitz of Philadelphia, Dr. Charles W. Richardson of Washington, D. C., and Dr. Fred B. Lund of Boston as a committee to represent the American Medical Association and to act in an advisory capacity to the Board of Trustees.

INTERNATIONAL CONGRESS OF HYGIENE AT STRASBOURG

A request was made by Dr. Haven Emerson, through the President-Elect, Dr. de Schweinitz, for the cooperation of the American Medical Association in promoting the work of the International Congress of Hygiene at Strasbourg in the spring of 1923. The matter is referred to the House of Delegates, with the suggestion that this international congress be endorsed by the House, and that volunteers be encouraged to attend the congress.

LEGAL DEFENSE INDEMNITY IN MALPRACTICE SUITS

The Board of Trustees has had under consideration the need of cooperation between the committees on medical defense in the various states through what might be called the Legal Defense Department of the Association, under the jurisdiction of a legislative bureau. The Board is not yet ready to make a definite, final report as to just how this work shall be undertaken, but heartily commends the idea and asks the endorsement of the House of Delegates, to put the proposition into effect in a reasonable time.

FIELD SECRETARY

The Board for a long time has felt that there should be closer personal touch between the component county and constituent state associations and the central body than has prevailed heretofore. The many details connected with the secretary's functions at headquarters have made it impossible for him to do full justice to this phase of organization work. Therefore, the Board, acting under its new authority, looked for some one to take up this field work. Last November, after careful consideration on the part of the Board, the position was offered to, and accepted by, Dr. Olin West, of Nashville, Tenn. Dr. West for twelve years has been executive secretary of the Tennessee State Board of Health and for ten years secretary of the Tennessee State Medical Association. He is a man who, we believe, is thoroughly competent to fill the position. He reported for duty on April 15, and we bespeak for him the cooperation of the officers and members of the organization.

Respectfully submitted.

A. R. MITCHELL,
D. CHESTER BROWN,
OSCAR DOWLING,
CHARLES W. RICHARDSON,
W. T. SARLES,
WALTER T. WILLIAMSON,
FRANK BILLINGS,
WENDELL C. PHILLIPS,
THOMAS MCDAVITT.

ADDENDA TO TRUSTEES' REPORT

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

TABLE 2.—The number of physicians in the United States (based on the Seventh Edition of the American Medical Directory), the number receiving THE JOURNAL, and the approximate percentage in each state are indicated below. The copies to the U. S. Army, U. S. Navy, U. S. Public Health Service, etc., are not included:

State	Physicians in State 7th A. M. Directory	Number Receiving JOURNAL	Approximate Percentage 7th A. M. Directory
Alabama	2,405	798	33
Arizona	380	246	65
Arkansas	2,450	640	26
California	6,766	4,138	61
Colorado	1,817	1,004	55
Connecticut	1,729	1,109	64
Delaware	262	159	60
District of Columbia	1,689	640	38
Florida	1,281	587	46
Georgia	3,406	1,033	30
Idaho	353	258	47
Illinois	10,651	6,842	64
Indiana	4,446	1,989	45
Iowa	3,536	1,972	56
Kansas	2,550	1,273	50
Kentucky	3,323	1,047	31
Louisiana	2,001	1,045	52
Maine	1,105	513	46
Maryland	2,364	1,448	61
Massachusetts	5,959	3,842	64
Michigan	4,593	2,510	55
Minnesota	2,628	1,851	70
Mississippi	1,761	558	32
Missouri	5,921	2,574	43
Montana	620	340	55
Nebraska	1,965	1,114	57
Nevada	147	88	60
New Hampshire	641	370	57
New Jersey	3,260	2,180	67
New Mexico	529	243	46
New York	16,284	9,026	55
North Carolina	2,236	995	44
North Dakota	556	372	67
Ohio	8,092	3,932	49
Oklahoma	2,622	982	37
Oregon	1,145	582	51
Pennsylvania	11,348	6,782	60
Rhode Island	778	444	57
South Carolina	1,452	561	39
South Dakota	658	385	59
Tennessee	3,328	1,060	32
Texas	6,205	2,471	40
Utah	496	319	64
Vermont	594	278	47
Virginia	2,545	1,118	44
Washington	1,797	996	55
West Virginia	1,717	931	54
Wisconsin	2,750	1,814	66
Wyoming	267	165	62

The number of Fellows and of subscribers (not including advertisers, exchanges, libraries, colleges, etc.) on THE JOURNAL mailing list each year, beginning with 1900, are here given:

Year	Fellows	Subscribers
January 1, 1900	8,445	4,633
January 1, 1901	9,841	8,339
January 1, 1902	11,107	10,795
January 1, 1903	12,553	12,378
January 1, 1904	13,899	14,674
January 1, 1905	17,570	15,698
January 1, 1906	20,826	17,669
January 1, 1907	26,255	20,166
January 1, 1908	29,382	20,880
January 1, 1909	31,999	18,983
January 1, 1910	33,032	19,832
January 1, 1911	33,540	20,504
January 1, 1912	33,250	21,620
January 1, 1913	36,082	19,863
January 1, 1914	39,518	19,751
January 1, 1915	41,254	20,430
January 1, 1916	41,938	22,921
January 1, 1917	42,744	22,156
January 1, 1918	43,420	23,117
January 1, 1919	42,366	24,687
January 1, 1920	44,340	30,032
January 1, 1921	46,669	31,347
January 1, 1922	48,937	30,175

SUBSCRIPTION DEPARTMENT

Table 1.—The following table indicates the number of copies printed each week, the total number for the year and the weekly average:

January 1	80,981		July 2	80,240	
January 8	80,555		July 9	80,365	
January 15	80,442		July 16	80,626	
January 22	81,553		July 23	80,454	
January 29	80,775		July 30	80,983	
		404,306			402,668
February 5	80,900		August 6	80,082	
February 12	80,546		August 13	80,708	
February 19	81,191		August 20	80,268	
February 26	81,278		August 27	80,379	
		323,915			321,437
March 5	80,934		September 3	80,099	
March 12	80,907		September 10	80,508	
March 19	80,477		September 17	80,216	
March 26	80,515		September 24	80,121	
		322,833			320,944
April 2	80,516		October 1	80,425	
April 9	80,156		October 8	80,515	
April 16	80,498		October 15	80,628	
April 23	80,736		October 22	85,569	
April 30	80,471		October 29	85,790	
		402,377			412,927
May 7	80,406		November 5	85,400	
May 14	80,573		November 12	85,253	
May 21	88,963		November 19	85,468	
May 28	80,491		November 26	85,347	
		330,433			341,468
June 4	80,417		December 3	85,358	
June 11	80,472		December 10	80,481	
June 18	80,394		December 17	80,813	
June 25	80,442		December 24	80,532	
		321,725	December 31	80,644	
					407,828
Total				4,312,861	
Weekly average				81,374	

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ending December 31, 1921

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1920		$295,554.41
Interest—Bonds	$12,745.00	
Interest—Uninvested balance	373.19	
		$ 13,118.19
Reserve Fund as at December 31, 1921		$308,672.60

TREASURER'S GENERAL ACCOUNT

Balance as at December 31, 1921	$ 265.34

DAVIS MEMORIAL FUND

Bonds as at December 31, 1920		$ 3,708.25
Bank Balance December 31, 1920	$ 138.79	
1921 Interest on Bonds	170.00	
1921 Interest on Bank Balance	6.11	
		$ 314.90
Total Fund as at December 31, 1921		$ 4,023.15

AUDITOR'S REPORT

Chicago, January 30, 1922.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.
Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1921, and have prepared therefrom the following statements which are appended hereto.

Balance Sheet as at December 31, 1921	Exhibit "A"
Income Account for the year ended December 31, 1921	Exhibit "B"
Journal Operating Expenses—Year 1921	Schedule "1"
Association and Miscellaneous Expenses—Year 1921	Schedule "2"

The Balance Sheet submitted properly presents, in our opinion, the financial position of the Association as at December 31, 1921, and the Income Account, the results of the operations of the Association for the year then ended; subject to the remark that no provision has been made for accrued interest, taxes and "Journal" subscriptions paid in advance, and that no valuation has been placed on subscriptions and memberships due and unpaid.

We verified the cash in bank by certificates received from the several depositories and that on hand by actual count. We also inspected the securities for the investments of the Association Reserve Fund and found them in order; these securities are stated at cost, without regard to the market value prevailing at December 31, 1921.

The Surplus Fund of the Association has increased since December 31, 1920, $132,658.73, representing the net income for the year 1921. This increase is spread over the assets and liabilities as follows:

Increase in Fixed Assets		$ 4,222.05
Increase in Current and Working Assets		200,878.09
		$205,100.14
Less:		
Decrease in Prepaid Expenses	$53,072.66	
Increase in Accounts Payable	14,891.03	
Increase in Advance Payments	4,477.72	
		$ 72,441.41
Net Increase		$132,658.73

During the course of the audit we made an exhaustive test of the various sources of income and verified the expenditures against properly approved vouchers on file. We are pleased to report that the accounts are well and accurately maintained.

Yours truly,

Marwick, Mitchell & Co.

EXHIBIT "A"

Balance Sheet as at December 31, 1921

Assets:			
Property and Equipment at Cost, less Depreciation:			
Real Estate and Buildings			$195,337.88
Machinery			52,402.49
Type and Metal			6,862.13
Furniture and Equipment			17,035.84
Chemical Laboratory			2,142.57
Library			662.53
Total Property and Equipment			$274,443.44
Reserve Fund Investment:			
Government and Railroad Bonds—at Cost		$287,624.05	
Funds in Bank Awaiting Investment		21,048.55	
			$308,672.60
Current Assets:			
Cash in Bank and on Hand		$ 36,361.51	
U. S. Government Securities		200,000.00	
Notes Receivable		1,546.72	
Accounts Receivable:			
Advertising	$61,402.74		
Cooperative Medical Advertising Bureau	6,946.47		
Reprints	4,110.93		
Miscellaneous	10,371.52		
		$ 82,831.66	
Inventory of Materials, Supplies and Work in Progress		$ 74,995.97	
			$395,735.86
Prepaid Expenses:			
Insurance Premium		$ 2,132.99	
Session—1922 Expenses		726.45	
			$ 2,859.44
Total			$981,711.34
Liabilities:			
Accounts Payable:			
Cooperative Medical Advertising Bureau			$ 5,077.52
Miscellaneous			30,568.31
			$ 35,645.83
Advance Payments on Publications			15,039.21
Association Reserve Fund (invested as noted above):			
Amount thereof as at December 31, 1920		$295,554.41	
Interest received on Bonds owned and uninvested cash—Year 1921		13,118.19	
			$308,672.60
Surplus Fund:			
Amount thereof as at December 31, 1920		$489,694.97	
Net Income for the Year ended Dec. 31, 1921		132,658.73	
			$622,353.70
Total			$981,711.34

EXHIBIT "B"
INCOME ACCOUNT

For the Year Ended December 31, 1921

Journal:		
Gross Earnings:		
Fellowship Dues and Subscriptions		$ 451,711.85
Advertising		569,078.88
Jobbing		17,663.81
Reprints		6,287.84
Books		9,999.23
Insignia		4,394.98
Miscellaneous Sales		9,085.53
Interest		8,540.49
Gross Earnings from Journal		$1,076,762.61
Operating Expenses, Schedule "1"		826,576.25
Net Earnings from Journal		$ 250,186.36
Miscellaneous Income:		
Rents	$ 3,000.00	
Special Journals	6,768.94	
Cooperative Medical Advertising Bureau	672.56	
Miscellaneous	15,436.97	
		$ 25,878.47
Net Earnings from Journal and Mis. Income		$ 276,064.83
Association Expenses, Schedule "2"	$92,238.51	
Less—Session 1921	2,237.50	
	$90,001.01	
Miscellaneous Expenses, Schedule "2"	53,405.09	
		$ 143,406.10
Net Income		$ 132,658.73

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

For the Year Ended December 31, 1921

Wages and Salaries			$325,157.96
Editorial, News and Reporting			10,812.83
Paper—Journal Stock			292,973.73
Paper — Miscellaneous			16,939.97
Electrotype			15,638.67
Binding			437.94
Ink			8,138.56
Postage—First Class			21,757.66
Postage—Second Class			38,673.22
Journal Commissions			8,039.90
Collection Commissions			1,157.06
Discounts			20,092.38
Express and Cartage			3,892.42
Exchange			3,814.37
Office Supplies			1,552.06
Telephone and Telegraph			1,634.92
Office Jobbing			7,066.32
Power and Light			4,384.88
Fuel			4,856.32
Factory Supplies			11,086.49
Repairs and Renewals—Machinery			4,180.14
Bad Debts—Net			1,763.53
Miscellaneous Operating Expenses			13,598.60
			$817,649.93
Depreciation of Property and Equipment:			
Machinery	10%	$5,822.50	
Furniture and Equipment	10%	1,513.84	
Factory Equipment	10%	479.03	
Type	15%	508.50	
Metal	15%	702.45	
			$ 8,926.32
Total			$826.576.25

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

For the Year Ended December 31, 1921

Association Expenses:	
Association	$ 32,487.22
Health and Public Instruction	12,828.67
Pharmacy and Chemistry and Chemical Laboratory	21,864.91
Medical Education and Hospitals	20,825.78
Organization	3,373.03
Therapeutic Research	620.84
Laboratory Depreciation—10%	238.06
Total Association Expenses	$ 92,238.51
Miscellaneous Expenses:	
Insurance and Taxes	$ 8,814.03
Legal and Investigation	678.00
Sundry Publications	18,738.03
Building "B" Depreciation—5%	7,196.52
Building "B" Expense	2,605.94
Library Depreciation—10%	73.62
Miscellaneous	15,298.95
Total Miscellaneous Expenses	$ 53,405.09

Report of the Judicial Council

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Report of Officers:

To the Members of the House of Delegates of the American Medical Association:

During the past year, the Judicial Council has received a number of communications asking for opinions on subjects dealing largely with questions of ethics. In the majority of instances, it has felt obliged to refrain from giving opinions for the reason that the subject matter presented did not properly come within the jurisdiction of the Council as now defined in the By-Laws of the Association. The fact that so many communications of the character mentioned have been received is an indication that the idea is rather prevalent that it is a function or a duty of the Judicial Council to act in such matters. It also indicates the need of some tribunal to which members or Fellows and local or state organizations may appeal for opinions on matters of an ethical nature which may affect members of the profession, individually or collectively, or which may involve their relations to the public.

Logically, it would seem that all such matters should be referred to the Judicial Council and that authority should be given the Council in the By-Laws to act. Should the House of Delegates concur in this view, we recommend that the By-Laws be amended so as to extend the jurisdiction of the Judicial Council to include all such matters. It is perfectly obvious that the Judicial Council should have original jurisdiction in all matters relating to the Scientific Assembly and to Fellowship therein. We recommend, therefore, that Section 1, Article IX, of the By-Laws be amended to read:

> This power shall extend to and include (1) all questions involving Fellowship in the Scientific Assembly or the obligations, rights and privileges of Fellowship; . .

the section to continue as at present except for necessary renumbering.

We also offer the following amendment to be inserted immediately preceding the final paragraph of Section 1, Article IX:

> The Judicial Council shall have jurisdiction in all questions of ethics and in the interpretation of the laws of the organization.

Many of the questions submitted to the Council involve the subject of advertising. As is well known, there is a marked tendency of late for physicians to organize themselves into so-called groups under various designations or titles, such as group clinics, diagnostic clinics, group medicine, medical institutes, the (blank) medical academy, and similar names. Unfortunately some of these groups are advertising in a manner that would be considered most reprehensible if done by an individual physician. The Council has given much thought to this subject. It is unable to see any difference in principle between a group of physicians advertising themselves under whatsoever title they may assume and an individual physician advertising himself. As a result of their deliberations on the subject, the Council adopted the following resolution, which if approved by the House of Delegates is offered as an amendment to Section 4, Article I, Chapter II, of the Principles of Medical Ethics:

> Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and specially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.
>
> It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

There is now pending before this House of Delegates a proposed amendment to Section 2, Article V., of the Constitution to make the ex-Presidents of the Association *ex-officio* members of the House of Delegates. We recommend that the amendment read as follows:

> The Trustees, the ex-Presidents of the Association and the members of the several Councils shall be *ex-officio* members of the House of Delegates without the right to vote, provided that members of the Councils who are also elected delegates may exercise all of the rights of elected delegates.

ADVERTISING MEDICAL INSTITUTIONS

There was submitted to the Council an inquiry as to whether a given advertisement of a certain medical institution, which the said institution desired to run in the public press, was ethical or unethical, and if not ethical, wherein specifically it was unethical. The answer to this question cannot be based solely on the wording of the advertisement, but the advertisement must be considered in connection with the institution presenting it. It is perfectly evident that an advertisement which would be proper under one set of conditions might be highly improper under a different set. The institution in question was organized a short time ago by a group of public spirited citizens as a stock company for profit, the purpose of the organization being to treat patients suffering with venereal diseases. The advertisements carried in the lay press by the institution were for a time, to say the least, flagrant violations of medical ethics. After several interviews with the incorporators of the institution by representative members of the medical profession, the form of the organization was changed from that of an organization for profit to that of an organization not for profit, and a desire is now expressed by the directors of the organization to have its lay advertisements conform to medical ethics.

The first question to be answered is: Is the institution itself ethical? Ethics relates to conduct. There is no difference in principle between medical ethics and ethics in general. Conduct has to do not simply with the outward or visible acts of a person, but it has a more comprehensive meaning and relates to the general line of a person's—or in this case a corporation's—moral proceedings. The proceedings, then, of this institution must be analyzed as to its effects on the people it treats, the medical profession, and the community in general. The organizers of the institution undoubtedly were of the opinion that there was a great need for just such an organization, based on the belief that there are a great many individuals suffering with venereal diseases; that these cases are not properly treated by physicians; and that there is no provision made by the profession for the treatment of those suffering with these diseases who are unable to pay the usual fees for such services. The need of such an institution is denied, on the grounds that the medical profession is perfectly competent to treat and is so treating this class of cases, and furthermore, ample provision has long been in existence for the free treatment of those persons who are unable to pay or for very nominal fees from those who may be able to pay something. Hence the need for this institution did not exist.

It was decided long ago that the practice of law by a corporation was against public policy and the same has been prohibited by law in many states. The relations between patient and physician are more intimate than are those between client and attorney. It is impossible for that intimacy of relationship to exist between an individual and a corporation, and if it is against public policy for a corporation to practice law, how much more so must it be for a corporation to practice medicine?

Many persons imbued with an altruistic spirit are often led to do things which a more careful analysis would have convinced them was not really altruistic, for that which is altruistic must be for the common good, and therefore could not be against public policy. But how can a corporation organized for the purpose of treating disease and relieving human suffering be against public policy? Certainly not in its intentions nor in the good which it might do to a few. It must be, therefore, in the fact that the harm which it does to the community as a whole outweighs the good which it may do to a few. When an individual (or a corporation) starts out to do good he should consider carefully whether the immediate good done is not more than outweighed by ultimate harm to those supposed to be benefited as well as harm to those composing another group in society, or to society as a whole. In the present case, the institution does harm to the individual, to the medical profession, and to the community. No direct harm can be said to be done to the ndividual by treating him for his venereal disease free or for a very nominal sum if he is honestly unable to pay for his services, but when this same treatment is given to individuals who are able to pay legitimate fees to physicians as s constantly being done by this institution, then great harm s done, not only to the individual, but also to physicians and to the community. To give at public expense that for which the individual is able to pay is an ultimate harm, notwithstanding the fact that to some it may appear to be an mmediate good. It is not a charity to provide for those who are able to provide for themselves because it relieves those ndividuals of a part of their obligations in life which it is heir duty to fulfil. It certainly needs no argument to show hat mistaken charity of that kind, if carried to any extent, must inevitably lead to decadence of the people.

The direct harm done the medical profession by an instiution of this kind cannot be overlooked, nor is it an evidence of selfishness on the part of physicians to attempt to defend hemselves against such gross injustice. If it be admitted —and we think no one will attempt to deny it—that men possessed of superior medical knowledge are essential to the welfare of the community, it must be granted that anything which is detrimental to the profession unless it contribute to the public good—such as all forms of preventive medicine, etc.—must be detrimental to the community as a whole. It is well known that the medical profession has always been foremost in every thing which would in any way contribute to the prevention of disease and human suffering, and it has never failed to respond willingly and freely to the needy sick, but it should not be forgotten—which sometimes seems to be the case—that it costs more time, effort and money for a physician to become competent in his profession, and to keep up with the rapid advancements of knowledge, than it does one in any other line of human endeavor. Such an investment is certainly entitled to a reasonable return. No business man would think of putting the same amount of energy and money into an enterprise without the hope and expectation, and in fact without the certainty so far as business acumen could figure out, of ample financial returns. Why then should a group of business men themselves engaged in lucrative pursuits deliberately attempt to deprive medical men of a legitimate return on their investment? They are hiring young physicians and paying them compensation for their services, which they then give or sell for a nominal price to many who are able to pay a legitimate fee to regular physicians. We grant that they believe they are doing that which is for the public good, but we believe that if they will analyze the question in all its sociological aspects, they will see their error.

It is neither charity nor is it justice to take from one class that to which they are entitled and give it to those who are undeserving of it. Much more might be said concerning the character of the work done by this institution and its harmful effect on the community in general, but we believe that sufficient facts have been brought out to warrant us in expressing our opinion that the said institution is acting against public policy and therefore cannot be considered ethical. There is no difference in principle between lawful and unlawful and ethical and unethical. That which is unlawful cannot lawfully advertise its business, and that which is unethical cannot ethically advertise its business, be the wording of the advertisement what it may.

Respectfully submitted.

M. L. Harris, Chairman,
Randolph Winslow,
William S. Thayer,
I. C. Chase,
J. N. Hall,
A. R. Craig, Secretary.

Report of the Council on Health and Public Instruction

Dr. Victor C. Vaughan, Washington, D. C., Chairman, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Council has continued during the past year, to develop, so far as possible, its program as outlined in previous reports and as approved by the House of Delegates.

The function of the Council as stated in the By-Laws includes: (1) defense of scientific research; (2) legislation; (3) public health, and (4) education of the public.

Defense of Research

Under the first heading the Council, through its Committee on Defense of Scientific Research, has kept track of any efforts for the passage of bills in various legislative bodies restricting scientific investigation. The so-called "Meyers Dog Bill," which was adversely reported on by the Senate committee at the last session of Congress, was reintroduced at the present session, but no serious effort has been made to pass it. The usual antivivisection bill introduced in the New York legislature made no headway. In Colorado, an antivivisection bill has been ordered on the ballot at the November election by petition, and will be subject to a referendum vote. The Council has cooperated with the state committees in each state in which legislation along this line was proposed.

One of the most valuable contributions to the popular literature on this subject appeared in the *Woman's Home Companion* for July, 1921, in the form of an article by Mr. Ernest Harold Baynes, the well known naturalist and animal lover. The publication of this article, which was due entirely to the broad-mindedness and personal courage of Miss Gertrude B. Lane, editor of the *Woman's Home Companion*, created a marked sensation, as it exposed the dishonesty and ignorance of the professional antivivisection agitators. Following the publication of this article, Miss Lane was deluged with letters of approval. These letters have been turned over to the Secretary of the Council, and a reprint of Mr. Baynes' article, containing some of the most representative letters on both sides, is now being prepared. The Council recommends that a resolution of appreciation and thanks to Mr. Baynes and Miss Lane be formally adopted and entered on the records.

The Committee on Defense of Medical Research as early as 1909 formulated a series of rules regarding the treatment of animals in experimental work which have been formally adopted as a code of conduct in every medical school and medical research institution in the United States. During the past year these rules have been adopted in nearly all the veterinary schools in the United States where animal experimentation is carried on and by the boards of health in twenty-eight states.

Another activity of the Committee on Defense of Medical Research that has been carried on during the past year has been the securing of adherence to an "Open Door" policy. One of the most effective statements made by antivivisectionists to arouse feeling against animal experimentation is that it is conducted "in secret," "behind locked doors," where no outsider can know the "cruelties" that are being inflicted. In a number of the larger institutions throughout the country where medical research was being actively carried on, this charge had been met by a public declaration that responsible officials of humane societies were welcome to the laboratories and would be shown the work that was going on. In one institution a proviso was made that the persons invited to the laboratories must first have seen an operation on a human being. Since the rules regarding animals had been universally adopted in medical schools and medical research institutions it was felt that the next step in strengthening the position of medical investigators before the public was to show that there was no reason for the antivivisectionists' slogan, "Open Door." Accordingly efforts were made to learn whether institutions in which animal experimentation was being carried on would admit as visitors accredited members or responsible officials of humane societies. The response to these efforts has been most gratifying.

Returns have now been received from every medical school in the United States except one, and from all the medical research institutions, agreeing to the "Open Door" policy. In some instances the requirement of previously witnessing an operation on a human being is made a condition for visiting the laboratories. In all places the laboratories are open to representatives of humane societies at any time. This agreement on the part of laboratory directors and faculties of medicine throughout the country emphasizes the claim, which the defenders of research have repeatedly made, that animal experimentation is subject to the ordinary procedures of the law against cruelty to animals. It also effectually removes the basis for suspicion that there is something secret about the work done in medical laboratories.

The committee feels that medical research is in a very strong position throughout the country and that any claim for special legislation hostile to animal experimentation can now be effectively met.

Legislation

NATIONAL LEGISLATION PROPOSED DURING THE YEAR

Legislation of any kind in this country naturally divides itself into federal and state legislation. During the past year Congress has been in session practically all of the time with the exception of a few brief recesses. As usual, many bills have been introduced bearing on public health and on questions of interest to physicians. The following tabulation includes the more important bills presented on these subjects:

H. R. 4.—Pensions for Nurses in Spanish War; passed House, Feb. 1, 1922.

H. R. 22.—Promotion of Physical Education; Mr. Fess; April 11; Education.

H. R. 116.—Issuance of Doctors' Licenses to Practice in All States; Mr. Mason; April 11; Interstate and Foreign Commerce.

H. R. 258 }
H. R. 259 } Investigation of Narcotic Addition in U. S.; Mr. Volk; Jan. 4, 1922.

H. R. 2366.—Protection of Maternity and Infancy; Mr. Towner; April 12; Interstate and Foreign Commerce.

H. R. 2918.—Regulation of Osteopathy, D. C.; Mr. Smith; April 13; District of Columbia.

H. R. 4104.—Free Distribution of Antirabic Virus; Mr. Baker; April 18; Appropriations.

H. R. 4109.—Destruction of Animals Affected with Rabies; Mr. Baker; April 18; District of Columbia.

H. R. 4118.—Prevention of Venereal Diseases, D. C.; Mr. Baker; April 18; District of Columbia.

H. R. 5033.—Supplemental to National Prohibition Act; Mr. Volstead; April 25; Judiciary (see also H. R. 6752; H. R. 7294).

H. R. 5680.—Free Postal Privileges for Literature of State Health Departments; Mr. Clark; May 3, 1921; Post Offices and Post Roads.

H. R. 6566.—Reductions on Income Tax for Medical Expenses; Mr. Rosenbloom; May 24; Ways and Means.

H. R. 7159.—Authorizing Former Army Medical Officers to Practice in Any Territory; Mr. Patterson; June 15.

H. R. 7294.—Supplemental to National Prohibition Act; became a Law, Nov. 18, 1921.

H. R. 7570.—Regulation of Optometry, D. C.

H. R. 8566.—To Recognize and Promote Efficiency in the U. S. Public Health Service; Mr. Dyer; October 7; Interstate and Foreign Commerce.

H. R. 9234.—Sutures and Surgical Ligature Material in Interstate Commerce; Mr. Johnson; Nov. 21, 1921; Interstate and Foreign Commerce.

H. R. 9291.—To Reorganize and Promote the Efficiency of the U. S. Public Health Service; Mr. Dyer; Dec. 5, 1921; Interstate and Foreign Commerce (see H. R. 9775).

H. R. 9490.—Medical Service for Coast and Geodetic Survey; Mr. Winslow; Dec. 12, 1921; Interstate and Foreign Commerce.

H. R. 9546.—Accident Compensation, D. C.

H. R. 9775.—To Reorganize the U. S. Public Health Service; Mr. Newton; Jan. 6, 1922; Interstate and Foreign Commerce.

H. R. 10030.—Promotion of Safety of Employees and Travelers upon Railroads; Mr. Bland; Jan. 20, 1922; Interstate and Foreign Commerce.

H. R. 10075.—Deportation of Aliens Convicted of Traffic in Drugs or Narcotics; Mr. McArthur; Jan. 23, 1923; Immigration and Naturalization.

SENATE BILLS

S. Joint Res. 130.—Monument to General Gorgas; Mr. Heflin; October 20; Library.

S. 206.—Prohibition of Exportation of Opium; Mr. Jones; April 12; Finance.

S. 408.—Department of Social Welfare; Mr. Kenyon; April 12; Education and Labor (see also S. 1607).

S. 525.—Sanitary Reserve Corps in U. S. Public Health Service; Mr. Owen; April 12; Military Affairs.

S. 526.—Department of Health; Mr. Owen; April 12; Appropriations.

S. 624.—Regulation of Chiropractic, D. C.; Mr. Fletcher; April 13; District of Columbia.

S. 749.—Regulation of Osteopathy, D. C.; Mr. Capper; April 13; District of Columbia.

S. 758.—Prohibiting Experiments on Living Dogs, D. C. and Territories; Mr. Meyers; April 15; Judiciary.

S. 812.—Regulation of the Practice of Medicine in D. C.; Mr. Cummins; April 13; District of Columbia (see also S. 2283).

S. 1039.—Protection of Maternity and Infancy, Mr. Sheppard; April 21; Education and Labor; passed, July 22.

S. 1039.—(Sheppard-Towner Bill) Promotion of the Welfare and Hygiene of Maternity and Infancy; became Law, No. 23, 1921.

S. 1588.—Prevention of Venereal Diseases, D. C.; hearings, October 13 and 20.

S. 1591.—Amendment of Incorporation of D. C. Medical Society; passed Senate, Dec. 9, 1921.

S. 1607.—Department of Public Welfare; Mr. Kenyon; May 5; Education and Labor; No. 3.

S. 1839.—Department of Public Welfare; Mr. McCormick; May 18; Education and Labor.

S. 2822.—Practice of Optometry, D. C.

S. 2283.—Regulation of Practice of Medicine and Midwifery, D. C.; Mr. Ball; July 19, District of Columbia.

S. 2764.—To Reorganize and Promote Efficiency in the U. S. Public Health Service; Mr. Watson; Nov. 22, 1921.

S. 3113.—Reducation of Number of Army Officers; Mr. Wadsworth; Feb. 3, 1922; Military Affairs.

S. 3120.—Deportation of Aliens Convicted of Traffic in Drugs and Narcotics; Mr. McNary; Feb. 3, 1922; Immigration.

S. 3078.—Free Transmission Through the Mails of Certain Publications for the Blind.

STATE LEGISLATION

Since January 1, the state legislatures have been in session in twelve states. These are:

New York
Rhode Island
South Carolina
Louisiana
Massachusetts
Virginia
Georgia
Kentucky
New Jersey
Maryland
Mississippi
New Mexico

In addition, the legislature will meet in Louisiana in May, and in Georgia in June. While many bills have been introduced in the state legislatures, no measure of importance to the medical profession of the country has been enacted.

This being the off year for the meetings of legislatures, the amount of legislation in general and of public health legislation in particular is naturally very much less than in the years in which most of the state legislatures hold their sessions. During the coming year of 1923, the legislature will meet in forty-three states and the amount of legislative matter bearing on public health and subjects of interest to physicians and, in fact, to the medical profession as a whole will be much greater than this year.

At the time of the creation of the Council at the St. Louis session in 1910, the legislative committee consisted of three members, appointed by the President, to which was added an auxiliary committee, consisting of one member in each state. At the Atlantic City session, held the previous year, as members of the House of Delegates will recall, it was proposed to unite in one permanent council all the existing committees and boards having to do with legislation, public education, organized defense of scientific research, etc. This action was taken at St. Louis in 1910. In the organization of the Council, legislation was made one of its functions. This has been one of the activities of the Council for the last twelve years. As its annual reports to the House of Delegates will show, it has repeatedly discussed legislative matters.

The question of the legislative policy of the American Medical Association came up squarely in the House of Delegates at the Minneapolis session in 1913, three years after the organization of the Council, at which time the question came before the House in the conflicting recommendations of the Council and of the Special Committee on a National Department of Health, as to whether the Association should take an active and aggressive attitude on legislative matters, organizing its members for the purpose of influencing legislation and maintaining a lobby in Washington for the promotion of legislative questions in which it was interested, or whether it should adopt the opposite policy of investigating proposed legislation and advising state societies and educating the public as to its advisability, leaving it to the legislative bodies to follow its advice or not as they saw fit. As members of the House of Delegates who were present at the Minneapolis session will recall, the policy of the Council was sustained by an overwhelming vote, and the House of Delegates definitely went on record as opposed to any expenditure of money for lobbying or for the influencing of legislation. This declaration on the part of the House of Delegates, which is found in the report of the Committee on Legislation and Political Action for the 1913 session, still stands as the approved policy of the Association on this subject.

Law is of two kinds, statutory and decisional. Statutes are specific acts adopted by legislative bodies. Decisions are rulings handed down by courts on the application of either statutory or common law to specific cases. The only decisions of special value are the decisions of supreme courts, since the decisions of lower courts may be and frequently are overruled. The difference between the function of the courts and the function of the legislature is very distinct. As an eminent judge once said in a decision, "It is the function of the courts to say what the law is and what it means. It is the function of the legislature to say what the law shall be." It is also the function of the court to say whether or not any particular statute is constitutional. Every legislative enactment may and frequently does come before a supreme court for a decision not only as to its constitutionality but also as to its actual meaning. The result is that the body of court decisions on a given subject forms the foundation for successful legislation. To attempt to draft a bill on any subject without knowing what the courts have already held to be sound law is to run the risk of putting in the bill provisions which the courts have already thrown out as unconstitutional. This field has been neglected by both the medical and the legal professions. Recognizing this situation, one of the first recommendations of the secretary of the Council, on its organization in 1910, was that the Council authorize the preparation of four digests on case law. This work the secretary has carried on as time permitted, for the last twelve years. The digest of supreme court decisions on "State Regulation of the Practice of Medicine," was completed and published in 1914. A digest of supreme court decisions on "Personal Responsibilities of Physicians" based on 3,000 supreme court decisions is now in the printer's hands. The third volume, containing aproximately 2,000 decisions on the "Powers and Duties of Health Agencies," is now compiled and ready for the printer. The fourth volume, on "Professional Malpractice," is still to be compiled, although most of the decisions on this subject have been collected. This material, if utilized, will be the foundation of an intelligent legislative program.

Regarding the distribution of information, this should come from a central and authoritative source and should be as widely distributed as possible. The National Health Council as stated in the Council's report to the House of Delegates for 1921, includes the ten leading national public health organizations of the country. It has undertaken as one of its activities the publication of a biweekly legislative bulletin, issued from the Washington office of the Council, containing information regarding all bills introduced in Congress or in any of the state legislatures, on all topics of interest to physicians and public health workers. The Council has subscribed for copies of this bulletin to be sent to the officers of the American Medical Association and of the state societies, in order that all those interested in legislative matters may secure accurate and complete information from the same sources.

Regarding the organization of machinery to carry on this work, the secretary at the November, 1921, Conference of State Secretaries proposed the following plan, which involves the coordination of existing rather than the creation of any new machinery:

1. A State legislative committee of which the chairman shall be the member of the National Legislative Committee. Each state committee made up of as many members as may be advisable but including the president, the secretary and the attorney for the state society as ex-officio members. This committee should have permanent headquarters and the necessary equipment to carry on its work.

2. The National Legislative Committee, made up of the chairmen of the state legislative committees, to meet at least once a year with the Council to map out a program for the coming year. The expenses of the committeemen in attending this conference to be paid either by the American Medical Association or the state society or both. This National Legislative Committee would be to the A. M. A. what the Republican and Democratic National Committees are to their parties.

3. The Council on Health and Public Instruction of the American Medical Association as the legislative committee of that body, charged with the responsibility for formulating the policy of the Association on national questions and of maintaining at the headquarters office a legislative laboratory in which material on legislative questions can be prepared for state legislative committees.

4. Frequent joint meetings of the legislative committees of neighboring states to be attended by the officers and committees of the groups of states and by the secretary of the Council for the discussion of conditions and plans. These conferences to be held long enough before the meetings of the state legislatures to allow ample time for carrying out any plans agreed on. The expenses of the members in attending these meetings to be paid by the A. M. A., the state societies paying a part, as and when they may be able to do so. These conferences would enable the state committees to agree on a united plan of action and would make it possible for the secretary of the Council to learn at first hand of conditions in each state and to tell each committee or group of committees what was going on in other states.

In accordance with this plan, the secretary arranged three conferences of the state legislative committees of those states in which the legislature was to hold sessions during the past winter. The legislative committee in each state was asked to participate in a joint conference, the traveling expenses of the members to be paid by the American Medical Association. The first conference was held in Baltimore, Dec. 28, 1921, being attended by the members of the legislative committees of the state medical societies of Maryland, Virginia and South Carolina. The second conference was held in New York City, the following day, December 29, at the Hotel Belmont. Members of the legislative committees from New York, Massachusetts, New Jersey and Rhode Island were present. The third conference was held in New Orleans, Thursday, Jan. 12, 1922, being attended by the members of the legislative committees of Louisiana, Mississippi, and Georgia.

At each of these conferences, the secretary presided and stated the object of the meeting, later calling for reports from the chairmen of each committee and for the personal views of each member present. The effect of these conferences was excellent, leading to a better understanding and showing the possibilities of closer cooperation between the headquarters office of the American Medical Association and the various state associations. The Council recommends that these conferences be continued and that plans be formulated for holding meetings of groups of state legislative committees between now and the first of January, 1923.

Narcotic Drug Committee

In its report to the House of Delegates at the Boston session, the Council presented the report of the Committee on Narcotic Drugs. The House of Delegates, in accordance with the recommendation of the reference committee, endorsed this report and recommended the continuance of the committee. The committee was accordingly continued. Dr. Haven Emerson, chairman of the committee, reports as follows:

Subcommittee on Narcotic Drugs: This committee has been active since September, and has had numerous meetings. March 2, a conference of twenty-seven representatives of the various professions and trade interests concerned in narcotic drugs was held in New York City, and as a result of that, an agreement was reached practically identical with the opinions expressed by the committee in its report last June, with regard to the contents of a model state antinarcotic drug law. A drafting committee is now at work, and within the next month or so the text of a proposed model law will be available for presentation to the Council.

Sects in Medicine

In its report to the House of Delegates at the Boston session, the Council asked that it be authorized to appoint a committee on sects in medicine. This request was approved, and the Council accordingly appointed as a committee Dr. J. B. Nichols, Washington, and the secretary of the Council. The committee is preparing a report which will be submitted later.

Smallpox and Vaccination

At the Boston session, the Council requested that it be authorized to appoint a committee to study the entire subject of the value of vaccination as a means of preventing smallpox. This recommendation was approved by the House of Delegates. The Council accordingly appointed a committee consisting of Dr. Haven Emerson, New York, Dr. George W. McCoy, Washington, D. C., and the secretary of the Council. Dr. Haven Emerson, chairman of the Committee, reports as follows:

Smallpox and vaccination: The subcommittee has met, discussed the general plan of the several leaflets to be published and has accumulated considerable material, but has been unable up to the present time to prepare text for publication.

Conference on Public Relations

In its report to the House of Delegates at the Boston session, the Council asked the House of Delegates to authorize it to call a conference in June or during the summer, at which would be discussed the present relations between the public and the medical profession with a view to formulating a plan for the organization of the public for health work. For various reasons, it did not seem wise to attempt to hold this conference during the summer. At the meeting of the Council in New York, Nov. 18, 1921, the secretary recommended that the question of the organization of the public be made the subject of the program for the midwinter conference. This recommendation being approved by the Council the following program was presented at the midwinter conference:

Thursday, March 9, 1922

MORNING SESSION

The Organization of the Public for Cooperation with the Medical Profession

Address, Victor C. Vaughan, M.D., Chairman, Council on Health and Public Instruction, Washington, D. C.
Lessons of the Past, Frederick R. Green, M.D., Secretary, Council on Health and Public Instruction, Chicago.
Organizing Physicians for the Conservation of Public Health, Holman Taylor, M.D., Secretary, State Medical Association of Texas.
Discussion.

AFTERNOON SESSION

Public Health from a Layman's Standpoint, Walter A. Jessup, President, Iowa State University, Iowa City, Iowa.
Organizing the Public with Physicians as Leaders, F. E. Sampson, M.D., President, Iowa State Conference of Social Work, Creston, Iowa.
Organizing Our State Societies for the Protection of Public Health, J. H. J. Upham, M.D., Chairman, Committee on Public Policy and Legislation of the Ohio State Medical Association, Columbus, Ohio.
Periodic Health Examinations, the Physician's Opportunity and Obligation, Haven Emerson, M.D., New York.
Discussion.

Health Problems in Education

The Committee on Health Problems in Education has been continued, with Dr. John M. Dodson, Chicago, as chairman. The report of this Committee is presented herewith as a subcommittee report.

Cancer Committee

At the meeting of the Council held in New York, Nov. 18, 1921, the Council authorized the appointment of the following committee to prepare material for the instruction of the medical profession on the "Early Signs and Symptoms of Cancer and Pre-Cancerous Conditions." The members of this Committee are: chairman, Dr. Joseph C. Bloodgood, Baltimore; Dr. John G. Clark, Philadelphia; Dr. R. B. Greenough, Boston; Dr. W. J. Mayo, Rochester, Minn.; Dr. E. A. Codman, Boston; Dr. D. C. Cheever, Boston; Dr. J. M. T. Finney, Baltimore; Dr. Harvey Cushing, Boston; Dr. Dean Lewis, Chicago; Dr. John Da Costa, Philadelphia, and Dr. J. B. Squier, Jr., New York. The report of this committee will appear later.

Educational Material Issued from May 1, 1921, to May 1, 1922

The following charts, pamphlets, cards, etc., have been printed:

Baby Welfare (Charts)			
Anthropometric Tables		3,000	
Posters		400	
Score Cards		20,000	
Total Charts			23,400
Baby Welfare (Pamphlets)			
Save the Babies		40,000	
Summer Care of the Babies		1,000	
			41,000
Conservation of Vision:			
III		1,000	
IV		1,000	
VII		1,000	
X		1,000	
XIII		1,000	
XV		1,000	
XVII		1,000	
			7,000
Health and Education:			
Health Essentials			10,000
Public Health:			
Cancer:			
I	1,000		
II	1,000		
III	1,000		
V	1,000		
VI	1,000		
VIII	1,000		
IX	1,000		
X	10,000		
		17,000	
Hookworm		20,000	
House Fly		1,000	
What You Should Know About Tuberculosis		32,500	
			70,500
Sex Education:			
Chums		5,000	
Life Problems		2,000	
			7,000
Miscellaneous:			
Social Responsibilities of Modern Medicine		1,000	
Why Should Births and Deaths be Registered?		5,000	
			6,000
Total pamphlets			141,500

Feb. 18, 1922, the secretary of the Council presented his resignation to the Council, with the request that it be made effective, March 31, 1922. At its meeting at the time of the nidwinter conference, the Council requested the secretary to lefer his resignation until after the St. Louis session. After considerable discussion, an agreement was finally reached whereby the Council voted unanimously to accept the resignation of the secretary, April 30, 1922.

Respectfully submitted.

Victor C. Vaughan, Chairman.
Milton Board. Haven Emerson.
Walter B. Cannon. W. G. Rankin.

Report of the Council on Medical Education and Hospitals

Dr. A. D. Bevan, Illinois, Chairman, presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

In its present report, the Council is referring to (*a*) the improvements made in undergraduate medical education up to the present time, (*b*) new problems which have arisen in medical education including the need of better facilities for graduate school instruction, and (*c*) work of the year by the Council in the organization of hospitals including a statement regarding outpatient departments, dispensaries and group clinics.

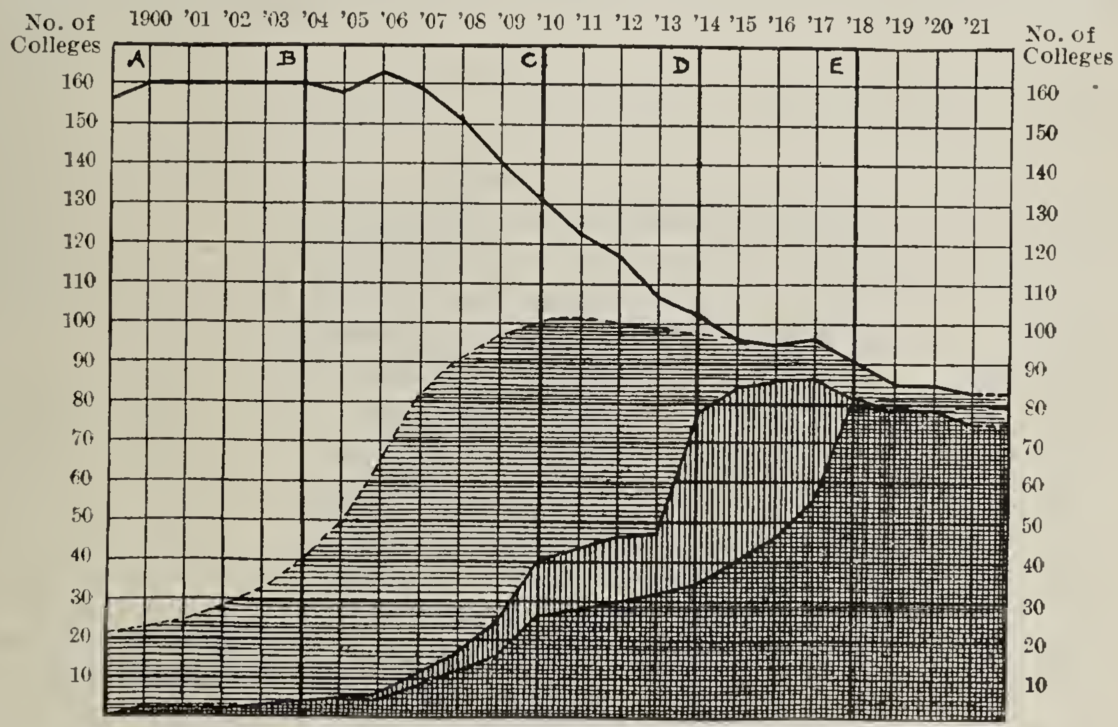
I. Present Status of Medical Education

As shown in previous reports, following the close of the Civil War the number of medical schools rapidly increased until in 1906 there were 162 in the United States or more than were to be found in all the rest of the world. The educational standards, however, in 1906 were considerably lower than those in other leading countries. Based on this information, the Council in 1906 ascertained that the need was for "fewer but better medical schools." One of its first measures, therefore, was to urge (*a*) the general adoption of higher standards for admission and (*b*) the merging of medical schools in cities where two or more existed. During the eighteen years since the Council was established, therefore, the number of medical schools has been reduced from 162 to eighty-two. This was largely through the merging of from two to seven colleges into one invariably stronger institution in a score or more of cities. At the same time, a number of seriously low-grade colleges were closed outright. Along with the rapid reduction in medical colleges there was a correspondingly rapid increase in the number of colleges putting into effect the higher entrance requirement, where, in 1904, only two medical schools were requiring any college work for admission. At the present time, however, seventy-five out of the eighty-two medical schools are requiring two or more years of college work for admission—which makes the entrance requirements of medical schools of the United States equal to or slightly in advance of those in other countries. These changes are graphically shown in Chart 1.

CHART 1.—FEWER BUT BETTER MEDICAL SCHOOLS

Although the total number of medical schools has been reduced, the number of those holding reasonably high entrance requirements has been greatly increased.

The total number of medical colleges each year is shown by the heavy descending line at the top. The light horizontal shading shows those which actually required a four-year high school education for admission; the vertical shading, those which required one year of collegiate work, and the heavy shading, those which required two or more years of collegiate work for admission.



	1900	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
Colleges	160	160	160	160	160	158	162	159	151	140	131	122	118	107	106	96	95	96	90	85	85	83	82
High Sch.	158	158	158	157	156	153	156	148	135	116	91	80	72	60	24	12	10	10	9	6	6	7	7
1 Yr. Coll.	..	..	..	..	..	..	1	2	5	8	13	14	16	16	44	44	38	30	1	..	..	..	..
2 Yrs. Coll.	2	2	2	3	4	5	5	9	11	16	27	28	30	31	34	40	47	56	80	79	79	76	75

Five epochs, or stages, in the campaign for improvement are indicated in the above chart. In 1900 (A) the Journal of the American Medical Association began collecting and publishing educational statistics. In 1904 (B) the American Medical Association created a permanent committee, the Council on Medical Education. In 1910 (C) the Carnegie Foundation for the Advancement of Teaching published its report on medical education. January first of that year, also, had been designated by the Council as the date when medical schools should put into effect the entrance requirement of one year of collegiate work. This was not made an essential for the Class A rating, however, until (D) Jan. 1, 1914. The entrance requirement of two years of college work was made an essential for the Council's Class A rating (E) Jan 1, 1918.

While this chart refers mainly to the increase in entrance requirements, that increase is paralleled by the improvements in other respects in medical schools. For example, there has been a corresponding increase in the number, size and character of medical school buildings. The endowments for medical education have been rapidly increased. There has been an increase in the number of well-equipped laboratories; in the number of all-time expert teachers; in the amount of clinical material in dispensaries and hospitals—and of even greater importance—an increase in the number of medical schools which have adopted greatly improved methods of clinical instruction.

A COMPARISON WITH COUNTRIES ABROAD

A comparison of educational standards in the United States with those of other leading nations is graphically set forth in Chart 2. It is interesting to note that the line representing the age of 18 commonly separates secondary from collegiate education. In many of the countries of central Europe graduates of the secondary school go immediately into medicine. As is generally known, however, the work of the secondary schools of central Europe covers not only the work in the high schools of the United States but also that included in one and two years of college work. Between one and two years of time in this country is lost in the eight grades devoted to grammar school education. This, however, is being corrected by a rapidly increasing number of grammar schools in which students above the average are permitted to skip one or two grades and in that way are enabled to enter college at 16 or 17 years of age. The requirement of two years of college work, therefore, places medical education in this country on a par with the leading nations of central Europe.

BETTER QUALIFIED STUDENTS AND GRADUATES

With the merging of medical colleges and the general adoption of higher entrance requirements, a decrease in the number of students was expected. With the large over-supply of medical schools in 1904 there was a correspondingly large over-supply of medical students. It is not surprising, therefore, that the total number of medical students, which was 28,142 in 1904, decreased to 13,052 in 1919. It is gratifying to note, however, that the number of students in medical colleges which adopted the higher entrance requirements has increased from 1,761 in 1904 to 14,319 in 1921.

The number of students graduating also was decreased from 5,742 in 1904 to 3,192 in 1921—but at the same time, the number of those graduating under the higher entrance requirements increased from 369 in 1904 to 3,112 in 1921.

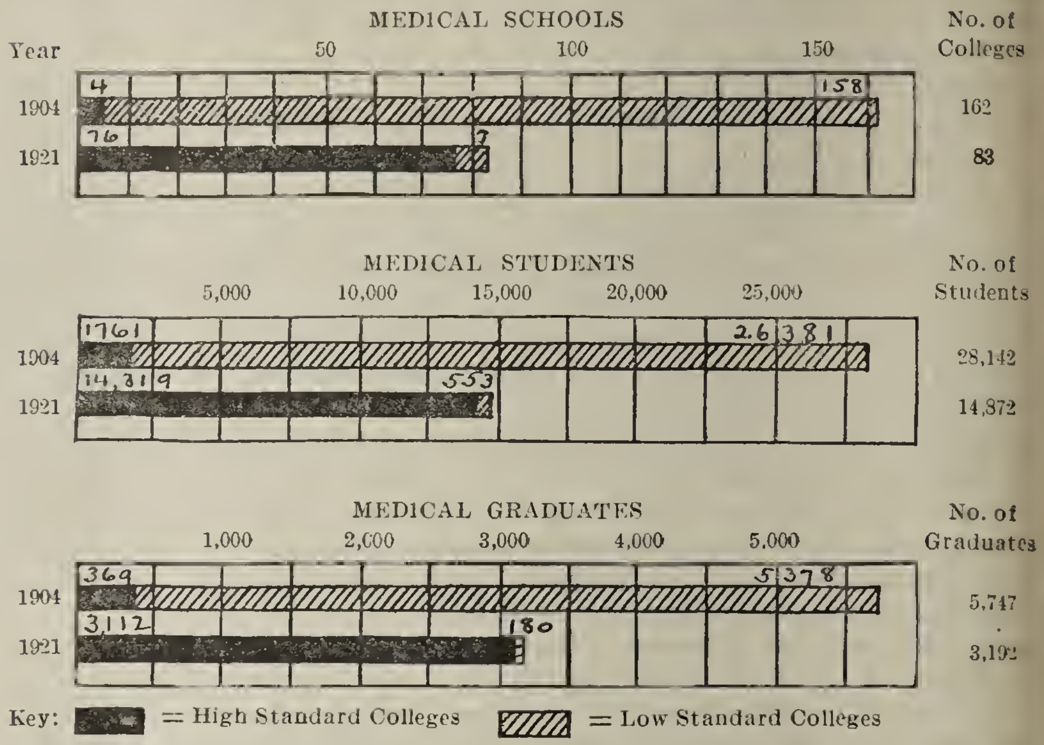
The enrolment of students by classes during the last eight years is shown in Table 2. The lowest enrolment resulting from higher entrance standards began with the freshman class entering in 1914, culminating in the lowest number of students in all classes in 1918-1919. A secondary wave of low enrolments began with the freshman class entering during the World War year, which will culminate in the smallest number of graduates at the close of the present session.

Since 1919, the enrolment has increased by about 1,000 students each year, reaching a total of 15,967 in the present session—the largest number since 1914.

II. New Problems in Medical Education and Practice

From the above it will be seen that tremendous improvements have been made in medical education during the last twenty years. Our medical schools are now in position to teach the greatly enlarged knowledge of medicine developed since the days of Pasteur and the era of medical research which began at that time.

CHART 3.—QUALITY VS. QUANTITY OF MEDICAL COLLEGES, STUDENTS AND GRADUATES

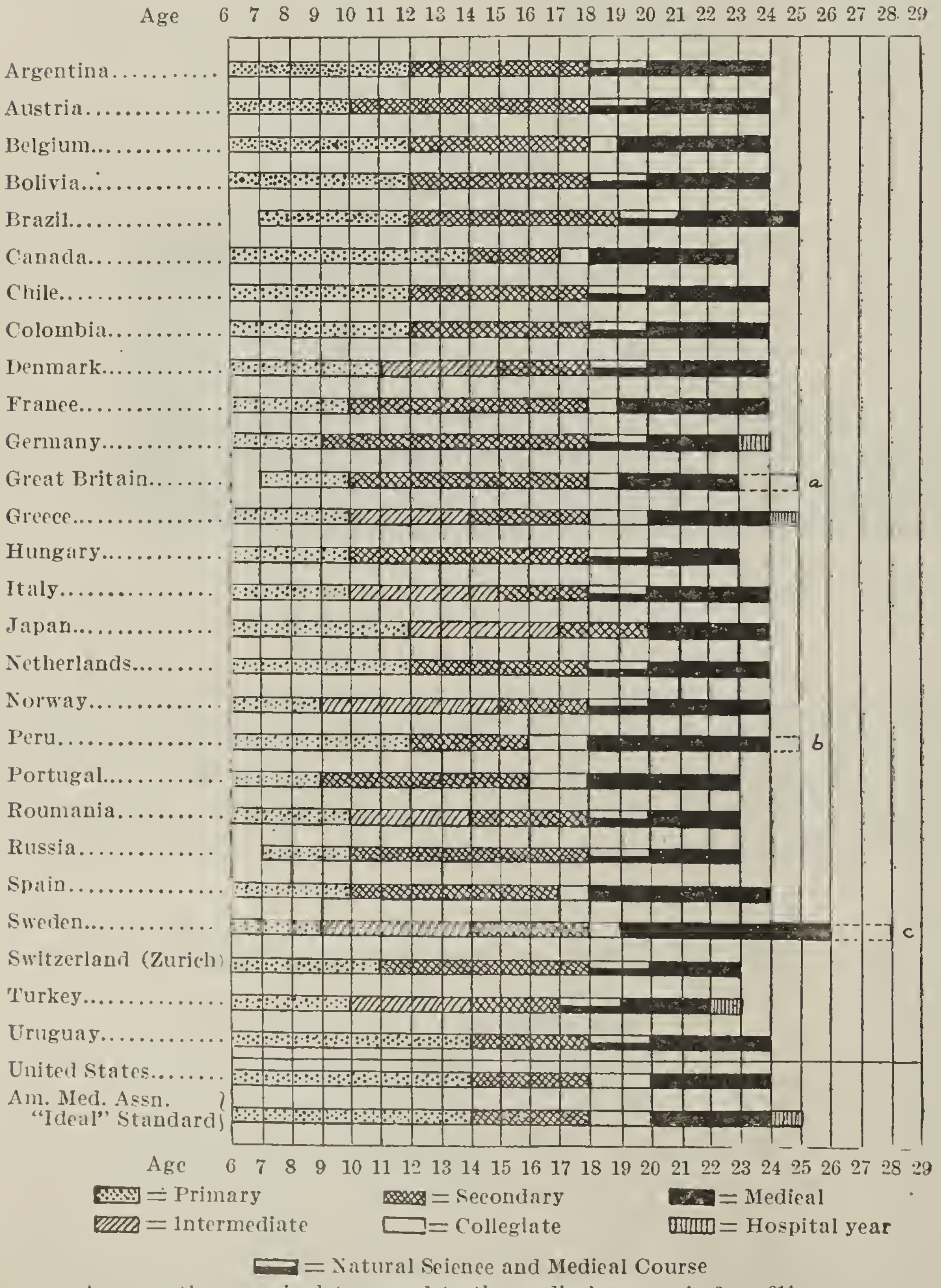


In 1904 only four medical schools required any college work for admission, while 158 (97.5 per cent.) required at most only a high school education. Now 76 medical schools require two or more years of college work for admission and only 7 (8.4 per cent.) still hold to a high school education or less.

In 1904, 1,761 students were enrolled in the high standard colleges, while 26,391 (93.8 per cent.) students were enrolled in the low standard institutions, including a large proportion who did not have a high school education. Now 14,319 students are enrolled in high standard schools, while only 553 (3.9 per cent.) are enrolled in schools having low or loosely enforced entrance requirements.

In 1904, there were only 369 students graduated from the high standard colleges, while 5,378 (93.6 per cent.) were turned out by the lower type institutions. This year, 1921, 3,112 students graduated from high standard medical schools, while only 180 (5.6 per cent.) were turned out by the lower grade institutions.

CHART 2.—PRELIMINARY AND MEDICAL EDUCATION IN THE UNITED STATES AND ABROAD—1920



a = Average time required to complete the medical course is 6 or 6½ years.
b = Some reports say medical course covers 7 years.
c = Average time required to complete the medical course is 8 or 9 years.

Medical education has indeed been revolutionized. Instead of a simple course of didactic instruction, the medical school now has an enlarged plant with its laboratories, library and museum, as well as the enlarged clinical departments including dispensary and hospital. These changes and the character of the education furnished, however, are in turn bringing about a revolution in the practice of the healing art. Indeed, several more or less serious problems have resulted largely, if not entirely, from the modern training now furnished to medical graduates, including the year of experience as an intern in a modern hospital. Some of these problems are as follows:

(*a*) Medical schools are finding it necessary to limit the enrolment of students.

(*b*) The cost of furnishing a medical education has been tremendously increased.

(*c*) There is an increasing trend toward specialization and group practice of medicine.

(*d*) There has developed a complaint regarding the lack of general practitioners, especially in the sparsely settled or rural districts.

(*e*) There is a rapid increase in the number of hospitals, which brings a greater demand for interns than can be supplied from recent medical graduates.

LIMITATION OF ENROLMENTS IN MEDICAL SCHOOLS

A few decades ago the medical course consisted largely of didactic lectures and no limitation of enrolments was necessary. As classes grew larger, the size of lecture amphitheaters was increased, in many instances providing seats for classes of 500 or more students. Even after laboratory courses were added, some schools provided enormous laboratories particularly in anatomy and chemistry and a few colleges had laboratories large enough in which to teach, at one time, several hundred, including medical, dental and pharmacy students.

The medical curriculum has become more complex, however, and the teaching of students in small sections has become more general, especially in dispensaries and hospitals, so that a larger number of individual teachers is required, and administration is more difficult. To prevent confusion and to establish greater efficiency, therefore, it has become necessary for medical schools to admit no more students than their teachers, laboratory space, and available hospital and dispensary facilities will permit.

At the present time, 47 medical schools are limiting the number of students admitted to each class, and report a total capacity for 11,925 students. The other nineteen Class A colleges have an estimated capacity for 4,400 students, making a total capacity in the sixty-six Class A medical schools for 15,925 students.

Sixteen of the Class A medical schools report that by adding several teachers, enlarging certain laboratories, or by other minor modifications provision can be made for 1,500 more students. This would increase the capacity of the sixty-six Class A schools to 17,425 students—about 1,500 more students than are now enrolled in all existing medical schools including those in Classes A, B and C.

DO WE NEED MORE MEDICAL SCHOOLS?

The rapidly increasing numbers of well qualified students, coupled with the tendency of medical colleges to limit their enrolments, is causing some anxiety lest well qualified students will be unable to secure admission to acceptable medical colleges. To meet the situation it is important that some medical schools which have placed their limits at extremely ow numbers—twenty-five or thirty in a class—shall enlarge heir facilities so as to admit larger numbers. It would appear that a medical school with a complete corps of instrucors should be able to handle from fifty to seventy-five students in a class. The enrolment of extremely small numbers also causes a large disproportion between the fees paid by the student and the—at the present time—much arger sum expended for his instruction. Public investigations are liable to be demanded of such large expenditures, especially if many well qualified students find they cannot secure admission to medical schools. If the numbers of well qualified medical students continue to increase, the existing medical schools must provide for them or new medical schools will need to be established. We cannot afford to have so limited a capacity in our better medical schools as to force well qualified students into lower grade institutions. It is believed that he present number of medical schools is sufficient but unforunately some are not sufficiently financed to care for as large classes as otherwise might be enrolled. In this connection, it s pleasing to note the statement of Dr. Pritchett in his recent report, that instead of aiding "only a few great medical schools" such aid be extended "to strengthen weak schools" n other communities "that sincerely seek their own improvement." A few hundred thousand dollars distributed among hese smaller but deserving medical schools in the present emergency will be of far greater service to the public than additional millions given to one of the few institutions which are already so generously endowed.

TABLE 1.—QUANTITY VS. QUALITY

	Entrance Requirements				
	Two Years of College Work		High School or Less		
	No.	%	No.	%	Totals
Medical Colleges:					
1904	4	2.5	158	97.5	162
1921	76	91.6	7	8.4	83
Students:					
1904	1,761	6.2	26.391	93.8	28,142
1921	14,319	96.1	553	3.9	14,872
Graduates:					
1904	369	6.4	5,378	93.6	5,747
1921	3,112	94.4	180	5.6	3,192

THE INCREASED COST OF MEDICAL EDUCATION

During the last twenty years the cost of conducting medical schools has been tremendously increased. Buildings have been enlarged, making necessary a greater cost for lighting, heating and janitor service. A larger expenditure is necessary for administration, for records and for clerical assistance. The increased number of laboratories has correspondingly increased the cost for equipment and maintenance. A larger expenditure is required also for medical research, for the maintenance of library and museum and—unless provided by city, state or private benefactors—for dispensaries and hospitals. The largest single item, however, is the expenditure for salaries paid to the essential expert instructors who devote their entire time to teaching and research in the laboratory departments. If the salaries now paid by several medical schools for full-time professors in the clinical departments are included the expense for this item is still further increased.

It is not surprising, therefore, that the cost of furnishing a medical education at the present time is nearly four times the income obtained from students' fees, even though these fees have been increased to a moderate extent.

Reports from sixty-nine medical schools in regard to income and expenditures for the last fiscal year show that the average income was $130,672 including $35,135 (26.9 per cent.) obtained from students' fees, and $95,537 from other sources.

The average expenditure by each college was $123,947 including $46,162 (37 per cent.) for all-time teachers, $21,131 (17 per cent.)—(54 per cent. for instruction) for part-time teachers, $19,068 for wages and $36,974 for maintenance and supplies.

Of these sixty-nine medical schools the average yearly fee obtained from each student was $185 and the average amount

TABLE 2.—ENROLMENTS OF MEDICAL STUDENTS FOR EIGHT YEARS, SHOWING VARIATION IN NUMBERS BY CLASSES

College Session	Freshmen	Sophomores	Juniors	Seniors	Intern Year	Totals
1914-15	3.373	3,919	3,675	3,864	...	14,891
1915-16	3,582	3.094	3,559	3,727	...	14,022
1916-17	4,107	3,117	2,866	3,674	...	13,764
1917-18	4,283	3,521	2,893	2.933	...	13,630
1918-19	3,104	3,587	3,272	2,967	122	13,052
1919-20	4,234	2,837	3,464	3,263	290	14,088
1920-21	4,825	3,588	2.637	3,416	406	14,872
1921-22*	5,296	4,278	3,359	2,602	432	15,967

* Estimate.

The heavy line drawn through the table underscores the figures which show the lowest ebb in the enrolment in the respective classes following the adoption of higher entrance requirements. A temporary diminution in the numbers began with the freshmen in 1918-19 which was due to the enlistments in the World War. While the figures for 1921-22 are estimated they are fairly accurate since reports from all but a few colleges were obtained.

TABLE 3.—CAPACITY OF MEDICAL SCHOOLS UNDER LIMITED ENROLMENTS

	No. Colleges	Total Enrolment				Total Enrolments 4 Yrs.	Average Enrolment per College
Class A Medical Colleges:		1st Year	2d Year	3d Year	4th Year		
4-year colleges	42	3,185	2,050	2,990	2,970	11,195	267
2-year colleges	5	165	165	.....	.....	330	66
Estimated highest capacity with efficiency:							
4-year colleges	14	1,145	1,005	930	900	3,980	274
2-year colleges	5	210	210	...	...	420	84
Totals, Class A colleges	66	4,705	3,430	3,920	3,870	15,925	691
Class B colleges:							
Capacity reported	3	120	120	125	125	490	163
Capacity estimated	3	100	100	100	100	400	133
Totals, Class B colleges	6	220	220	225	225	890	296
Totals, A and B colleges	72	4,925	3,650	4,145	4,095	16,815	234

which the medical school expended in order to furnish his instruction was $655. In 1916, the average fee paid by each student in eighty-two colleges reporting was just $150, and the average expenditure per student was $419. In the five years, therefore, the average expenditure per student has increased 56 per cent. while the tuition fee has increased only 24 per cent.

DANGERS FROM SPECIALIZATION

In recent years the number of physicians entering the specialties has been increasing. This is a normal process which naturally follows the enlargement of the field of medical knowledge. Prior to 1900, physicians became specialists usually after several years of general practice, and often after a postgraduate course in Europe.

With the present wide fields of medical knowledge and practice, no one can secure the highest degree of efficiency and skill in diagnosis and treatment unless he limits his practice to some special field of medicine.

The need of highly skilled specialists was very pronounced during the World War when they were in such great demand. Specialization, if based on a satisfactory training in both the fundamentals of medicine and in special work, is in the interests of the public and worthy of commendation.

The trend toward specialization at present appears to be overrapid and the importance of the specialist has been exaggerated to the detriment of the general practitioner. Recognizing this fact, the Council at its recent conference discussed the desirability of reorganizing the medical curriculum so as to include in the undergraduate curriculum only such courses as are necessary to prepare the graduate to be a good general practitioner, leaving all special training for the postgraduate school.

Another danger from a too rapid development of specialization is that physicians may declare themselves to be specialists without having secured the thorough additional training necessary to justify them in so doing.

It is evident from a study of this whole problem that provision should be made by the stronger medical schools of the country to provide thorough courses of graduate instruction for the specialist. It is hoped, also, that the state licensing boards will soon demand such thorough training before any physician is permitted to pose as a specialist.

MIGRATION OF PHYSICIANS TO CITIES AND NEEDS OF RURAL COMMUNITIES

There has always been a scarcity of physicians in rural communities but the situation became especially acute during the World War since many physicians left those districts to enter the government medical services and did not return after their discharge. Many of these took the opportunity to secure a postgraduate training preparatory to entering a specialty. The places in the rural communities, furthermore, have not been filled by recent medical graduates, who during the last several years have been less inclined to locate in rural districts than formerly.

TABLE 5.—URBAN OR RURAL POPULATION AND SUPPLY OF PHYSICIANS

Population of Cities [1]	No. of Cities	Total Population	Per Cent. Population	Number of Physicians [2]	Ratio of Physicians to Population	Percentage All Physicians
500,000 and above	12	16,369,310	15.5	30,932	529	21.0
200,000 to 500,000	21	6,353,645	6.1	12,862	493	9.0
50,000 to 200,000	111	9,973,462	9.4	17,254	578	12.0
10,000 to 50,000	602	12,017,783	11.4	21,204	563	15.0
5,000 to 10,000	721	4,997,794	4.7	9,313	527	6.0
Below 5,000.......	...	56,153,587	52.9	54,043	1,020	37.0
Totals...........	...	105.708,771	100.0	145,608	726	100.0
Totals in cities of 5,000 and over......			47.1	91,565		

1. Population figures based on report of the Census Bureau for 1920.
2. Figures regarding the numbers of physicians are from the American Medical Directory for 1921.

Recent statistics show that physicians are following the general trend of the population toward the cities rather than to locate in rural districts but in a larger proportion. According to the 1920 census reports, 47.1 per cent. of the population of the United States is now contained in cities of 5,000 and over leaving 52.9 per cent. in communities of less than 5,000 people. According to the 1921 edition of the American Medical Directory 63 per cent. of the physicians of the United States are located in cities of 5,000 or more people, and 37 per cent. in cities and communities of less than 5,000.

From these figures it will be seen that the scarcity of doctors in rural communities is not due to a general shortage of physicians, since the scarcity in rural communities is more than offset by the oversupply in the cities. There is, therefore, no call for special methods to swell the ranks of the medical profession. As has already been shown, also, the numbers of medical students, even under the higher entrance requirements, are becoming so large as to make it difficult for medical schools to care for them. There is, therefore, no need for a retrogression in educational standards.

The causes for the shortage of physicians in rural communities are (*a*) the progress in sanitation and disease prevention has reduced the amount of sickness in the country as well as in the city; (*b*) interurban cars, improved roads, the automobile and other means of rapid transit are working against the country doctor in that well-to-do people are going more and more to physicians in nearby cities; (*c*) this leaves for the country physician only the emergency cases and those who are unable to pay reasonable fees; (*d*) practice in the country, therefore, brings a minimum income for a maximum effort; (*e*) the physician, like others, prefers to live in the city with its better schools, better living conditions, etc.; (*f*) last, but not least, comes the better facilities for the practice of modern medicine in hospitals which, at present, are found only in the cities.

NEED OF THE HOSPITAL IN PRACTICE

Over ninety per cent. of all recent graduates in medicine now secure hospital intern training before entering on the practice of medicine; they are accustomed to the use of the modern aids for the diagnosis and treatment of diseases which are found in hospitals and know the value of the hospital routine in the treatment of patients. The benefits of hospital care are coming more and more to be recognized by the public, also, which explains why many well-to-do people in the country come to the cities for treatment. The solution of this problem, therefore, is to have a hospital built in every community where there are enough people to support it. This hospital would enable three or more physicians to care for the patients in the immediate community and through the better roads and the automobile could promptly reach patients in even outlying districts. In connection with this central community, outposts might also be established in smaller, outlying localities, where a physician of the staff might keep hours at regular intervals. This would enable him to look after the general needs of that community; to recognize cases requiring hospital attention and to arrange for the needed care. The solving of this problem does not mean retrogression in either educational standards or methods of practice; it means the recognition of new conditions in medical practice and the establishing of community hospitals whereby these improved methods will be brought within the reach of all the people, those in the smaller towns and rural communities as well as in the cities.

THE UNDERGRADUATE MEDICAL COURSE

At the Council's conference in March a revision of the undergraduate curriculum was suggested in a report prepared by Dr. Ray Lyman Wilbur, an abstract of which follows:

The essential aim of the undergraduate medical curriculum is to train a student already versed in laboratory methods so he will know how to "practice medicine." The graduate in medicine should have a large fund of immediately available anatomic, physiologic and clinical information; his sense organs should be well trained and as many facts as possible should be gathered together and given an orderly relationship. The specific problem is the development of the student's powers of observation and of rapid, honest, unbiased reasoning, based on ascertained facts.

A trained clinician on entering the sickroom has every sense alert. His eye takes in at a glance the surroundings of the patient, the evidences of care or lack of care, anxiety, repose, cyanosis, jaundice and a hundred other conditions. His ear tells him of voice changes, types of breathing. His nose adds its share; and when he touches the patient or percusses the chest, a combination of all the senses helps him to build up a mental picture of the processes going on inside the human body which years of training have taught him to know so well. All the time his mind is busy arranging the facts ascertained, calling up former experiences, measuring values, reaching conclusions, mapping out plans for additional methods of seeking information and preparing a method of treatment. When well done, such work represents the height of ordinary human achievement, and at times seems to bear the evidences of genius.

The object of the undergraduate medical years is to lay the basis for such work in medical practice. You can call it the art of medicine or the science of medicine; the two merge into one in real medical work, and a skilled technician must be the result. The main reason the present undergraduate course often fails is that we have tried to force into four short years the enormous and constantly growing fund of medical knowledge, and time should not be wasted on giving prolonged descriptions of very rare medical conditions.

The present curriculum was built up at a time when clinical teachers had no confidence in the basic training of the student, and they felt impelled to repeat fundamentals and reorient students in each so-called "course." In most medical schools even today the medical student is taught the general phenomena of inflammation by from three to fifteen teachers in different subjects. Repetition of elementary work, duplication and lack of coordination, too much informational material and rigid legal hour requirements have made the present medical school a wonderfully intricate mechanism of hours, schedules, lectures, courses, that has become scrambled, mixed up, unwieldy and inefficient. Why not scramble it entirely, look carefully over the mass, pick out the fundamentals and get a fresh start? The good preliminary training now required of medical students has eliminated many of the unfit. They now have a training in the basic sciences, and are able to do an increasing amount of independent and thoughtful work.

The fundamentals with which students must now concern themselves are: (1) sound basic training in methods of thought, memory and honest reasoning; (2) the ability to observe; (3) the ability to use books and the tools of the profession; (4) the retention of a sound body with acute trained senses, and (5) the mental accumulation of essential facts immediately available for use.

To best utilize the four brief medical years, we need in some way in training the student to combine the old apprentice system with the modern laboratory. A common standardized course for all medical schools is no longer necessary. The central core of information needed by the doctor should be selected and supplemented by the needed technical training, letting industry, books, open eyes and willing minds complete the work.

The central core of medical training must include anatomy, physiology, chemistry, bacteriology, pathology, pharmacology, clinical and laboratory medicine, including pediatrics and mental diseases, clinical and laboratory surgery, obstetrics and gynecology, hygiene and public health. We can add for good trimming the history of medicine and medical jurisprudence. If these subjects are adequately taught there will be no need to include the specialties except in an elementary way. The professors of medicine and surgery can readily bring the essentials of every specialty into their routine teaching. The student can be left time enough for optional work in his four years so that he can enter any chosen special field for additional technical training. If he learns how to examine thoroughly a single patient, he will have the principal tools and information required.

The specialties, taught as they are at present, belong outside the undergraduate medical curriculum. They can be included in the medical curriculum when they are taught by men who can range over the body instead of having their vision limited largely to body orifices. It would not be so absurd to spend a whole schedule hour of an undergraduate medical class on the technic of an operation on the inner ear, if other more important things to the student—perhaps not to the professor—were not so pressing. It must not be forgotten, however, that any complete observation and any piece of highly skilled work has its value in instruction.

Instead of elaborating new schedules, it is suggested that the number of hours allotted to the specialties be reduced or, better yet, that all specialists be promoted to the graduate school but continue to join in the teaching of the main clinical branches by presenting cases, giving lectures or, better still, by demonstrating their special field of work on patients already familiar to the students.

Pediatrics is not a specialty but is general medicine with an age limit, and offers the most important source of training for the medical student in physical examination, nutrition, therapeutics and hygiene.

Without emphasizing details, my suggestions are: (1) Begin some clinical work as early in the medical courses as is physically possible to heighten the interest of the student and give him a sense of professional training; (2) divide the last two years between general medicine and pediatrics, including mental diseases, 40 per cent.; general surgery, 30 per cent.; obstetrics and gynecology, 10 per cent.; hygiene and public health, from 5 to 10 per cent.; optional work, such as special work along general lines, thesis, work in special fields, medical jurisprudence, history of medicine, etc., from 15 to 10 per cent; (3) bring the laboratories into immediate conjunction with the clinics so that the eye of the student, still bearing the image of the anemic appearance of a patient, may see his red blood cells; (4) have the clinician cross over freely into the domains now sacred to the specialists, bringing in the specialists to help him; (5) have a committee on coordination of course content with regular reports of the ground covered by teachers to avoid duplication and to see that each class is exposed to a sufficient amount of well balanced and selected information; (6) make hospital experience with responsibility a requirement for graduation either by the intern year or by some other device. One responsibility well met, no matter what the pathologic condition, is of more value in medical training than a dozen carefully dehydrated lectures; (7) since all medical practice is of the nature of research and medicine is constantly growing, keep the spirit of research active all along the line in the medical course.

FUTURE DEVELOPMENT OF MEDICAL EDUCATION

At the last Annual Conference on Medical Education in March, Dr. Arthur Dean Bevan presented a constructive program for the future development in medical education from which the following summary is taken.

The ultimate object of medical education is to secure to every individual the great benefits of modern scientific medicine. Medicine is one of the great factors of modern civilization and in its future development proper regard must be given to its relationship to the community, to the profession and to general education.

In the last (the 1921) report of the Carnegie Foundation, President Henry S. Pritchett, who for many years has been a close and sympathetic student of medical education, says:

"The primary purpose of the medical school is to train practitioners for the medical profession. There are many by-products of this primary intention but . . . these by-products will be greatest when the medical school conceives most clearly its fundamental purpose and bends its effort most directly to it. While the development of a highly trained profession, like that of medicine, is directly dependent on the character of its professional school, and while it is essential that the professional school shall keep clearly in view its primary purpose it is none the less essential that medical education shall keep in touch with the changing needs of the profession. To do this it must take into account those agencies of professional training that are closely related to its field of service. Without this contact it is entirely possible for the profession to be educated away from a sound conception of its immediate needs and the steps by which they are to be met. It is essential that those who have to do with the medical school shall conceive of it not only in respect to its primary purpose, but also in relation to those institutions and agencies with which the training of the medical profession is so intimately connected."

Medicine is the science and art of healing; therefore, the study of medicine is the study of the science and art of healing. It is the study of the sick or injured patient. Because of that fact the medical school should be located in and about the hospital and the dispensary, because it is there that we can best have access to the patient who is the object of study.

It is a fundamental proposition, therefore, that the medical school should be centered in and about the hospital. The laboratories and class rooms used to teach the daughter sciences of anatomy, physiology, pathology and pharmacology should be grouped about the hospital and dispensary.

The expense of conducting a hospital large enough for a teaching hospital for a medical school is very great and it should not be borne by the medical school. The primary function of a hospital is to care for the sick; its secondary functions are teaching and research. In serving its primary purpose it is doing an essential function in the community and its cost should properly be borne by the community which it serves. About the hospital should be built the laboratories of pathology, anatomy, physiology and pharmacology, so that these departments may keep in touch with the clinic and clinical problems.

In addition to the teaching hospital there should be an outpatient department, which is very essential in medical teaching, and a diagnostic clinic—such a plant as the Mayo Clinic building, where the staff of the hospital can have their consultation and examining rooms, clinical laboratories and every facility to examine and care for pay outpatients. The time has come when we should recognize such a diagnostic clinic as one of the most essential plants in our medical school scheme.

In regard to the medical curriculum proper, President Pritchett in his report says:

"The reform of the curriculum of the undergraduate medical school is one of the most pressing questions of present day medical teaching, and its accomplishment will have a larger bearing on the progress of the profession than any other single action. . . . The medical student takes up the study of certain fundamental sciences, anatomy, physiology, pathology, chemistry (pharmacology), on which he undertakes to build the superstructure of professional training. The applications of medical science have, however, become so varied and so complicated that the medical student is not only called on to carry an impossible load, but also his fundamental sciences are in different compartments from the applications which ought to illustrate and make clear the sciences themselves. The student learns anatomy by a tedious process of dissection on which he spends a large amount of time, but he has a very good opportunity to forget most of it before he sees, in practice, the application of his anatomical studies. These fundamental sciences can be taught, not as something separate from medical practice but as part of it. . . . It must be clear to every medical teacher that the weakest parts of the present medical teaching are the courses in anatomy and pathology. These are elaborately taught to every medical student without affording him any opportunity to see the application of anatomical and pathological knowledge to the practice of medicine and surgery. The process is like teaching forestry by giving the student elaborate courses in botany before taking him into the forest. . . . The practical remedy for this situation is to reduce the amount of theoretical instruction in the first two years, and to change the character of the teaching so as to make clear the fundamental facts, while at the same time starting the clinical instruction at the very beginning of the course. The student should learn his anatomy and his pathology through his clinical training, not reverse the process. No other reform in medical teaching approaches in importance this one."

In reorganizing the medical curriculum we must recognize the fact that the medical school should provide for the training of two classes of medical practitioners — the general practitioner and the specialist, and must provide both an undergraduate and a graduate course of instruction. The clinical instruction in the undergraduate course should be broadened and simplified and given under the three departments of medicine, surgery and obstetrics, and by teachers who are broadly trained and who in their clinical work cover the entire patient. Research is an essential integral part of every well organized clinical department. Whatever funds there are in the control of the medical school which can be used for research should be intelligently assigned to the various laboratory and clinical departments with the certainty that these funds will be of much more service to the school and the science of medicine than they would be if they were used to develop a special research department or laboratory.

In the interests of medical education and for the protection of the public, all medical schools and state medical boards should make the hospital year a requirement both for graduation and for the license to practice.

Another important matter is the providing of thorough courses for the training of specialties. The reports of the committees presented at the annual conference in 1921 brought this whole matter clearly before the medical profession and the medical schools. The medical schools are again urged to make provision for the training of specialists and also to provide postgraduate courses for medical practitioners.

Those who have been studying this problem in a broad way recognize that the ultimate aim of medical education must be to secure the benefits of modern scientific medicine to all the people. The time has come when the medical profession must take the initiative and organize the entire profession so as to secure this result. This is a national problem, a state problem and a community problem. In its practical application, however, it is a community problem. In every community which can support them we should have the necessary number of well trained medical men; we should have properly built, properly equipped and properly conducted hospitals which can furnish the hospital and diagnostic facilities demanded by modern scientific medicine sufficient for the needs of that community. Such medical facilities are as necessary in our modern civilization as good roads and good schools. By an educational propaganda, we must make this clear to the profession and the people. The American Medical Association must point out the way and urge every county medical society to make this work their first and most important function.

PROBLEMS OF MEDICAL LICENSURE

As the admission requirements of medical schools have been advanced during the last seventeen years the requirements of preliminary education by state licensing boards have also been advanced and progress has been made in medical licensure as indicated by Table 6, reproduced herewith. This shows, therefore, that standards of medical licensure have been generally improved.

There are a number of problems, however, shown in the recent State Board Number of The Journal[1] to which the attention of the House of Delegates should be called. One of these is the continued existence of separate eclectic boards in Arkansas and Connecticut, through which those states are being flooded by graduates of low grade medical schools. Another is the licensing of osteopaths as physicians and surgeons by several boards—notably, California, Colorado and Texas. It is noteworthy that two of these states—Colorado and Texas—refuse to admit graduates of Class C medical schools to their examinations. Nevertheless, they admit graduates of osteopathic colleges, which are nothing more than very low type medical schools.

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[1] State Board Statistics for 1921, J. A. M. A. **78**: 1297-1319 (April 29) 1922.

A third problem is the confusion which exists in the administration of medical practice laws caused by the various forms of "drugless" healing. As a result of this confusion there are misconceptions as to just what the practice of medicine is. By any logical manner of thinking, all methods by which human ailments are treated are covered by the term "the practice of medicine." It is evident that any one who is to treat human disorders by any method should have a knowledge of the fundamental medical sciences by which he can make a reasonably accurate diagnosis. It follows, also, that the educational qualifications required of one practitioner—the physician—should be required equally of all who profess to treat the sick. Legislators have at various times overlooked these facts, have listened to the claim of would-be healers that because they "did not use drugs," they were "not practicing medicine" and have granted them authority to practice on lower qualifications than are required of physicians. Such action is illogical. That the practice of medicine is not limited to the giving or withholding of drugs, but includes any and every useful means of diagnosing or treating human disorders, has been repeatedly recognized by the national supreme court. In a Texas case[2] it was declared that osteopaths, like physicians, should be required to have a scientific training, and a clear distinction was made between osteopaths, on the one hand, and nurses and masseurs on the other. Osteopaths, it was implied, gave treatment without a physician's diagnosis or instructions, while nurses and masseurs performed their functions after a physician had ordered that treatment or care. The decision applies with equal force to any other class of healers. Recently a decision has been rendered by the United States supreme court which clears the atmosphere in Ohio. Chiropractors, it has been ruled, must secure licenses from the medical board, or they are subject to prosecution for practicing illegally. The various healers in bombarding the legislatures—too often successfully—to secure special privileges in regard to practice, have indeed caused confusion in medical licensure but the confusion is beginning to be cleared away. The issue should be tested on the basis of reasonable educational qualifications, and then, if necessary, each case should be carried through to the United States supreme court where the merits of the situation will be cleared up. The forces for law and order in each state should not rest until one standard of educational qualifications has been established, which will be equally fair to the physician and to every one else who is authorized to practice the healing art. Even granting that there is some good in the methods emphasized by any group of healers, this good will in no way be diminished if those applying such methods are required first to have had a training in the fundamental medical sciences.

TABLE 6.—ADVANCES IN STATE LICENSE REQUIREMENTS IN SEVENTEEN YEARS

Requirement or Provision	States Having Provision for 1904	States Having Provision for 1922	States Having Provision for Increase	States Still Having No Provision for
Preliminary Education—				
Any requirement	20	47	27	3[1]
A standard four-year high school education or higher	10	47	37	3[1]
One year or more of college work	0	42	42	8[2]
Two years of college work as a minimum	0	38	38	12[2]
That all applicants be graduates of a medical college	36	49	13	1[3]
That all applicants undergo an examination for license	45	49	4	1[4]
Requirement of practical tests in the license examinations	1	13	12	37
Hospital intern year required	0	10[5]	10	40
Full authority by board to refuse recognition to low-grade colleges	14	47	33	3[6]
Boards refusing to recognize low-grade colleges	5	47[7]	42	3[8]
Reciprocal relations with other states	27	44	17	6[9]
Single boards of medical examiners	36	45	9	5[10]

1. District of Columbia, Massachusetts and Wyoming.
2. See Table L.
3. Colorado.
4. New Mexico.
5. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
6. District of Columbia, Massachusetts and Wyoming.
7. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
8. The states named in Footnote 6.
9. Alaska, Arizona, Connecticut (regular board), Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
10. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

III. THE COUNCIL'S WORK WITH HOSPITALS

The work of the American Medical Association with hospitals began in 1904 when a list of all such institutions was prepared for publication in the American Medical Directory. The Association collected also a large amount of detailed information in regard to all hospitals. In 1904, also, the ideal standard of medical education proposed by the Council included, among other things, the requirement that a fifth year be spent by the student as an intern in an approved hospital. The Council began at once to collect data in regard to hospitals which were making use of interns. At that time, however, there were not enough hospitals using interns to provide places for all medical graduates and so far as they could get them students were obtaining internships voluntarily.

FIRST SURVEY OF HOSPITALS

In 1912 a circular letter was sent to the 2,424 hospitals having twenty-five or more beds asking in regard to the use of interns. Replies were received from 2,185, or 90 per cent., and only 852 were regularly using interns which provided places for 3,006 graduates. Since the internships in many hospitals extended over eighteen months or two years, the internships available annually were about 2,000 although approximately 4,000 students were graduating each year.

In 1913 a questionnaire was sent to all hospitals and on the basis of the reports received a provisional list was prepared of hospitals approved for intern training. This list was carefully checked by a committee of three prominent physicians in each state, unworthy hospitals were eliminated, and other hospitals which deserved to be included were added. In 1914 this revised list was published and in 1915 a list of the Council's state advisory committees was published. In 1915 the members of all the state advisory committees on hospitals were selected by and made organic parts of the state associations.

SECOND AND THIRD SURVEYS

In 1915 a second questionnaire was sent to hospitals having fifty or more beds. Through the state committees, numerous inspections and investigations were made, so that the list of hospitals approved for intern training which was published in 1916 was more reliable than the previous lists. It was the only list available for the guidance of students seeking internships.

THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

As the result of a resolution adopted at the annual conference on medical education in 1919 the American Hospital Conference was organized in Chicago in April of that year. At its first regular meeting held in Cincinnati in September, 1919, the name was changed to the American Conference on Hospital Service. This is an organization made up of representatives of fourteen organizations especially interested in the improvement of hospital service. The organization now has its part in the annual congress on medical education, licensure, public health and hospitals which has grown out of the annual conference of the Council on Medical Education. The annual meeting of this organization in Chicago last March was of unusual interest and service through the discussion of numerous hospital problems.

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[2] Collins vs. State of Texas (U. S.) 32 S. c. Rep. 286.

Early in 1918-1919 the third survey of hospitals was completed. As in previous surveys, the state advisory committees aided materially in the work. Detailed reports were received from 1,126 hospitals stating that they were using or seeking interns—274 more than were included in the list of 1912. The total bed capacity of these hospitals was 270,500, places were available for approximately 6,000 interns. It was evident that with only about 4,000 physicians graduating each year, all these hospitals could not be supplied with interns. This made it important to select more carefully the hospitals admitted to the approved list, so that the internship might be made a fifth year of actual clinical training for the student.

ENLARGEMENT OF THE COUNCIL'S DUTIES

At the meeting of the American Medical Association in 1920 the House of Delegates placed all the Association's work with hospitals in charge of the Council on Medical Education and Hospitals.

For the tremendous work that needs to be done for the improvement of hospital service, no organization occupies a position more advantageous than the American Medical Association with its various state organizations. The work of the Association with hospitals must take all institutions into consideration and the Council is planning to establish a list, not only of those approved for intern training but also of those approved as nonintern hospitals. The standard applied to intern hospitals is being modified so as to apply to both groups. It is becoming increasingly important that every community be provided with adequate medical and hospital service. So much depends on the future development of hospitals, therefore, that the members of each state committee should be selected with special care. It is urged, that a permanent committee be established in every state consisting preferably of three members serving for a term of three years; the first committee being so appointed that the term of one member will expire each year.

HOSPITAL WORK OF THE YEAR

The latest list of hospitals approved for intern training was published in the Hospital Number of The Journal, April 16, 1921, and also in the medical directory. The Council has kept in close touch with the hospitals either directly or through the state committees and has approved several other hospitals that have applied for admission to the list and removed a few others that have fallen below the standard. Since the list was last published 43 hospitals have applied for classification, and 17 have been approved. There are now 627 hospitals on the approved list, distributed as follows:

	Number Approved	Internships	Beds
General hospitals	495	2,994	108,741
State hospitals and hospitals for the insane	28	99	50,134
Other special hospitals	104	424	16,117
	627	3,517	174,992

Through the cooperation of the state committees every decision regarding a hospital's facilities for intern training is now based on written evidence regarding the hospital's equipment, staff, character and quantity of work, and other items that go to make an internship.

The Council maintains also a general list of all hospitals for insertion in the directory and for the hospital information service. This phase of the work is followed closely because new hospitals are constantly being added and others are going out of existence, changing hands, increasing their bed capacity, etc. The time has passed when an occasional "roundup" of hospitals will suffice to provide the service that the Council is now called on to supply.

We wish to mention especially the splendid cooperation received from the state hospital committees which respond fully and promptly whenever requests for information or inspection are made. In a few states, notably California, Washington, Missouri and Ohio, and to a greater or less extent in other states, the committees have been particularly active and even aggressive, visiting hospitals and assisting in problems of staff organization or community relationships when requested by the hospital. In fact, the state committee organization throughout the country is now capable of being called into action to perform any important work and with a thoroughness hardly to be expected of voluntary committees.

SURVEY OF DISPENSARIES, CLINICS AND GROUP PRACTICES

There has developed in recent years a growing demand for information in regard to the number, distribution and work done in dispensaries, clinics and group practices, and during the present year the Council is making a special effort to obtain such data.

A comprehensive survey is now being made of all institutions that give medical service to ambulatory patients, including outpatient departments of hospitals; general dispensaries not connected with hospitals; group practices; tuberculosis; venereal, mental hygiene and other special clinics; health centers; baby welfare clinics, etc. It was found necessary to list all these various organizations in order to even approach completeness in any one of them.

The information thus far obtained indicates that there are in the United States, at the present time, approximately 1,150 outpatient departments, 800 independent dispensaries and possibly 200 group practices. Adding the clinics and dispensaries for tuberculosis, for venereal diseases, mental hygiene clinics and baby welfare clinics, there are no less than about 4,500 institutions giving medical service to ambulatory patients. Returns are constantly coming in so that the final report will doubtless show an increase over the figures given.

A few main facts are being obtained regarding each institution including, in addition to the name and the address, the kind or classification, the auspices under which it is operated, how supported, the total number of patients and the total number of visits made in the last fiscal year, the class of people served, the educational functions, numbers of full-time and part-time physicians engaged, number of social workers and the kind of medical service rendered.

Several facts have been brought to light regarding outpatient departments and dispensaries. There is (1) a steady increase in the number of patients seeking treatment in general dispensaries; (2) an increasing tendency to charge nominal fees thereby placing part of the cost of the institution on the patients; (3) an increased use of social service workers to investigate the social and financial status and to prevent pauperizing; (4) the great amount of educational work; (5) the inadequacy of clinical and office record systems—hence the extreme difficulty of securing accurate data; (6) an unprecedented increase in special clinics and dispensaries such as those for tuberculosis, venereal diseases, mental hygiene and baby hygiene.

GROUP PRACTICE

Before beginning this survey so much had been heard about group practices that one was led to believe they were being rapidly developed which made them a matter of great concern to the profession. The impression of great growth and wide use of the group practice system, however, has not been sustained by the survey. In fact only 139 groups exist in the country at the present time even with the most liberal interpretation of the term, and less than 1,000 physicians are combined in them. For the sake of an understanding as to what group practice is, we may attempt to define it as the practice of medicine by an organization of physicians, in which (*a*) each member contributes to the group his professional service and receives from the group certain benefits in return; (*b*) the members unite in the diagnosis of cases that indicate need for their combined service. Under this definition it is believed we would not find in the country today one hundred group practices, including altogether possibly less than 700 physicians. It is notable also that a large number of "group practices" are rather short-lived. At present, therefore, the group practice movement does not seem to warrant any very great concern on the part of the profession.

NUMBER OF HOSPITALS INCREASING

The number of hospitals has largely increased during the last fifteen years. In 1913, there were 2,424 general hospitals having twenty-five or more beds, and a total capacity of approximately 200,000 beds. In 1920, the number had increased to 4,012 with a total capacity of 307,356 beds. The latter figures did not include the 2,000 government hospitals, sanatoriums for the insane, state sanatoriums for the tuberculous, penitentiary hospitals, or homes for the aged, blind, incurables, etc. Also a number of disreputable hospitals were excluded.

The increasing number of hospitals is a direct response to the growing demand for hospital treatment by the public which is recognizing the improved methods of diagnosis and treatment in hospitals, as well as the freedom from noise, disturbances, and worry over household affairs so commonly experienced in home treatment. Through the instruction which they obtain in the examination and care of patients in hospitals; the familiarity which they obtain with the routine hospital methods of diagnosis and treatment, and the experience they obtain during the year devoted to the hospital internship, recent graduates realize the importance of having access to a hospital for the practice of modern medicine.

THE INCREASING DEMAND FOR INTERNS

Three factors in recent years have greatly increased the demand for interns: (*a*) the improved qualifications of the present-day graduates in medicine; (*b*) the rapidly increasing number of hospitals, and (*c*) the campaign to improve hospital service which has called for better records, including histories of patients, records of physical examinations, records of laboratory analyses, records showing the patients' progress and end results—work which rests largely on the intern. Ten years ago, many hospitals did not use interns and would not have them in the hospital and there were not enough internships available for those graduating each year. The improved qualifications of medical graduates, however, has led more hospitals to use intern service.

During the World War, instead of securing hospital internships, many graduates secured commissions in the government medical services. This created a demand for interns which since that time has become more and more pronounced. In 1918, 1,126 hospitals were seeking interns, these hospitals providing more internships than could be filled even in 1904 when this country had over half of the world's supply of medical schools.

The time has arrived, therefore, when the training of interns may with advantage be restricted to the hospitals having facilities and methods by which a fifth year of actual medical instruction can be furnished. Other hospitals will need to employ house physicians or to otherwise arrange for the services usually done by interns. The time has arrived also when state licensing boards should establish a general requirement of a hospital internship as an essential qualification for the license to practice. Nor will it be a hardship on the student if an intern training should hereafter be generally required by medical colleges as an essential for the M.D. degree. Such action by the medical schools would insure a more careful supervision of the intern's work as well as of the education furnished by the hospital.

SUMMARY

A summary of the foregoing report is as follows:

I. PROGRESS IN MEDICAL EDUCATION

1. In 1904 the United States had 162 medical colleges—more than were to be found in all the rest of the world. There was an overabundance of medical students and more graduates each year than the needs of the country warranted.

2. The campaign for improvement during the seventeen years, although it has reduced the numbers, respectively, of colleges, students and graduates, at the same time has remarkably improved the quality of each and the supply comes nearer to meeting the normal requirements of the country.

3. Where formerly educational standards of medical schools in the United States, with a few exceptions, were lower than in countries abroad, now the standards of medical education are at least equal to those found in any other country.

4. The lowest enrolment of medical students, resulting from the decrease in the number of colleges and the increased entrance requirements, was reached in 1919 when there was a total of 13,052 medical students. A still lower ebb in the enrolment of individual classes began with the freshman class of 1919, resulting from the many enlistments for military service. As a result the class graduating in June will show the lowest number. Since 1919 the numbers of students matriculating each year have been remarkably on the increase.

II. NEW PROBLEMS IN MEDICAL EDUCATION

The higher entrance requirements, improved medical schools and the modern methods of teaching have created new problems in medical education. For example:

1. The necessity of limiting enrolments has made it difficult for well qualified students to secure enrolment in medical schools. It appears, however, that this difficulty is only temporary.

2. There is still ample room in Class A medical colleges for more than the total number of students enrolled in all colleges during the last session.

3. The cost of conducting medical schools under the present standards of medical education has been greatly increased. Instead of there being profits from students' fees, now the expense is from two to four times the amount obtained from students' fees. The average income reported by sixty-nine medical schools is $130,672, of which $35,135 (26.9 per cent.) was obtained from students' fees.

4. The average expenditure of each medical school was $123,947, including $46,162 (37 per cent.) for all-time teachers, and $21,131 (17 per cent.) for part-time teachers, which makes 54 per cent. for instruction. The average annual fee paid by the student was $185 and the average expense for his instruction was $655. In 1916 the average fee was $150 and the average expenditure was $419.

5. Certain dangers from specialization have developed in that (*a*) medical schools are turning out specialists rather than thoroughly trained general practitioners, and (*b*) graduates are inclined to pose as specialists without first securing the essential experience or special training. The situation requires a reorganization of the undergraduate curriculum and the requirement, eventually, of evidence of special training before the physician is entitled to pose as a specialist.

6. Since the World War the lack of physicians in the smaller towns and rural communities has become more acute. It is evident that the solution of the problem is the establishing of hospitals in every center having sufficient population in the surrounding community to support a hospital.

7. A plan for the reorganization of the undergraduate curriculum calls for (*a*) the leaving of instruction in the specialties for the graduate school, (*b*) a less rigid division of the hours devoted to teaching in the various departments of the medical school, and (*c*) a closer correlation of clinical work with that of the so-called laboratory courses of instruction.

8. Among the acute problems of medical licensure are: (*a*) The licensing of graduates of low grade medical colleges by separate sectarian boards in Arkansas and Connecticut. (*b*) The licensing of osteopaths as physicians in a few states, notably California, Colorado and Texas. (*c*) The granting of separate boards for certain groups of "drugless" healers under a misconception of what is meant by the term "the practice of medicine," and (*d*) the importance of one standard of educational qualifications to be insisted upon alike for every one who is to be authorized to treat the sick.

III. WORK WITH HOSPITALS

1. The work of the American Medical Association with hospitals began in 1904 with the publication of the American Medical Directory and with the establishing of the "ideal standard" of medical education, including a hospital internship.

2. Three complete surveys of hospitals began, respectively, in 1912, 1915 and 1918.

3. In 1919, following the conference on medical education, the American Conference on Hospital Service was established.

4. In 1920 the work of the Council was enlarged to include all the work of the Association in connection with hospitals.

5. The first Hospital Number of The Journal of the American Medical Association was published April 16, 1921.

6. The number of general hospitals has increased from 2,440 in 1913 to 4,012 in 1920 and the total number of beds from 200,000 to 307,356. These figures do not include those in government hospitals, sanatoriums for the tuberculous and the insane, penitentiary hospitals, homes for the aged, etc.

7. There is an increasing demand for interns, due mainly to the rapidly increasing number of hospitals, but also to the fact that a larger proportion of hospitals than formerly is making use of intern service, this doubtless, in turn, being due to the better qualifications of medical graduates.

8. The Council is now conducting an extensive survey of outpatient departments of hospitals, general dispensaries, group practices and clinics for tuberculosis, venereal diseases, mental hygiene clinics, health centers, baby welfare clinics, etc., or, in brief, of all institutions that give medical service to ambulatory patients.

9. The survey shows already that there are 1,150 outpatient departments, 800 independent dispensaries, and approximately 200 clinics conducting what is properly referred to as "group practice." Including all clinics having to do with ambulatory patients, there are approximately 4,500. Complete returns will doubtless increase the figures given.

Conclusion

From the foregoing report, it will be seen that great progress has been made since the beginning of the Council's work in the elevation of standards of medical education and the improvement in quality of physicians entering practice. It is apparent, however, that instead of being diminished, the Council has a still larger function to perform in dealing with the newer problems and in doing what it can to bring the benefits of scientific medicine within the reach of the people of every community.

Respectfully submitted,

Council on Medical Education and Hospitals.

Arthur D. Bevan, Chairman,
William Pepper,
Merritte W. Ireland,
Ray Lyman Wilbur,
Samuel W. Welch,
N. P. Colwell, Secretary.

Report of the Council on Scientific Assembly

Dr. J. S. Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

To the Members of the House of Delegates of the American Medical Association:

On January 14 the Council held a conference with the secretaries of the sections of the Scientific Assembly at the headquarters of the Association. All the section secretaries were present with the following exceptions: The Section on Ophthalmology, which section was, however, represented by its chairman; the Section on Preventive Medicine and Public Health; the Section on Urology, and the Section on Gastro-Enterology and Proctology. All the members of the Council were in attendance with the exception of the President of the Association, Dr. Hubert Work, who was prevented from attending the meeting because of a serious injury to one of his principal associates.

The assignments for the meeting hours of the different sections for the 1922 annual session were announced as follows:

Sections to convene at nine o'clock in the mornings of Wednesday, Thursday and Friday, May 24, 25 and 26: Surgery, General and Abdominal; Ophthalmology; Diseases of Children; Pharmacology and Therapeutics; Nervous and Mental Diseases; Dermatology and Syphilology, and Preventive Medicine and Public Health; also one meeting of the Section on Miscellaneous Topics to present a program on Anesthesia to meet Wednesday morning, May 24.

Sections to convene at two o'clock in the afternoons of Wednesday, Thursday and Friday, May 24, 25 and 26: Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Stomatology; Pathology and Physiology; Urology; Orthopedic Surgery, and Gastro-Enterology and Proctology.

The Council assigned one of the meetings of the Section on Miscellaneous Topics for the 1922 Annual Session for the presentation of a program on anesthesia and appointed as officers for that meeting: Chairman, Dr. Isabella C. Herb, Chicago; Vice-Chairman, Dr. David E. Hoag, Pueblo, Colorado, and Secretary, Dr. F. H. McMechan, Avon Lake, Ohio.

NEW SECTIONS

The Council on Scientific Assembly has given careful consideration to the division of the Scientific Assembly into sections. The Council is of the opinion that no radical changes should be made in the sections as they are now constituted. It holds that the principle which should be followed in any changes in the sections should be one which has for its object the coordinating of the work of the present sections and combining these rather than the establishment of additional sections. There are four outstanding reasons which justify the Council in urging that additional sections shall not be established: First, it is expedient that in the sections now established an opportunity should be afforded to present the new work that has been done in the field particularly assigned to the sections, as well as in fields closely allied thereto. For example, papers on anesthesia should be presented in the various sections rather than in a special section. The Section on Surgery undoubtedly would find much interest in the various anesthetics and in the technic of their administration. The pharmacologic and therapeutic questions relating to anesthesia are proper subjects for presentation in the Section on Pharmacology and Therapeutics.

Second, the Scientific Assembly should be reduced to just as few sections as possible rather than increased by the establishment of new sections, especially when it is impossible to define a field for the new section without interference with fields assigned to already existing sections.

Third, the multiplicity of sections would be practically unlimited if it is understood that a section is to be established for each field in medicine as these fields are defined by physicians who practice the several specialties. It is conceivable that requests will be received for sections on physical therapeutics, on hydrotherapy, on anesthesia, on roentgen ray work, on radium, and the list could be greatly extended. Every one of these specialties may logically claim a section in the Scientific Assembly unless the policy recommended by the Council on Scientific Assembly be approved by the House of Delegates, which is that the present established sections shall be encouraged—so far as it is practical so to do—to provide in their programs for the presentation of papers setting forth the work of the more limited specialties, and that applications for new sections shall be considered in accordance with that principle.

Fourth, the Section on Miscellaneous Topics provides opportunity, in one, two or three meetings at any annual session, for the presentation of programs on subjects which do not fall within the scope of the other established sections. This section gives every advantage of audience and publication that the other sections afford.

Since the Boston meeting of the House of Delegates, no formal petitions for the establishment of new sections have come before the Council.

The Council again calls attention to the marked improvement in the Scientific Assembly which has resulted from the holding of but one meeting a day by each of the sections. This change was initiated by the Council on Scientific Assembly and through the cooperation of the officers of the sections was put in practice at the Annual Session in 1919. It makes it possible for the Fellow who is particularly interested in the work of a particular section to attend meetings of sections other than the one devoted to the specialty in which he has a personal interest, to visit the exhibits and in other ways to receive added benefits from the Annual Sessions of the Scientific Assembly. The plan has received the universal approval of the officers of the sections as well as of the Fellows in general.

CHANGE OF TITLE OF A SECTION

At the Boston Annual Session of the House of Delegates, the Section on Preventive Medicine and Public Health transmitted to the House of Delegates a formal request that the name of that section be changed to the Section on Preventive and Industrial Medicine and Public Health. The House of Delegates in turn referred this action to the Council. After giving the matter careful consideration, the Council recommends to the House of Delegates that the By-Laws of the Association be modified so as to provide that the title of the section in question shall be the Section on Preventive and Industrial Medicine and Public Health.

THE THERAPEUTIC VALUE OF ALCOHOL

The preambles and resolutions submitted to the House of Delegates from the Council on Health and Public Instruction and which pertained to the question of the therapeutic value of alcohol were referred to the Council on Scientific Assembly. The preambles and resolutions so referred were made the subject of a general discussion by the members of the Council, after which the Council on motion duly seconded and carried approved the following declaration; namely, that the subjects discussed in the preamble and resolutions involved scientific problems which have for a long period of time been the subjects of study by competent scientific investigators; that notwithstanding these investigations, there is no definite, generally accepted conclusion on these questions. The Council deems it unwise to attempt to determine moot, scientific questions by resolution or by vote and recommends that, under the conditions cited, the House of Delegates shall take no action at this time on the question of the therapeutic value of alcohol. In making this recommendation, the Council calls attention to the fact that it has not taken under consideration nor do its recommendations apply to any of the social, economic or moral issues which are involved in or allied to the scientific problem presented—the determination of the therapeutic value of alcohol.

THE CONFERENCE OF SECTION SECRETARIES

One of the most effective measures in coordinating the work of the several sections which the Council has been putting into effect is the holding of the annual conference with the secretaries of the sections. The Council recommends that the House of Delegates approve the holding of this annual conference and that the House request the Board of Trustees, in formulating the annual budget of the Association, to make provision for holding this conference annually.

Respectfully submitted.

J. Shelton Horsley, Chairman.
E. S. Judd. F. P. Gengenbach.
Roger S. Morris. John E. Lane.

Ex-officio.

George E. de Schweinitz,
President-Elect.
George H. Simmons,
Editor and General Manager.
Alexander R. Craig, Secretary.

ADDENDUM

(Refer page 1613, preceding Reports of Officers)

The President, Dr. Hubert Work, Pueblo, Colo., was called to the Chair, after which the Speaker delivered his address:

Address of the Speaker, Dr. F. C. Warnshuis

Members of the House of Delegates:

There is no duty or privilege more worthy of our consideration, at this the opening of our first session, than fittingly to express the honor and tribute we owe to those who have left the world better than they found it. On Oct. 21, 1921, just as the sunset waned, his life strings parted and Dwight H. Murray passed from this world to that other existence, we trust of light and love and joy. His achievements and service have been recorded in the archives of our Association. We pause at this time, in solemn reverence, to give expression to sentiments that cannot be adequately imparted in the cold type of the printed page.

It has been the privilege of many of you, as well as mine, to have known Dr. Murray for a decade or more and to have been associated with him in the activities of this House. During our periods of contact, in our discussions and deliberations, there was generated a feeling of respect and esteem for him who has departed. Unassuming in attitude and manner, void of all avariciousness, farseeing in calm, deliberate judgment, thoughtful and ever considerate of the opinions and rights of his fellow-man, eager to perceive wherein and whereby he might contribute to the greatest good of the majority, shunning the snares of the schemer and with a continued manifestation of a studied desire to subscribe his bit to the welfare of our Association, Dwight H. Murray rose to and attained a place among us that commanded the recognition that was manifested by our electing him on two occasions as Speaker of this House.

Thus, did we commune with a fellow-man whose memory we revere and cherish, whose death we mourn and whose demise has deprived us of his guiding wisdom and leadership.

There are five outstanding conditions that are related to our Association's and individual members' welfare that present themselves for definite action at this session. They are:

EDUCATION OF PUBLIC REGARDING SCIENTIFIC MEDICINE

Medical journals, during the past year, have devoted much space to comment on the future of our profession, its relation to the public and state, its organizational activities, the lack of united effort and to an implied disagreement as to representation, policies and executive leadership. There has been a preponderance of criticism characterized by a lack of constructive recommendations. It may be presumed that these discussions and expressions reflect, to a degree, that a readjustment is at hand. Their authors apparently are unable to perceive definitely the direction or scope of our future relationship in the civic, industrial, social and communal intermingling. There is evident a needless anxiety over our present position and an unwarranted desire to bring about a spontaneous change, and within a space of a few months establish a new basis and policy for our interrelation and contact with the public and its institutions. Little cognizance is seemingly taken of the fact that stable realinements rarely follow revolutions; that reforms for the betterment of conditions are not, as a rule, the outcome of inconsiderate and injudicious precipitate action. He who in calm reflection ponders on the changes that are being gradually evolved in the affairs of life realizes that we as a profession must mold and build anew certain channels of intercommunication for the future and greater application of scientific medicine to the requirements of the people. That which we have, that which we practice, is not all obsolete and inadequate. No need presses for revolutionary action in regard to the present policies of this organization. Reconstruction and reorganization are, however, necessary in certain instances. Some of the advice, some of the proposed innovations and some of the suggested policies merit deliberate consideration; others are not worthy of even passing recognition. I am certain that your judgment and wisdom will manifest itself and find expression in the enactments of this House in the solution of these problems.

There is a palpable ignorance on the part of a large number of our members in regard to our organizational activities. They do not know what has, is, or will be achieved by delegated councils, committees and executive officers. This accounts for much of the criticism that has been made in ignorance and possibly inadvisedly. There is a manifest ignorance, likewise, on the part of our members in regard to what society and government as well as business have accomplished, is planning to accomplish and the policies they are pursuing. Again, there is a failure to recognize that the public's misunderstanding of our profession, the people's misconstruction of our purposes and their misinterpretation of our principles are due largely to their lack of information regarding scientific medicine, its achievements and its potentialities. It is our neglect and failure to keep them abreast of our progress and our failure to impart to them that which we have achieved that has created this situation. The public is twenty-five years behind the times in its information in regard to the scientific physician and his work today. For this we are largely and solely culpable, for we have been so concerned in the solving of our scientific problems, our research, our observations and the application of our principles that we failed to pause from time to time to impart to the public the progress made, and the results that were being attained from the application of our proved principles and methods. We were content and too willing to remain behind a curtain of reserve which today we recognize is an error, and to correct it is our pressing concern.

I believe that no more epoch-making action can be taken by this House during this session than to adopt a plan of activity that will undertake the education of the public and acquaint it with the established tenets of scientific medicine and the methods utilized by physicians in the prevention, eradication and treatment of human ills. This educational work must be based on the proposition that, in a democracy, health is a public concern. Sound public policy and private conduct will result only from sound public and private opinion and this will come only by getting to the men and women of this nation an adequate knowledge of the ascertained facts in regard to health and disease. We are only concerned with education and must rely upon the convincing power of the truth. We should send out teachers, not advocates.

We have a Council on Health and Public Instruction. I am not unmindful of that which this Council has accomplished. However, I cannot but feel that we have permitted its activities to remain subservient to other organizational interests. We have not sufficiently concerned ourselves with the true purpose and object of that Council and have not imparted instructions or provided funds whereby it could engage in a persistent, successful, educational campaign. With due respect to the work of our other Councils, we have made this Council, the one which possesses the power to maintain and enhance our professional standing in the sight of men, the object of our least concern and interest. Into its deliberations there is not brought, except at annual formal conference, the trend of the advance or the difficulties of the first line of contact, those who attend at the bedside of the sick. In theory only it is fair to assume that its personnel receives the specter of the problems of the active practitioner, but has no direct contact with him or the demand that is made on him by the public. Time will not permit going into further detail. I am attaching hereto, for the Reference Committee's information, additional facts pertaining to the needs of this Council.

Upon deliberate and considerate thought I recommend that the following action be taken:

1. Enlarge this Council on Health and Public Instruction to ten members, and not less than five of its members to be active practitioners.

2. That the Board of Trustees be directed to make an appropriation for this coming year of not less than $75,000 to defray the expense of an active, constructive plan of public health instruction. That the Trustees, and again I am not unmindful of or discrediting the work of other Councils, if financial conditions make it imperative, be requested to cut other appropriations, retrench on the expense of or even discontinue the publishing of subsidiary medical journals and so clear the presses of the Association for service to this Council. Greater need exists for public health education and the acquainting of the public with the facts regarding scientific medicine than for certain medical journals that divert our activities. We must become more than a publishing house.

3. That the House of Delegates provide for an advisory committee to this Council, consisting of the President, the Secretary, the General Manager, the Speaker of this House and five delegates, no two of whom shall come from the same state, to meet not less than every three months for the formulation of plans of activity and the institution of field work that they and this Council should be directed to undertake with the greatest, safe expediency.

Many of our problems, problems that are creating so much of the unrest in and out of the profession, but all relating to scientific medicine, will be solved when we impart to the people the knowledge which they do not now possess. Hence the demand, the urgency, the need for the discontinuance of further temporizing methods, studies, surveys and theorizations. I am firm in the belief that this is our need and that the responsibility for the undertaking of that duty rests on you if you are concerned, as you must be, with acquitting yourselves of the trust imposed in you by those whom you represent.

HEALTH INSURANCE—GROUP MEDICINE

Compulsory health insurance never will and never can become an American institution. As our campaign of public education broadens, this fantastic, un-American machination and the fancies of its proponents will fail to arrest legislative attention and consideration or draw unto it public demand and support. There are other forms of medical practice, instigated, conducted and extended by individuals, groups and health and lay agencies that encroach on and mitigate against the interests of the individual doctor. Some of them merit endorsement and support. Others, however, require our emphatic and perhaps drastic denouncement. They are dependent, for success and extension, on the members of our profession. Regretfully we recognize that many physicians, thoughtful only of self, place their services at the command of such agencies. Such practices must not be condoned.

As an organization we have a direct obligation to our members. Likewise our members have a direct obligation to the Association and to their associates. It is unreasonable to expect that your officers and committees can attain results without your cooperation and support. You cannot sit in the galleries and in inactive attitude expect the few, by their work in the arena, to vouchsafe to you freedom from trespass on your rights. Precedents and rules of guidance for each individual must be established and must be observed by the whole without exception or favor.

A code of ethics was formulated by our forefathers for their and our guidance. In certain respects the changes that the years have brought have rendered obsolete or inapplicable some of its rules and precepts. Group medicine and group clinics as well as state medicine have come and will grow. It is for us to revamp and revise and reconstruct that code of ethics so that it will today apply to the individual physician and specialist, and, further, that it will exert a supervising direction and control over these groups of associated practitioners and medical health officials.

To that end it is recommended that there be created a revising committee that will perfect such a revision of our established code and submit their report at our next annual session.

THE TRAINED NURSE AND THE NURSING PROBLEMS

During the past few years, and particularly the last two years, there has been much discussion and considerable criticism by both professional and lay individuals of the trained nurse, nursing service, training school, curriculums for nurses and the nurse in health and industrial work. A study of these discussions, as well as personal experiences, causes one to feel that there is immediate need for the consideration of the entire subject of training schools, nursing education, hospital and graduate nursing service and the nurse's relationship to the patient, the doctor and the public. There is an interrelationship that we cannot ignore. Our interests, the interest of the public and the future interest of the nurse, demand that we concern ourselves with this problem and expedite its satisfactory solution. . . .

I am not unaware of the surveys and findings made and reached. I am also familiar with the attitude of certain nursing organizations and groups, and also with the ideals sought by lay leaders and organizations. Our profession has yet given no definite expression of its opinion and judgment. The time has come for us to do so and the public is desirous of receiving our findings and recommendations. I therefore recommend that you create a special committee, to be appointed by the President, with the advice of our Trustees, to make a thorough survey and study of the problems and submit its report and recommendation at our next annual meeting.

In connection therewith hearings should be accorded to all groups concerned in the providing of nursing assistance in the prevention and treatment of disease. Our Association should assert itself in formulating an acceptable status for the trained nurse, and the educational fundamentals requisite for her work of service.

SEMIANNUAL MEETINGS OF THE HOUSE OF DELEGATES

Some discussion has been engaged in as to whether our House of Delegates might not well meet at a time other than that during which our scientific assembly meets. To do so would be a serious error and would disassociate our membership solidarity. The question is naturally injected, Are not the affairs of our Association of sufficient moment and importance to warrant two meetings a year of this House? Would it not be advantageous, would it not materially aid in the solution of our problems and increase the scope and value of our organizational activities to hold a midwinter three-day session at our headquarters in Chicago? It would seem that such a plan would be advisable and result in maintaining a continuous scope of associational endeavor with no letup during the final two months waiting to ascertain what this House will do at its annual session. The suggestion is submitted for your consideration.

POLITICAL ACTIVITY

Legislatures, Congress and civic governments will continue with greater avidity to concern themselves with the problems of health and the work of physicians and health agencies. Health officers and health agencies are going to extend themselves to broader fields and are not going to be overconsiderate of the doctor unless he is represented in their councils and causes them to be not unmindful of his rights and work. It is with no little regret that we observe this tendency on the part of these health officials, some of whom even seek to warp to their support the prestige of our Association. When not successful they seek to attain their ends by national and state legislation. Our interests and that of the individual doctor, no matter what his location or position may be, must be conserved. We have too long been silent and permitted the individual doctor to remain the undefended party in the encroachments made on his professional labors by legislatures, Congress, insurance corporations, industry and organized meddlers of so-called "uplift movements." The individual practitioner's interests warrant our deepest concern and his future welfare merits our solicitous and combined assistance. Willing as he always has been and will be to contribute his 100 per cent. to the welfare of mankind, he should never again be made the victim and the object of such enactments as the Harrison Law, the Medicated Alcohol Rulings, the Sheppard-Towner Bill, and similar legislative enactments without our standing by his side and presenting in his behalf our associational influence and arguments for his protection against inadvised imposition and unjustified attack. Representation must be secured and made in his behalf for his individual interest is our collective concern.

Provision must be made to present his individual and the profession's collective rights and interests at all such future hearings that such bills in Congress may necessitate. In addition, this Association should and must aid our component state organizations in legislative matters arising in different states that affect the interests of our members residing in those states. Let us remember that what is stirring the world's heart, changing the face of the times and representing the form and working of the age is that intelligence, that sentiment, those thoughts and opinions whose written and spoken word is power. Such power is ours provided we formulate an acceptable ideal that will impregnate the activities of our associates in the readjustment of medical contact with the people who compose our constituency.

Therefore, if in your deliberations you adopt the recommendation made regarding the Council on Health and Public Instruction and provide for greater activities on its part, I would then further recommend that this duty of representation in behalf of the doctor individually and the profession collectively be delegated to that Council and that it be charged to call to its support the Association's resources to present our interests and maintain our rights to their furthest ability in all such legislative proposals. A legislative bureau, national in scope and activity, should be established at our headquarters.

OFFICERS OF OUR ASSOCIATION

I cannot refrain (I would be remiss if I did) from expressing appreciation and tribute to the executive officers and Trustees of our Association. For some ten years I have been in more or less personal contact with them and each succeeding year the impression becomes firmer that they are laboring in our behalf to the fullest capacity that we permit them.

Particularly do I wish to pay respects to Dr. George H. Simmons, our General Manager and Editor. That which we are, the position that this Association holds in the world today, The Journal that we own and which is the peer in the entire world of all medical journals, our Chicago Headquarters, our financial stability and our organizational prestige, are due in large measure to the executive, perceptive and diplomatic ability that he possesses. I am sure that you join me in tendering to him our expression of appreciation and continued confidence. Combined with our gratitude we are fervent in the wish and hope that years may be peaceful and long and kind ere he enter into the shadows of the foothills to rest in the eventide of life to await the final summons of that other world. As he carries on in our behalf until that time comes I want to assure him that we are indeed grateful for that which he has accomplished for our good.

CONCLUSION

This House is the open forum of the Association and its component organizations, which you as delegates represent. The floor of this House is open to every delegate for the discussion of the problems, the interests, the welfare and the future of your constituents and associates, as long as you conform to the provisions of our Constitution and By-Laws. It is not the place for the furtherance of selfish, clique or selected group interests. Mindful of all of which, I bespeak your cordial and frank cooperation in my endeavor to acquit myself of the duties that fall upon me as your Speaker during your deliberations in this, our Seventy-Fifth Annual Session.

Reference Committees

After the delivery of his address, the Speaker announced the following Reference Committees:

SECTIONS AND SECTION WORK

T. S. Cullen, Chairman	Maryland
A. E. Bulson, Jr	Indiana
J. W. Bell	Minnesota
Henry Linsz	West Virginia
W. G. Lyle	Georgia

RULES AND ORDER OF BUSINESS

Edgar A Hines, Chairman	South Carolina
E. A. Pray	North Dakota
F. T. Kidder	Vermont
George Reeding	New Jersey
D. E. McGilliway	Washington

MEDICAL EDUCATION

J. Rilus Eastman, Chairman	Indiana
E. Eliot Harris	New York

W. F. Bacon	Pennsylvania
F. B. Lund	Massachusetts
J. F. Siler	Army

LEGISLATION AND PUBLIC RELATIONS

J. H. J. Upham, Chairman	Ohio
Holman Taylor	Texas
W. R. Stiner	Connecticut
A. W. Hornbogen	Michigan
C. E. Humiston	Illinois

HYGIENE AND PUBLIC HEALTH

J. D. McLean, Chairman	Pennsylvania
A. T. McCormack	Kentucky
J. A. Pettit	Oregon
J. W. Vanderslice	Illinois
H. M. Brown	Wisconsin

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

J. E. Lane, Chairman	Connecticut
B. L. Bryant	Maine
J. S. Holmes	Florida
J. A. Witherspoon	Tennessee
L. J. Moorman	Oklahoma

REPORTS OF OFFICERS

Rock Sleyster, Chairman	Wisconsin
James F. Rooney	New York
L. H. McKinnie	Colorado
J. D. Brock	Michigan
H. G. Stetson	Massachusetts

CREDENTIALS

J. E. Rockefeller, Chairman	Iowa
R. E. Schlueter	Missouri
J. W. Barksdale	Mississippi
Earl Whedon	Wyoming
G. S. Brown	Arkansas

MISCELLANEOUS BUSINESS

Southgate Leigh, Chairman	Virginia
J. F. Highsmith	North Carolina
Albert Soiland	California
A. G. Dunn	Nebraska
J. D. Heacock	Alabama

Dr. D. W. Haines, Ohio, moved that the list of Reference Committees appointed by the Speaker be approved.

Seconded and carried.

Dr. Arthur T. McCormack, Kentucky, moved that the Speaker be authorized to fill any vacancies in the appointed list of reference committees:

Seconded and carried.

Address of President Hubert Work

The Speaker introduced the President, Dr. Hubert Work, Pueblo, Colo., who delivered the following address, which was referred to the Reference Committee on Reports of Officers.

Mr. Speaker, Members of the House of Delegates, and Ladies and Gentlemen.

The House of Delegates has before it at this Session an enticing picture, but it has heretofore been so tolerant of my suggestions that I shall address you as one who, having been much privileged, presumes upon it.

You will recall that the districting of the United States for the allocation of trustees has been twice before you. To the segregating of the United States into groups, in the interests of the Association and its members, I am wholly committed. Within recent years several medical societies have been organized designated by valleys, numbers of states or other distinguishing and limiting titles. The very formation of such medical associations is evidence of their necessity to physicians of localities and to their medical progress.

Different sections of the United States have local disease problems requiring special discussion; of little interest to physicians of the United States as a whole, and, too, physicians need wider personal contact than is now possible from the annual meetings of the Americal Medical Association or its special societies.

The long travel and time necessary for most of our membership to attend the annual meetings of the Association are prohibitive, and its great membership would otherwise make a general assembly impossible.

I am convinced that in the interests of our membership the United States should be divided into several districts, as you may determine, and that each district, in addition to electing a Trustee of the Association, should regard itself as an active section of it.

The officers and organization of these subdivisions should of course be governed by uniformity, precisely as state societies now are. They could meet in midwinter for discussion of their local problems, together with suggestions and policies to be recommended to the American Medical Association at its annual meeting.

The parent association could do the necessary printing and advertising, so that the expenses of organization usually incurred would be thus avoided. This is a time of decentralization rather than concentration of initiating officials; of expanding units rather than carrying dependencies and helpless in themselves. I continue to believe that each section should nominate to the House of Delegates its choice for a President-Elect, such nomination to be suggestive, and not obligating.

COUNCILS

The standing councils of the Association, as now organized, are properly constituted but not adequate. Their members are all essential men in other exacting fields, which exhaust their energies and compel their time. It would appear that the secretaries of these councils should have their initiative developed and their authority expanded and those of the councilors understood to be advisory only.

ORGANIZATION

Periodically, the Association is criticized by one, or a small group of members, apparently actuated by destructive motives veiled by a demand for reorganization. The charges are usually built around the complaint that the Association is dictated by a few men in their own interests. Part of this statement is true. This Association, and all others, even the National Government, is directed by a few men for the principal reason that there is no other way to do it. That it is run in the interests of these few men is not true unless the expenditure of time, thought and money, with neglect of personal business, may be so construed. It has uniformly happened that those who have tried to break in, by first breaking down, have been members who have done nothing to build up. Reorganization is a continuing process, and is best accomplished from within. The daily changes in working procedure in an organization necessitate readjustments which in itself is reorganization. Every member of the Association who has shown a disposition and aptitude and an inclination to interest himself in Association work has been sought out for his advice, placed on reference committees of the House, elected to the offices of his sections and called to headquarters for his opinions on new questions. Few realize the number of substantial Fellows who constitute the unnamed, unrecognized advisers who have had a potent voice in the management of this Association and who are a part of the reorganizing always in progress. Perhaps the growth of the Association from 8,000 to 80,000 in twenty years, the development of the vigorous special societies from its membership, and the tone of the journals published, constitute sufficient answer to the asserted necessity for a reorganization, which is interpreted to mean new officers.

THE DELEGATE

At the risk of tiresome repetition, I must again try to impress on you a real realization of the dignity, the opportunity and the importance of the office of delegate to this House. Through the state and county societies, their field is the United States and they can, if they choose, be in fact, what they are now in theory, the American Medical Association. The public is demanding that it be given the benefit of the special knowledge physicians have for the purposes of better living; that it may be applied to public questions of vital concern to them. Human life is the paramount world problem. Health is essential to it. Physicians are supported by the people, who have become restive because they are compelled to pay a fee for advice obtained on semipublic matters, and because so many physicians have so largely forgotten their plain relations to the body politic. The county medical society must become an open forum for those who support its members, and physicians may no longer seclude themselves if they would attain to their highest estate. No individual or no officer can supply the link between this powerful Association and the public, as can the delegate to this House.

CODE

We are united as a professional body under our code, but our tendency for each to go his own way is I think unfortunate. We cannot change our code if we would. We may change our interpretation of its application, for it is elastic, and applicable to any trade or profession, but its principle is a fundamental of civilization and governs all ethical human contact. Its moral aspect is the Golden Rule, and its business phase is that of fair dealing. There can be no professional cohesion without it.

"STATE MEDICINE"

"State medicine" has come to mean state aid in teaching medicine, state authority to enforce quarantine and the custodial care of a state's indigent sick. State medicine cannot be defined until its limitations have been fixed, and the public without it is beginning to believe that those of us who are opposing so-called state medicine, are against preventing disease, for state medicine as now practiced is limited to patients who are socially impossible or who are disease spreaders.

The public is entitled to know the legitimate limitations of a state's participation in the practice of medicine. States should not be prohibited from aiding in the education of medical students through their universities, while at the same time they are teaching law, dentistry, pedagogy and many of the trades.

Promiscuous medical treatment of disease, however, is not a state's function, and interference with it through any unit of government should not be tolerated by the public or by physicians. But in the last analysis, it will lie with physicians themselves whether or not states will treat the ambulatory sick it has quarantined. If physicians are not willing to do the necessary medical work, to become the agent of the state for that purpose, the state will have no option but to prescribe.

The practice of medicine must remain a process of personal contact, invoking the patient's right of selection and the direct moral responsibility of the physician, with a sympathetic reaction between the two.

An impersonal state cannot render an implied personal service. The weighing of the human element of the sick, their individual relation and response to a disease process cannot be expected from a state's hired man, although practicing medicine. It would be equally logical for the state to hire itinerant preachers, to hold services between trains, as to employ physicians on a salary to treat the sick, by contract, only when ill.

Not the least service the physician renders to his people is between illnesses; by his advice on the problems of living and his supervision and sympathy, so necessary to mutual confidence and to fixing his place in the community as a citizen.

There has been no point of contact provided by the Association for its ex-Presidents with the House of Delegates. After eighteen consecutive years of service in this House, in some capacity, I may no longer sit with you as one who belongs.

No contact of my life has afforded me the pleasure, stimulated my pride, as have your good fellowship, merciless judgments and repeated preferments. I lay down my official responsibilities to this Association with the keenest regret. I shall not again make contact with a group of men of similar quality; without thought of personal vantage; alert against surprise and influenced always for the welfare of others.

I will not attempt to thank you. There is a sadness in doing even the simplest thing for the last time, and I may not trust myself now. But I would like to say, as I am about to go, that neither the diversion of other duties I have assumed, nor time, nor distance, can rob me of the memories I shall carry away.

Address of President-Elect George E. de Schweinitz

The President-Elect, Dr. George Edmund de Schweinitz, Philadelphia, delivered the following address, which was referred to the Reference Committee on Reports of Officers, with the exception of that part of the address which discussed medical education, and this part was referred to the Reference Committee on Medical Education.

Mr. Speaker and Members of the House of Delegates:

It is a wise provision whereby he who has been chosen as President of the American Medical Association, shall, for one year prior to his induction into this high rank, serve as President-Elect. It is a wise and courteous provision whereby he is welcomed during this period to intimate acquaintance with the activities of the central office, and with the work of the great plant of which it is the nucleus, and to the meetings of the Board of Trustees and those of its Executive Committee. Except under unusual conditions, in no other way can he become familiar with the duties and responsibilities of his important office. Such opportunities having been freely offered to the present incumbent, and gladly accepted, it would seem proper that he should report briefly to the House of Delegates some of his impressions.

With The Journal and its wide influence all are familiar. Less well known, perhaps, are the expert considerations which contributions offered receive from all standpoints, constituting (and this opinion is based on a fairly large personal experience as an editor) an achievement in editorial efficiency which may be doubted is elsewhere excelled in similar circumstances. It is, therefore, proper to refer to the merits of a system which from lack of knowledge has sometimes been the subject of criticism. Let any member or Fellow of our Association, uninformed in this respect, visit the central offices, and for himself he may test the accuracy of the statement made.

The Council on Pharmacy and Chemistry has established an authority derived from the high character of its achievements, widely recognized here and abroad. This Council's investigations and its publications are of lasting benefit. Its appeal for an actively increasing cooperation of physicians and of the large pharmaceutical houses, along the suggestions made by Dr. Bevan, should not go unheeded and is herewith endorsed and emphasized. In none of the activities which pertain to our Board of Trustees does support more definitely belong than to the work of its Council on Pharmacy and Chemistry.

Directly in line with the work of this Council is the highly important report, in part prepared by three of its members, wherein is discussed the outstanding need of chemical research under more favorable conditions than exist today, devoted to the alleviation of human suffering—a report to which reference will elsewhere be made, with recommendation as to the action of this Association in relation to this important matter.

The strong appeal which the Propaganda Department is making to federal and state health officials, municipal health departments, teachers in schools and colleges, and editors of magazines and newspapers, in various parts of the world, is described in the report of the Board of Trustees. This reference to its work is made because it permits a reiteration of a recommendation that the central offices shall publish a magazine, wherein the information which the Propaganda Department and the Council on Pharmacy gathers shall be suitably arranged, edited and explained for the benefit of the lay public; wherein, too, the aims, results and value of legitimate medicine shall be clearly stated in contrast to the pretense of illegitimate practice and therapy, and to applaud the positive decision which has been reached in this respect.

The Council on Health and Public Instruction concerns itself with many widely ranged and important activities. So generous and far-reaching have been the activities, as well as the plans, of this Council that the idea presents itself that even larger usefulness might develop, were it possible, as it seems it would be, if greater concentration of its energies along certain lines were exercised. This thought was evidently in the mind of the Speaker of the House when he formulated his recommendation that the Lecture Bureau of Public Addresses should be recognized. This fits in with the suggestion which had been made and is now adopted, that through the medium of a special medical magazine for lay readers this object shall also be attained. Whether both of these plans shall be put into operation must be decided in future conference. The important point is that the public desires and needs the information, and has a right to receive it.

Either as an adjunct of the Council on Health and Public Instruction, or as a separate and new department of the central office, a Bureau on Medical Legislation should be established. As a pattern, the Medical Legislative Conference of Pennsylvania may be taken. The function of this conference, which includes members from the state association, from the State Homeopathic Society and the Eclectic Society, working in harmony, is to care for all medical legislation presented at the state capitol. All bills presented are considered by the conference, and during the session of the legislature the conference keeps in touch with the medical men throughout the state, and sees to it that its members shall consult with the legislators from their several districts. In brief, every bill concerned with health legislation is either advocated or opposed by the conference. Certain suggestions already presented to the Trustees of the American Medical Association are that a National Medical Legislative Conference shall be formed, in touch with the legislative bureau of the central offices, or as part of it, which shall look after legislation at Washington, whose object shall be to prevent vicious medical legislation, and care for the interests of the profession at the National Capitol. This proposition has met with the approval of the Executive Committee of the Board of Trustees of the American Medical Association, and is now presented to the House of Delegates for their action. It is the belief of many who have seriously considered this subject, among whom your President-Elect includes himself, that had such a legislative bureau been in operation, certain objectionable bills of national import, which have been enacted in law, might have been prevented, or at least modified. Activities along these lines have not escaped the attention of the central office, and there has been no failure of interest in this respect, so far as the present organization is concerned, but this does not lessen the need for the formation of a legislative bureau, whose prime function shall be to have in constant active consideration such responsibilities and duties.

The work of the Council on Medical Education and Hospitals and the result of its efforts are too well known to require review. Its achievements have commanded the respect and commendation of all concerned with the advancement of medical education in this country, and they demonstrate how well the purpose for which our Association was founded has been maintained. The medical schools of the first class all over our land are confronted with important problems, which, although frequently considered, are not as yet solved, or, indeed, in many instances have not approached a satisfying solution. In their varying relationships they are discussed in the report of the Council on Medical Education which will be presented today, and therefore what follows, and what shall follow tomorrow evening (prepared before this report was available), may be adjudged as a repetition. And yet these questions are so important (for certainly we are on the threshold of an elaborate, not to say drastic, reorganization, for instance, of the undergraduate medical curriculum), that no harm is likely to result if they are restated, perhaps in somewhat different terms and a few suggestions appended.

Yearly many qualified applicants (700 in one school during one year) for admission into our medical schools, ready to attempt the entrance tests, are refused because there is no room. Even if a considerable percentage of them should not succeed in meeting the entrance requirements, the remainder of the contingent would be large, and still there would be no room. Shall these men and women be allowed to drift, or shall an endeavor be made, either to place them, or, in the school concerned, to make space for them? We cannot afford, says the report of the Council on Medical Education, to have so limited a capacity in our better medical schools as to force well-qualified students into lower grade institutions. Agreed. It is reported that sixteen Class A schools, by certain changes in equipment and a certain addition to their teaching personnel, could increase the yearly enrolment of their medical students by about 1,500. This is a step in the right direction, but even so, it is not sufficient. It is a matter of record that a distinguished educator suggests that financial aid, now extended only to a few great medical schools, shall also be applied in strengthening "weak schools," to meet this emergency. During the last year many inquiries have come to the office of your President-Elect as to whether the central office of the American Medical Association is equipped to render aid, that is, aid to secure admission, to those who for lack of room are checked in their ambition to secure a first class medical education. Surely we are not willing to allow these men to drift, and thereby only too often secure entrance into low grade institutions, or, even more unfortunately, to swell the ranks of those who pose as "practitioners," unsupported by proper qualifications. Is it not, therefore, right that a committee shall be formed, as part of the Council on Medical Education, which committee shall have this matter in consideration, and be prepared to furnish the necessary information and the needed aid, as has been defined? It is recommended that this suggestion receive consideration.

Earnest, indeed, has been the attention which our Council on Medical Education has given the undergraduate curriculum, and yet all of us know it is not perfect, or near perfect. Such questions as to what old matter shall be rejected, what new matter shall be introduced, what present matter shall be recast, are still in discussion. Also, what shall be done to make a better balance of its contents to improve the art of medical teaching, and to secure a better cooperation of the various departments of each school, present problems as yet undecided. To all of these questions and problems the report of the Council addresses itself, largely in a quotation from a distinguished educator, whose clearness of thought commands universal admiration, and whose excellent suggestions are in the main endorsed; and yet even he stumbles a little in saying that "the professors of medicine and surgery can readily bring the essentials (as usually understood, it is assumed) of every specialty in their routine teaching." But the so-called specialties have reached a degree of importance in the general scheme of medical education which forbids their relegation to such a limited sphere of activity. True, he gets again into step in his recommendation that time should be provided for optional work, so that the student can enter any chosen special field for additional training; and also when he recommends that the clinician shall enter the domain now sacred to the specialists, bringing in the specialists to help him. This might better be reversed, although it may mean the same thing, by saying the specialists should enter the domain of the clinician and add such links from his forge as shall fit in with those of the clinician to make a perfect chain. This scheme was put into operation by the essayist in his department, and it was beginning to show encouraging results when the interruption of 1917-1919 intervened, and he was obliged to be absent for two years from his civilian work. The word "specialist" is an unsatisfactory designation. If the so-called specialist is worthy, he is a physician who by particular training along certain lines has acquired expert knowledge and technic, just as the internist is and has, albeit his range is a wider one. Neither, if he fulfils the obligations of his profession, can do without the other, and each must have sufficient education to recognize the indications which require cooperation.

The Council on Medical Education has at various times formed committees to make recommendations as to the construction of an "ideal" curriculum, each department of medicine and surgery being represented usually by a teacher in charge of such a department, and the results have been useful. But, because your President-Elect has, especially in the last year, had many consultations on this subject with practitioners who are not teachers in medical schools, and because of his presence during the last very inspiring meeting of the Association of State Secretaries, because he has had a number of conferences with earnest senior medical students, and finally, because he has just received an essay written by a young doctor who has just been graduated, a remarkable essay on "Medical Education from the Student's Standpoint," he ventures to suggest to the Council that a committee shall be formed whose personnel, in addition to the Chairman of the Council, shall include a few teachers of medical schools, some upstanding general practitioners, especially from outlying districts, our Field Secretary, or some of the State Society Secretaries, and carefully selected representatives from among senior medical students, or quite recent graduates (interns) whose duty it shall be to study this subject from their several viewpoints, and formulate recommendations to the Council. Well aware that this suggestion is open to the criticism that such a committee might represent discordant elements, and that no useful agreement could be reached, it is made only after careful thought, stimulated by the various conferences which have been named, in the belief that data could be accumulated and opinions would be expressed which, transmitted to the Council, would, after proper elimination and digestion, serve an exceedingly useful purpose, in enabling the Council to continue recommendations (and make rewards) pertaining to the reformation of the undergraduate medical curriculum, which surely is an outstanding problem which needs solution.

Other phases of medical education—graduate and medical, extensive education—shall receive attention tomorrow evening, and it is hoped that such recommendations as are expressed may in due course be referred to the proper committees for action. These problems also, at least so far as graduate instruction is concerned, are fully discussed in the report of the Council on Medical Education and hence require no further mention at the present time.

The problem as to what shall be done to equalize the geographic distribution of medical graduates is one which is attracting much attention, and which demands continued consideration. Some of the plans for medical-extension education, in operation and in contemplation, may be of service in the solution of this question. They are elsewhere discussed.

It is well recognized that this matter doees not pertain alone to the distribution of recent graduates, but also to physicians who for various reasons are willing to leave present locations and settle in communities more or less distant from larger centers. In general terms, regions sparsely supplied with physicians are known, but the knowledge is inexact, especially as this pertains to what may be called the chances of success, or, briefly, the opportunities. It would seem that a systematic survey of this situation is in order, and that information in this respect should be collected and filed for ready reference. As the Council on Medical Education and Hospitals is now engaged in a survey of dispensaries, group clinics, etc., it might readily add to its functions and undertake to acquire with particularity the facts and the evidence in the case in question: to constitute itself a reference bureau on the one hand, and, on the other, supply to the deans of medical schools, and to the authorities of various hospitals, information which could be utilized in meeting what in some regions is an emergency, and in many a pressing need.

While it is true that "resolutions adopted by the House of Delegates are an expression of opinion of this representative body of the medical profession of our country," it is also true, as must be evident, that occasionally a resolution may be presented and adopted which does not reflect the "majority opinion" of the membership of our Association; in other words, had this resolution come before the entire assembly, it would have been defeated. But such a resolution, it may be of large national import, cannot under our present regulations be considered in any other way. These statements are in no wise intended as a criticism of any previous action of the House of Delegates. Quite the contrary. But it is possible that in such circumstances, had the House been in possession of more information, the vote might have been different, or at least, it would have been cast with a fuller knowledge of all the evidence in case. All this is a preamble to the thought that some plan shall be evolved whereby such information shall be available, in addition to that which is brought out in discussion prior to the vote. It has been suggested, and wisely, that whenever feasible important problems, material, in short, which is sure to come before the House at its annual meeting, shall be published in the Bulletin, which has most judiciously widened its scope of activity, giving thus an opportunity for all of our Association members to express their opinions through its columns on the pending problems. A semiannual meeting of the House of Delegates, urged by the Speaker of the House, is a long step in the right direction, and his recommendation is heartily endorsed. The relation of the individual members of the House of Delegates to this matter has been clearly defined in the address of the President.

It will be admitted that for the right judgment of any man or any organization it is essential to recognize his or its good qualities before pronouncing on those which have escaped their designation or have not attained to it. Your President-Elect hence desires to express his sincere admiration of the activities of the authorities of the central offices, whose method and system and conscientious work have resulted in effective results, especially effective in consideration of the many varied questions which constantly present themselves for solution. He ventures, with all due deference, to urge a speedy perfection of the newest plans now in contemplation for an even greater attention in the future than in the past to what may be called the "profession of coordination," not alone as this pertains to the work of the various Councils, but in a larger sense as it pertains to the constituent and component societies throughout our land, and therefore to the profession at large and their and our insistent problems.

One comparatively minor matter follows: During a visit to the Far East (China, Japan, Korea), representatives of the American Medical Missionaries requested your President-Elect to ascertain whether by any plan they might form an affiliation with the American Medical Association. They feel that could such an affiliation be established, it would lessen their sense of isolation from the medical interests and activities of their home country. Their request was unofficially brought to the attention of the Board of Trustees, and is now restated for action by this House after reference to the proper committee, in the hope that the wish of these men may be realized.

This address contains no special reference to a number of important problems related, for example, to "state medicine," community hospitals, group clinics, etc., not because of any unwillingness to discuss them, but to avoid repetition, as either they shall be touched upon on another occasion, or because they form part of other addresses.

Your President-Elect desires to express his high appreciation of the courtesy which during the past year has been extended to him by the President, the Editor, General Manager, the Board of Trustees, the Speaker of the House, and many of our members, with whom he has had frequent conferences, and once more to pledge the best service of which he is capable.

Report of Secretary

The Secretary presented his report, which was referred to the Reference Committee on Reports of Officers, with the exception of that part which referred to Amendments to the Constitution and By-laws, and this part was referred to the Reference Committee on Constitution and By-laws. (See page 1613.)

Dr. Joseph A. Pettit, Oregon, moved that the reports of the various officers and reports of Councils, as printed in the Handbook, be not read in detail but in abstract form, emphasizing the essentials or pointing out any additions that might be made to these reports.

Seconded and carried.

Report of Board of Trustees

Dr. William T. Sarles, Wisconsin, Chairman, presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of Officers. (See page 1615.)

Report of Judicial Council

In the absence of Dr. M. L. Harris, Illinois, Chairman of the Judicial Council, the report was presented by Dr. Randolph Winslow, Maryland, and was referred to the Reference Committee on Amendments to the Constitution and By-laws. (See page 1622.)

Report of Council on Health and Public Instruction

Dr. Victor C. Vaughan, District of Columbia, Chairman, presented the report of the Council on Health and Public Instruction, as well as the reports of subcommittees of the Council on Health and Public Instruction, which were referred to the Reference Committee on Hygiene and Public Health, except that part discussing the establishment of a legislative council or bureau, which was referred to the Reference Committee on Legislation and Public Relations. (See page 1623.)

Report of Council on Medical Education and Hospitals

Dr. Arthur Dean Bevan, Illinois, Chairman, presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education. (See page 1627.)

Report of Council on Scientific Assembly

Dr. J. Shelton Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work. (See page 1636.)

The time having arrived for adjournment of the morning session, it was moved that the House of Delegates continue in session.

Seconded and carried.

The House of Delegates then considered new business.

NEW BUSINESS

Resolution on Prescribing of Alcoholic Liquors

Dr. J. D. Brook, Michigan, offered a preamble and resolutions on the prescribing of alcoholic liquors, which was referred to the Reference Committee on Legislation and Public Relations.

Resolution on Vocational Training for Disabled Soldiers

Dr. R. E. Schlueter, Missouri, presented preambles and resolutions condemning assignment of trainees to chiropractic schools, which were referred to the Reference Committee on Legislation and Public Relations.

Resolutions in Memoriam of Dr. Joseph N. McCormack

Dr. E. Eliot Harris, New York, presented the following:

Dr. Joseph N. McCormack of Kentucky is dead.

The pioneer work of reorganizing this Association from the chaotic condition that prevailed at the Semicentennial Celebration at Philadelphia in 1907 to the perfect working order of today was largely due to his untiring efforts as Chairman of the Committee on Reorganization. He came to New York to aid us in our plan of uniting the Association and Society, and performed similar work in unifying the profession throughout the United States. I move that a special committee be appointed by the Speaker to prepare a suitable memorial to be presented to this House.

Seconded and carried.

The Speaker stated that he would appoint the special committee later.

Resolution on "State Medicine"

Dr. James F. Rooney, New York, presented a resolution defining "state medicine," which was referred to the Reference Committee on Legislation and Public Relations.

Resolutions on Alcoholic Liquors and Governmental Medical Activities

Dr. Randolph Winslow, Maryland, presented resolutions on the prescribing of alcoholic liquors and on governmental medical activities, one of which was referred to the Board of Trustees, and the other to the Reference Committee on Legislation and Public Relations.

Resolution on Legislation

Dr. William Gerry Morgan, District of Columbia, presented a resolution, which was referred to the Reference Committee on Legislation and Public Relations.

Amendments to Constitution and By-Laws

Dr. George F. Keiper, Indiana, presented amendments to the Constitution and By-laws, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolutions on Narcotic Addiction

Dr. Charles E. Humiston, Illinois, presented resolutions endorsing House Resolution 258 introduced by Hon. L. D. Volk, which were referred to the Reference Committee on Legislation and Public Relations.

Resolutions on Medical Relations with the Public

Dr. Ben R. McClellan, Ohio, presented resolutions defining the relation of the public to the medical profession, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolutions on "State Medicine"

Dr. R. L. Green, Illinois, presented a resolution opposing "state medicine," which was referred to the Reference Committee on Legislation and Public Relations.

Dr. R. L. Green, Illinos, presented two other resolutions, one of which was referred to the Reference Committee on Amendments to the Constitutions and By-laws, and the other to the Reference Committee on Legislation and Public Relations.

Resolutions on Membership

Dr. C. Van Zwalenburg, California, presented a resolution on transfer of membership, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Amendements to the By-Laws

Dr. Thomas C. Chalmers, New York, presented amendments to the By-Laws, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolutions on Health Education of the Public

Dr. C. D. Selby, Ohio, presented preambles and resolutions on health education of the public, which were referred to the Reference Committee on Hygiene and Public Health.

Resolutions on Establishment of Legislative Bureau

Dr. George Edward Follansbee, Ohio, presented preambles and resolutions on the establishment of a legislative bureau, which were referred to the Reference Committee on Hygiene and Public Health.

Committee to Draft Memorial Resolutions

The Speaker appointed as a special committee to draft suitable resolutions on the death of Dr. J. N. McCormack, Drs. E. Eliot Harris, New York, Chairman; L. S. McMurtry, Kentucky; Holman Taylor, Texas, and D. E. Sullivan, New Hampshire.

Amendments to the Constitution and By-Laws

Dr. C. F. Mongan, Massachusetts, presented amendments to the Constitution and By-Laws, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolution on Nomenclature

Dr. Edgar A. Hines, South Carolina, presented a preamble and a resolution on simplification of medical nomenclature, which were referred to the Reference Committee on Miscellaneous Business.

Amendment to Constitution

Dr. J. H. J. Uphan, Ohio, presented an amendment to Article V of the Constitution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Adjournment

On motion, which was duly seconded and carried, the House of Delegates adjourned until 9:30 a. m., Tuesday, May 23.

(To be continued)

Fad of Replacing the Uterus.—The multitude of pessaries, intra-uterine and vaginal, which marked the displacement era of sixty years ago, have almost all disappeared into museums as antiquities or curiosities, and now the ring is almost the only survivor. In the surgical area through which we are now passing the modern counterpart of the pessary inventor is the deviser of suspensory and sling operations on the uterus. The woman with a uterus that will not sit up straight can have a tuck taken in its round ligaments, or have it held up by the ligaments being stitched to the abdominal wall, or delicately supported by the ligaments being clasped behind its back, and so on ad infinitum. The attitude of mind of these suspenders of the uterus is precisely that of the mid-Victorian pessary monger; their methods only have changed with the times, and these operations are quite as much overdone as the pessaries were, but do less harm. There is not the bad mental effect of continuous pessary wearing with the recurrent need for changing, and there is the advantage that the patient has two or three weeks in bed with a change and convalescence, together with the strong suggestion that now he errant womb has been made right she also ought to be right.—J. S. Fairbairn, *Brit. M. J.* **1**:587 (April) 1922.

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SATURDAY, MAY 27, 1922

CATERPILLAR DERMATITIS

With the approach of the season in which caterpillar rash is occasionally brought to the attention of physicians, the paucity of dependable information regarding the peculiar forms of dermatitis attributed to various species of urticating caterpillars obtrudes itself upon our consideration. Larvae producing objectionable effects on man are world wide in their distribution, the most offensive species being assigned to South American countries. A few years ago, when the brown-tail moth became prevalent in eastern New England, a peculiar type of dermatitis, urticarial in character, and attributable to contact with the insect in the caterpillar stage, was reported. It was then supposed, as had often been asserted by observers of the irritation of the skin by caterpillars in other parts of the world, that certain short structures termed "nettling hairs" are responsible for the cutaneous injury. These barbed spines of the larvae are peculiarly adapted in structure to enter the skin. In the case of the brown-tail moth they form straight, tapering, needle-pointed shafts, barbed for their entire length after the manner of certain forms of African spearheads. They vary from 0.07 to 0.2 mm. in length, with an average of $\frac{1}{250}$ inch, and are not more than 0.005 mm. in diameter at the thicker extremity. Since other hairs of either the caterpillar or the moth produce no irritation, Tyzzer,[1] who investigated the problem in the suburbs of Boston, where the outbreaks of dermatitis were common a few years ago, concluded that mere injury will not account for the pathologic manifestations. He believed that the nettling hairs, which from their shape are perfectly adapted for penetration, possess, in addition, an irritating substance which is undoubtedly an important factor in the production of the dermatitis. This substance may be destroyed by heating the nettling hairs at 115 C. either in a fluid or with dry heat, or it may be extracted from them by certain solvents, such as dilute solutions of alkalis at room temperature, or water heated to 60 C. Nettling hairs inactivated by either of these measures produce no more than a slight redness when rubbed into the skin, and probably act then merely as foreign bodies.

A similar situation has recently been revealed in respect to the pathology of the dermatitis caused by the Texan puss caterpillar, *Megalopyge opercularis,* which has become sufficiently widespread at some seasons in Texas to require public measures for the control of the pest. The severity of the sting which the larvae at all stages are capable of inflicting, with an intensity depending on the size of the offending organism, varies with its location and the thickness of the skin affected. There is at first a localized, painful area of erythema, which burns intensely. Small vesicles then appear; whitish spots on the red background and slight swelling may be present in the vicinity of the lesion. Sometimes a sting on the wrist will cause a swelling of the entire arm. There may be generalized symptoms of numbness in the part affected, or even in other limbs, with a pseudoparalysis. In children the symptoms may be particularly aggravated, according to the reports of Texan observers.

According to the investigations of Foot[2] in the Department of Comparative Pathology at the Harvard Medical School, the dermatitis caused by contact with the larva of *Megalopyge opercularis* is produced by a poison introduced by the hollow, specialized setae of its cuticular tubercles. It is not produced by the ornamental hairs or by the tissue juices of the animal. The poison appears to be of the nature of a venom, combined with protein vehicles, and may be itself a protein. It is rendered inert by boiling, or by heating to 55 C. for a considerable period of time. It is apparently stored in sacs at the base of the setae, but whether secreted there or by hypodermal glands remains to be determined. It diminishes in virulence after the larva has spun its cocoon, and is no longer active after the caterpillar is dead. The poisonous spines cause localized necrosis of the human epidermis, followed by the formation of small vesicles. The cellular reaction to the poison is chiefly lymphocytic.

The medical problems of the stinging caterpillar have received less consideration than the subject deserves; in fact, the phenomena of caterpillar dermatitis are rarely recognized as coming within the province of the physician. In addition to the brown-tail moth and puss caterpillar just referred to, the more commonly encountered North American native caterpillars with urticating propensities include the flannel-moth, *Lagoa crispata,* the buck-moth, *Hemileuca maia,* the saddleback, *Sibine stimulea,* and the Io moth, *Automeris io,* the last probably being the best known. It is not generally realized that actual contact with the caterpillars is by no means necessary for the production of the objectionable rashes. Milder dermatitis has been produced by nettling hairs blown in the air and lodged on the skin or on undergarments exposed to such chance contamination. The similarity of the sensations produced by bee sting, mosquito bite or caterpillar injury has led to the trial of alkalis for immediate application, but without any remedial effect in the case of the moth dermatitis. The fact that the toxin is apparently soluble in alcohol warns against the use of alcoholic fluids. Until the nature of the poison becomes known, there is little prospect of rational therapy in advance of the soothing lotions commonly employed.

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[1] Tyzzer, E. E.: The Pathology of the Brown-Tail Moth Dermatitis, J. M. Res. **16**: 43, 1907.

[2] Foot, N. C.: Pathology of the Dermatitis Caused by Megalopyge Opercularis, a Texan Caterpillar, J. Exper. Med. **35**: 737 (May) 1922.

THE RENAL THRESHOLD FOR GLUCOSE

The approach to a tenable conception of what is involved in the now commonly heard expression "renal threshold for sugar" has come appreciably nearer through the demonstration that the so-called physiologic glycosuria represents for the most part miscellaneous carbohydrates, other than glucose, derived from the food and excreted more or less unchanged.[1] Making due allowance for this more or less unidentified component of every urine, it now appears that in the absence of emotional complications or a subnormal renal threshold (renal glycosuria), the ingestion of pure glucose (up to 200 gm.) does not raise the level of the blood sugar above the threshold in normal persons, and no glycosuria is obtained.[2] In other words, there is no true "glycuresis," in the sense in which this word has been defined by S. R. Benedict, after ingestion of large quantities of pure glucose by healthy man. Hyperglycemia does, of course, occur in such cases; but, according to the evidence furnished by Folin and Berglund, hyperglycemia definitely below the threshold does not normally produce the slightest leakage of glucose through the kidneys, and normally not a trace of absorbed and circulating glucose is lost. When glucose is excreted, it happens because the level of the blood sugar has risen above the normal threshold, or because the threshold itself is below the normal, as in renal glycosuria.

What is the physiologic mechanism by which the loss of glucose from the blood through the kidneys is ordinarily prevented? One hypothesis has referred it to glycogen formation averting excessive accumulation of sugars in the blood. Again, it has been assumed that ordinarily sugar is "bound" in some way in the blood so that it is no longer "free" or diffusible; elimination would then depend on the failure of the hypothetic sugar combinations in the organism. The latter view seems scarcely tenable in the light of present day information regarding the condition of the sugar in both corpuscles and plasma. In contradistinction to such theories, Folin and Berglund[2] have ventured the assumption that it is absorption by the tissues rather than glycogen formation that prevents excessive accumulations of the sugars in the blood. They assume that the tissues always contain at least as high a concentration of free sugar as the blood plasma, and probably more. The glycogen formation need not begin until the tissues have begun to possess a much higher concentration than that present in fasting. Much absorbed sugar can thus be distributed without any large increases of the sugar in the blood.

The rôle of the kidneys in relation to sugar is not ordinarily different from that of other tissues. Folin and Berglund argue that the strain comes only when the holding capacity of some tissues, including the kidneys, is exceeded. As a result of the strain thus produced, the kidneys are finally compelled to make use of a more efficient process than the glycogen formation for reducing the sugar concentration in the kidney cells, and the elimination of sugar suddenly begins. If the attempt to direct attention more prominently to the avidity with which the tissues absorb sugar, like other products, from the blood becomes justified, the term alimentary glycosuria will become a misnomer.

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[1] Physiologic Glycosuria, editorial, J. A. M. A. **78**: 1462 (May 13) 1922.

[2] Folin, O., and Berglund, H.: Some New Observations and Interpretations with Reference to Transportation, Retention and Excretion of Carbohydrates, J. Biol. Chem. **51**: 213 (March) 1922.

THE EVOLUTION OF DIAGNOSTIC TECHNIC

The rapid expansion of the technic of clinical diagnosis is scarcely appreciated by those who have only recently entered the field of medical practice. To one whose experience ranges over a generation or more, the numerous and notable changes which modern science has introduced often seem little less than revolutionary. Blood chemistry was almost unknown as a diagnostic help only a few years ago; functional tests were among the rarities employed only by the most up-to-date physicians; radiology and electrocardiography were either undiscovered or unapplied. Sometimes the practitioner becomes impatient at the recital of such novelties at his command, and intolerant toward those who recommend the innovation. He avers that the newest devices are passing fads, and that too much attention to the latest test is a waste of time. Let us frankly admit that all too many recommendations of timely helps to diagnosis have failed to meet the expectations accorded to them. Nevertheless, out of the ever growing numbers of tests and procedures, a few always survive to enrich the diagnostic armamentarium of the clinician.

An instructive illustration of this fact is afforded by the recent work of Boyd[1] on nephritis in children. Her investigations show that the study of renal function furnishes at once the most reliable guide as to treatment and prognosis in nephritis. By this means, as Boyd says, a truer and earlier estimate of the gravity of the case can be made than by clinical observation alone. How, then, are the best criteria to be obtained? We are assured, on the basis of elaborate investigations of the pathology of the nephritides in children, that "tests of renal function give invaluable aid in determining the prognosis and line of treatment. The concentration test and the determination of the blood nitrogen constituents furnish the most reliable data." Furthermore, consideration of the response to functional tests, coupled with clinical observation, enables one to foretell fairly accurately the outcome in individual cases.

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[1] Boyd, Gladys L.: Nephritis in Children, Am. J. Dis. Child. **23**: 375 (May) 1922.

To interpret the meaning of a phenolsulphonephthalein test or to judge the possible abnormality of a high urea or creatinin content of the blood calls for a real appreciation of chemical pathology in its latest aspects. How worth while this newer knowledge may become might be illustrated from numerous other instances of the correlation of modern biochemical facts with bedside observation and postmortem pathology. The medical profession is conservative in its tendencies, and for the most part somewhat slow to adopt innovations not made compulsory by great emergencies. An occasional retrospect and review of recent accomplishment may help to preserve the necessary attitude of tolerance, or better of encouragement, toward those engaged in the tedious task of developing our technic.

Current Comment

CAN BOTULISM BE CAUSED BY ANTI-HOG CHOLERA SERUM AND HOG CHOLERA VIRUS?

The connection of swine with *Bacillus botulinus* is still obscure. It is interesting to recall that, prior to the work of recent American observers, *B. botulinus* had been found but once in nature unassociated with outbreaks of botulism, and that this single finding was in swine feces. The observations by Meyer, Geiger, Burke and other investigators have not shown that *B. botulinus* is a common inhabitant of the animal intestine. Graham, however, has reported finding *B. botulinus*, Type A, in the tissues of swine, and has looked on certain pathologic conditions in these animals as a manifestation of botulism. This observer, indeed, has asserted that a large proportion of commercial anti-hog cholera serum and hog cholera virus is contaminated with *B. botulinus*. From the point of view of the live stock interests it would be a serious misfortune if confidence should be shaken in the use of preventive inoculation against hog cholera. The serious nature of Graham's assertion has been pointed out by Cahill, Jakeman and Munce.[1] These investigators have undertaken to appraise the correctness of Graham's conclusions, and have repeated his experiments in detail. The results obtained by them are directly contradictory to those reached by Graham. Examination of a large number of samples of anti-hog cholera serum and hog cholera virus failed to reveal the presence of *B. botulinus* or its toxin. Experimentally, *B. botulinus* did not produce toxin in the phenolized anti-hog cholera serum, and the same thing was true when *B. botulinus* was maintained in contact with phenolized hog cholera virus. The results of these two sets of investigations are so diametrically opposed that, until further investigations are made, Graham's conclusions as to the danger of botulism poisoning from anti-hog cholera serum and hog cholera virus call for a suspension of judgment.

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[1] Cahill, Jakeman and Munce: J. Am. Vet. A. 13: 702, 1922.

DEATH OF PIONEERS IN RESEARCH ON TROPICAL DISEASE

Not many weeks have elapsed since The Journal[1] announced the death of Sir Patrick Manson, noted as an authority on tropical medicine. Now a cable from Paris announces the passing of Alphonse Laveran, another famous worker in the same cause, and winner of the Nobel prize in 1907. These two men probably did most to further, if not to found, the new science: Manson, with his demonstration that an insect, the mosquito, was the transmitting agent of filariasis (1879), and Laveran, with his discovery that malarial fever was caused by a parasite (1880). These two apparently simple facts were the solid foundation on which the science of tropical medicine was to be erected. Manson and Laveran broke the ground and opened a road which led Finlay to formulate his yellow fever stegomyia theory; Ross to identify the anopheles as the vector of malarial fever; Reed and the American Army Commission to prove so brilliantly Finlay's hypothesis, and Gorgas, Cruz, Noguchi and many others to put the new facts to practical uses and to venture further into new fields. French, English, American, Cuban and Japanese investigators have participated and cooperated in a series of epoch-making accomplishments which have benefited every spot in the world.

Association News

THE ST. LOUIS SESSION

Attendance Figures for the Annual Meeting

Reports from St. Louis, as The Journal goes to press, indicate a large attendance and a satisfactory session from every standpoint. On Monday 2,025 physicians registered, and on Tuesday 1,686, a total for the first two days of 3,711.

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[1] London Letter: J. A. M. A. 78: 1401 (May 6) 1922.

The Rebirth of France.—Before the great war, France had begun to show alarming symptoms of depopulation, said Mademoiselle Chaptal in *Mother and Child*, May, 1922. Her decreasing birth rate was supposedly due to a lax moral sense. The gigantic upheaval produced by almost five years of war might have been expected to provoke an even greater depression of moral standards. But now, from all sides, comes an explosion of life which expresses a general determination to resuscitate the nation. Paris, for example, in 1913, had 48,609 births, and 44,385 deaths, while in 1920 there were 55,770 births and 43,057 deaths. In other words, the deaths in Paris equaled 91.3 per cent. of the births in 1913, and only 77.2 per cent. in 1920. Moreover, the deaths among children placed outside Paris with wet or dry nurses was 31.6 per cent. of all births, while in 1920 they were 18.1 per cent.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Hospital to Be Rebuilt.—The Sellers Hospital, which was destroyed by fire in March, will be rebuilt and equipped at a cost of approximately $75,000. The first floor will be exclusively for negroes and the other floors for white patients. It is expected that the institution will be ready for occupancy within five months.

ARIZONA

State Medical Meeting.—The thirty-first annual meeting of the Arizona Medical Association will be held at Prescott, June 14-15, under the presidency of Dr. A. L. Gustetter, Nogales. Following the meeting an excursion to the Grand Canyon will be arranged if a sufficient number signify a desire to take this trip.

CALIFORNIA

Medical Air Delivery.—Arrangements have been made by the San Diego Zoological Society for airplane delivery of antivenom serum to be administered to persons bitten by rattlesnakes in southern California.

Hospital News.—Ground has been broken for the new hospital to be erected at San Jose. The institution will have eighty-five rooms and will be fitted with modern equipment. ——The Fairmont Hospital, San Francisco, has been sold to Dr. Andrew W. Morton for $150,000, and was opened recently as the Santa Fé Hospital, with 100 beds. This hospital has no connection with the Santa Fé Railroad.——A new $500,000 hospital will be erected immediately at Los Angeles by the Congregational churches of southern California.

COLORADO

Society News.—The Colorado Congress of Ophthalmology and Oto-Laryngology will be held in Denver, July 28-29.—— At the annual meeting of the Morgan County Medical Society, Dr. Arthur F. William, Fort Morgan, was elected president, and Dr. Nelson D. Wells, Fort Morgan, secretary-treasurer.——The Colorado Hospital Association was recently organized as a geographical section of the American Hospital Association with Dr. Richard W. Corwin, Pueblo, president.

GEORGIA

Epidemic of Rabies.—It is reported that an epidemic of rabies has occurred in the state, more than 2,147 persons receiving the Pasteur treatment during the last year. This is an increase of 1,708 over the year 1910.

State Medical Association Elects.—The following officers were elected at the recent meeting of the Medical Association of Georgia: president, J. M. Smith, Valdosta; vice presidents, P. A. Tatum, Columbus, and A. R. Rozar, Macon; parliamentarian, M. A. Clark, Macon; delegate to the American Medical Association, W. E. McCurry, Hartwell; councilors, Charles Usher, Savannah; W. C. Lyle, Atlanta; J. O. Elrod, Forsyth; M. M. McCord, Rome; H. M. Fullilove, Athens; W. A. Mulherin, Augusta, and B. H. Minchew, Waycross. The next session will be held in Savannah.

IDAHO

Hospital News.—Plans have been completed for hospitals to be erected at Payette, Sunnyside and American Falls, the latter to be a hospital for tuberculous patients. Appropriations of $178,000 were made in 1919 but building was delayed owing to the high cost of materials and labor.

Personal.—Dr. Charles F. Magee, Moscow, has been appointed consulting physician and surgeon to the Veterans' Bureau of Moscow to succeed Dr. E. W. White, who was in charge of the vocational training at the University of Idaho and Washington State College.——Dr. Earl W. Fox has closed his hospital at Hailey to accept the position of superintendent at a hospital at Craig, Prince of Wales Island, Alaska.

ILLINOIS

State Medical Meeting.—At the seventy-second annual meeting of the Illinois State Medical Society held in Chicago, May 16-18, under the presidency of Dr. Charles E. Humiston, Chicago, the following officers were elected for the ensuing year: president, Dr. Edwin P. Sloan, Bloomington; president-elect, Dr. Edward H. Ochsner, Chicago; secretary, Dr. William D. Chapman, and treasurer, Dr. A. J. Markley, Belvidere.

Personal.—Dr. James W. Pettit has been elected president of the Ottawa Memorial Association.——Dr. James E. Watson has been appointed city health officer of Peoria to succeed Dr. Laurence R. Cary.——Dr. Anfin Egdahl, Rockford, has been appointed director of the state health laboratories of North Dakota.——Dr. R. V. Brokaw has accepted the position of full-time health commissioner of Jacksonville and Morgan County. Dr. Brokaw was formerly engaged as supervisor of hygiene in the public schools of Jackson, Mich.

Chicago

Scholarship in Physiology.—Dr. Sydney Walker, Jr., has provided $200 per annum for a scholarship for the furtherance of research in physiology at the University of Chicago. This will be known as the Sydney Walker III scholarship in physiology, in memory of his son.

Infant Welfare Stations.—The health commissioner of Chicago has established child welfare units at several police stations in the city, to which mothers may bring their infants under 2 years of age for systematic examination, and receive instructions as to the proper care of the child. Milk is not supplied, and this work is only carried out at stations in which the work will not interfere with police activities.

INDIANA

Physician Presents Civil War Instruments.—Dr. Joseph L. Preston, Cloverdale, recently presented to the Indiana State Museum the amputating case his father, Dr. Albert G. Preston, bought in Cincinnati, in 1840, and which he used throughout the Civil War. The instruments are in excellent condition, although this ancient relic of early surgery is now considered obsolete.

LOUISIANA

New Hospitals.—The new Eye, Ear, Nose and Throat Hospital, under construction in New Orleans, was open for inspection, May 12.——The cornerstone of the new Shrine Hospital, Shreveport, was laid by the Masons, May 12. This institution for the treatment of crippled children will be erected at a cost of $300,000.

MASSACHUSETTS

Judgment for Physician.—It is reported in the *Boston Medical and Surgical Journal* that, after fifteen minutes' deliberation, the jury, found for the defendant, Dr. Henry Colt, in a suit for $10,000, alleging malpractice.

Samuel Fuller Memorial.—The Massachusetts Medical Society has announced that the money for the Samuel Fuller Memorial Fund will not be taken from the treasury of the society, but subscriptions of not more than $5 are requested from the medical profession. When the fund is of sufficient size, it will be presented to the Plymouth Hospital as the Samuel Fuller Memorial, for the endowment of a free bed or ward, the income only to be used for its maintenance. Dr. Fuller was the surgeon of the *Mayflower* and came over with the Pilgrims in 1620. Suscriptions should be sent to Dr. Robert M. Green, 496 Commonwealth Avenue, Boston.

MINNESOTA

Joint Meeting of Bar and Medical Societies.—The Hennepin County Bar Association and the Hennepin County Medical Society held a joint meeting in Minneapolis, May 6, to consider the present unsatisfactory methods of adducing expert medical testimony in civil and criminal courts. Resolutions, drawn up by a joint committee of physicians and lawyers, were then adopted. They provide, in part, that physicians competent to qualify as expert witnesses on subjects of controversy in litigation shall be named annually by the Hennepin County Medical Society, and from this number, any trial judge, or one or more of the litigants in any suit, may select three or more to conduct a joint examination for the purpose of furnishing expert testimony relating thereto. Further, the selection of physicians by the court shall be made only on stipulation by the litigants, and in any case in which the litigants cannot agree on the three names, each side may select one physician with the provision that the two physicians so selected may select a third. Further, the compensation for giving expert testimony shall be based on a schedule designated by resolutions of the medical society, and shall be payable through the clerk of the district court. Any physician giving testimony under this arrangement will be subject to cross examination by any one or more of the litigants in the case.

MISSOURI

Personal.—Dr. Edwin C. Ernst, St. Louis, was elected president of the American Roentgen Ray Society, central section, at the meeting held recently in Chicago.——Dr. Aden C. Vickrey, has resigned as superintendent of State Hospital No. 2, St. Joseph.

Ordinance Declared Unconstitutional.—The Humane Society states that the ordinance recently passed by the board of aldermen of St. Louis authorizing the sale of impounded dogs to reputable medical schools for experimental purposes, is unconstitutional, and the society threatens to test its validity in the courts.

MONTANA

Maternity Mortality.—Montana has the unenviable distinction of having the highest maternal death rate in the registration area, the statistics for 1920 showing that the maternal death rate per thousand living births is 9.9. In 1919, Montana had a death rate of 11.8 in 12,017 living births.

NEW HAMPSHIRE

New Community Hospital.—The contract has been awarded and ground was broken by the mayor, May 12, for the Elliot Community Hospital, to be erected at Keene. More than $270,000 was raised in a recent campaign for funds, and construction work will be started immediately.

NEW JERSEY

Midwife Fined.—It is reported that Mary Gross was arrested in March for practicing midwifery without a license. She pleaded guilty and was fined $200.

Milk Investigation.—Dr. William H. Park, director of the bureau of laboratories of the New York City Health Department, has been engaged by the board of health of Montclair to make a survey of methods of handling milk consumed in that city and to draw up a milk ordinance to replace the one now in force.

NEW YORK

Personal.—Dr. Charles E. MacDonald, Major, M. C., U. S. Army, recently received a silver star citation for gallantry in action during the operation against the Moros in the Philippine Islands, June 14, 1904.——Prof. Henry V. Arny, professor of chemistry in the College of Pharmacy, Columbia University, has been awarded the third Remington honor medal. Dr. Jacob Diner, dean of the school of pharmacy of Fordham University made the presentation at a dinner given to Professor Arny at the Hotel Pennsylvania, New York, by the New York Branch of the American Pharmaceutical Association.

Hospital News.—The new wing of the Bethany Deaconess Hospital, Brooklyn, was dedicated recently. This wing was erected at a cost of $250,000 and will accommodate 100 patients.——The Convalescent Home for Hebrew Children at Rockaway Park was formally dedicated, April 8, and will be open all the year for the care of crippled children. The old buildings have been renovated and two new wings added.——Construction has been started on the new nurses' home at the Bushwick Hospital, Brooklyn.——A $90,000 addition will be erected at the Union Hospital, New York City.——The contract has been let for the new addition to the Binghamton City Hospital to be erected at a cost of $88,000.——Plans have been completed for the new maternity hospital to be erected by the City of Lockport, which will cost $50,000.——A $125,000 addition will be erected at St. Joseph's Hospital, Yonkers.——Open air dedication exercises of the Beth Israel Hospital, New York City, were held, May 14, when the sum of $40,000 for the maintenance of the institution was raised. The new building will accommodate about 125 beds and is now ready to receive patients.

New York City

Appropriations for Medical College.—The budget of Columbia University, as approved by the trustees, contains an appropriation for the medical school of the College of Physicians and Surgeons, New York City, of $690,181, an increase of $237,507 over the appropriation of 1916-1917, before the plans for cooperation with the Presbyterian Hospital were adopted. Provision is made for increases in the salaries of many of the instructors.

NORTH DAKOTA

New Community Hospital.—A state charter has been granted to the Drayton Hospital Organization for the new community hospital which will be erected at Drayton, for which the people of that city will pay.

OHIO

Personal.—Dr. John M. Withrow, president of the Cincinnati Board of Education was elected president of the Ohio State Association of School Boards at its first annual meeting.——Drs. Roy W. Scott and Marion A. Blankenhorn, both of Cleveland, have been appointed members of the American Society for Clinical Investigation.——Dr. Mont R. Reid, formerly of Johns Hopkins University, Baltimore, has been appointed associate professor of surgery at the University of Cincinnati College of Medicine.——Dr. James A. Beer, city bacteriologist of Columbus, has been appointed full-time health officer of the city.

OKLAHOMA

New Memorial Hospital.—The contract has been awarded by the Oklahoma State Soldier Hospital Commission for the soldiers' memorial hospital to be erected at Enid at a cost of $200,000.

State Medical Meeting.—At the annual meeting of the Oklahoma State Medical Association held at Oklahoma City, May 9-11, under the presidency of Dr. George A. Boyle, Enid, the following officers were elected for the ensuing year: president, Dr. McLain Rogers, Clinton; president-elect, Dr. Ralph V. Smith, Tulsa; vice presidents, Drs. Edmund S. Ferguson, Oklahoma City, William A. Tolleson, Eufaula, and Ernest B. Dunlap, Lawton, and Dr. Claude A. Thompson, Muskogee, secretary-treasurer-editor.

PENNSYLVANIA

Removal of Offices.—The offices of the Allegheny County Medical Society and the Pittsburgh Medical Bulletin have been moved to larger quarters at 5075 Jenkins Arcade, Pittsburgh.

Hospital News.—It has been announced by the department of public welfare that hospitals of the state expecting state aid will be required to establish a credit department similar to those maintained by business firms. This department will investigate and pass on the financial status of patients, in determining whether or not they should be cared for as charity or part pay patients.——The Allentown Hospital Association has purchased a site on which a hospital will be erected in the near future.——The cornerstone of the Northern Liberties Hospital, Philadelphia, was laid, April 2. The governor and the mayor participated in the ceremonies. The institution will be erected at a cost of $100,000.——The Baer Maternity Hospital, Allentown, has changed its name to the Baer Hospital for Women.——The contract has been awarded for the construction of the new Homestead Hospital building at Pittsburgh, to be erected at a cost of $189,000.

Philadelphia

Memorial to Dr. Everitt.—The Wilson College Club of Philadelphia has raised $800 as the beginning of a memorial fund for Dr. Ella B. Everitt, a trustee of the college, who was killed in an automobile accident last January.

Health Center.—The Germantown Health Center was inaugurated at the Morton Street Nursery, May 4, under the auspices of the Visiting Nurse Society. A medical advisory and working committee of twenty-five physicians, with Dr. Maurice J. Karpeles, chairman, and Dr. O. J. Day, secretary, are cooperating in the work.

SOUTH DAKOTA

State Medical Meeting.—At the annual session of the South Dakota State Medical Association, held in Huron, May 16-18, under the presidency of Dr. George S. Adams, Yankton, the following officers were elected for the ensuing year: president, Dr. Gilbert G. Cottam, Sioux Falls; vice presidents, Drs. Francis E. Clough, Lead, Robert L. Murdy, Aberdeen, and William R. Ball, Mitchell, and secretary-treasurer, Dr. Robert D. Alway, Aberdeen. The 1923 session will be held in Watertown.

TENNESSEE

Withdraw Aid from Clinic.—The venereal disease clinic at Chattanooga, which has been operated at a cost of $8,000 a year, of which the city paid two thirds and the state one third, will be closed, owing to a notice received that state aid will be withdrawn, June 30, as sufficient state and federal funds are not available.

TEXAS

State Medical Meeting.—At the fifty-sixth annual session of the State Medical Association of Texas, at El Paso, May 9-11, the following officers were elected for the ensuing year: president, Dr. Joseph D. Becton, Greenville; president-elect, Dr. Arthur C. Scott, Temple; vice presidents, Drs. Foster R. Winn, Alvin, Charles P. Yeager, Kingsville, and James A. Daniels, Carthage; treasurer, Dr. Khleber H. Beal, Fort Worth, and secretary-editor (reelected), Dr. Holman Taylor, Fort Worth. It was decided that no effort be made definitely to establish a policy as to state medicine, until it could be determined exactly what the term means, each case to be decided on its merits, and the principle to be considered being whether or not the practice denominated as state medicine constitutes organized, subsidized competition for the practitioner, whose interest is the interest of those he serves.

VIRGINIA

Personal. — Dr. R. Lloyd Williams, Norfolk, has been elected to fill the unexpired term of Dr. J. J. Miller, deceased, as councilor of the Medical Society of Virginia.——Dr. Percy Harris, Scottsville, has been appointed city physician of Lynchburg, to succeed Dr. Gilbert Crank.

Epileptic Colony to Be Enlarged.—Construction on a new dormitory to accommodate fifty women will shortly be started at the Virginia Epileptic Colony. An appropriation of $42,500 was recently made for this purpose and a similar appropriation will later be made available for construction of a dormitory for men. The colony now has 296 men and 231 women patients, the latter including epileptics and feebleminded.

GENERAL

Relief Workers Suffering from Typhus.—Three members of the American Relief Association stationed at Moscow, Russia, are suffering from typhus contracted in their work among the starving population.

Peking Union Medical College.—Prof. Donald D. Van Slyke, Ph.D., Rockefeller Institute for Medical Research, New York City, has accepted an appointment as visiting professor in biologic chemistry at the Peking Union Medical College, China, for four months beginning with the fall term of the next academic year.

FOREIGN

American Women's Hospitals.—The entire medical work of the districts of Ismid, Erivan and Alexandropol has been taken over by the American Women's Hospitals, in cooperation with the Near East Relief Committee of New York.

Australian Medical Elections.—At the annual meeting of the New South Wales Medical Association, held in Sydney, March 22, Dr. T. W. Lipscomb was elected president of the association and Dr. W. F. Litchfield, vice president.——At the annual meeting of the Tasmanian Branch of the British Medical Association held at Hobart, February 22, Dr. G. H. Hogg was elected president and Dr. E. Brettingham-Moore, secretary.

Japanese Medical Congress.—The sixth annual session of the Japan Medical Congress was held at Kyoto, April 1, and seventeen sectional meetings were opened, April 2-5, under the presidency of Dr. T. Araki, Kyoto. More than 3,000 members were present. Dr. T. Mita, Tokyo Imperial University Medical College, and Dr. R. Torikata of the Kyoto Imperial University Medical College, gave addresses at the meeting. The next session will be held at Tokyo in 1926, under the presidency of Dr. S. Sato.

Personal.—Dr. Athelstan John H. Saw has been elected chancellor of the University of Western Australia to succeed Archbishop Riley.——Dr. J. S. McArdle, professor of surgery at the University College, Dublin, and senior surgeon at St. Vincent's Hospital, at a banquet given him in Dublin in April, was presented with his portrait in oils, a sum of money to found a perpetual surgical prize of $100 at St. Vincent's Hospital, a gift of money to provide a gold medal in surgery for competition among the students of University College, and an automobile.——Dr. Fernand Widal, professor of clinical medicine, University of Paris, has been elected a member of the Academy of Sciences of Sweden.——A party of over seventeen French physicians has recently taken a trip to Spain, headed by Professor Roger, dean of the Paris medical faculty. They represent various universities, the medical press, etc. Labbé, Chiray and Weill-Hallé are from Paris, and Canuyt from Strasbourg. They expected to visit all the university centers in Spain, and our Spanish exchanges relate that they are being given a rousing welcome.——Prof. John Berg of Stockholm was elected an honorary member of the German Surgical Society at its recent congress, which had an attendance of 2,000.——Dr. G. Pevera of Novara, Italy, has been presented by the French government with a gold medal in appreciation of his work in combating epidemics during the campaign in Macedonia.

Deaths in Other Countries

Dr. **Edward Henry Taylor**, president of the Royal College of Surgeons, Ireland, and regius professor of surgery at Dublin University.——Dr. **Robert Shingleton Smith**, president of the Winsley Sanatorium, Bath, England, aged 76.——Dr. **H. W. Kaye**, director of the ministry of pensions medical department, London, commander of the Order of the Crown of Italy, April 21, aged 47.——Dr. **A. Laveran**, professor at the Pasteur Institute, Paris; recipient of the Nobel Prize in 1907; famous for his research work in malaria and lethargic encephalitis, May 13, aged 77.——Dr. **J. A. Raíces**, a prominent syphilologist and hygienist of Buenos Aires, member of the city council.——Dr. **Julius Frandsen**, chief of the Aarhus Hospital in Denmark, a frequent contributor to surgical literature, aged 60.——Dr. **J. Acero** of the Instituto Rubio at Madrid.——Dr. **Emiliano Núñez** of Havana, long chief of the Mercedes Hospital, at an advanced age.——Dr. **O. E. Nyström** of Göteborg, aged 55.——Dr. **Torres Casanovas**, professor of surgery at the University of Barcelona, one of the directors of the *Revista Española de Medicina y Cirugía.*

CORRECTIONS

"Visualizing Our Composition."—In The Journal, May 6, page 1393, in the editorial with this title, it was stated "the iodin in the entire blood amounts to but 0.01 gm., or an average dose of atropin." Obviously this should have been "1/100 of a grain."

Philadelphia.—In The Journal, May 20, p. 1546, it is stated that the College of Physicians adopted a resolution on the Pasteur centenary. We are informed that the resolution was introduced but not adopted. It is also stated that Dr. Fiske read a paper at this meeting. The secretary of the college writes that Dr. Fiske's paper was withdrawn from the program.

Government Services

Clinic for Veterans

An entire floor in an office building in Kansas City, Mo., will be utilized as a clinic for ex-service men. Equipment valued at $40,000 has already been installed. Examinations for ratings and compensations will be the primary object of the clinic and patients will be treated for ailments contracted while in the service. The clinic will care for 150 daily. The staff, consisting of twenty-two consultants, hydrotherapists, physiotherapists, psychiatrists, orthopedists and eye, ear, nose and throat specialists will be in daily attendance, under the direction of Dr. Paul F. Stookey and J. R. Smiley. A dispensary will be equipped for the outpatient department with a drug room in charge of a registered pharmacist, and a roentgen-ray room with developing apparatus will be operated in connection with the clinic.

Employment of Ex-Service Men

The U. S. Veterans' Bureau announces that they have 130,738 ex-service men in training, who are receiving instruction in every trade, industry and profession. They are completing their courses at the rate of 500 a month, and every person completing a course of instruction has become a skilled workman. The bureau, which is now endeavoring to have these men employed as soon as they complete their courses, requests that people wanting trained personnel communicate with the rehabilitation division of the bureau in Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 1, 1922.

Insanity as a Defense for Murder

The trial of one Ronald True for murder is of considerable nportance as regards the question of criminal responsibility. Ie strangled a woman, after spending the night at her flat, nd decamped with her jewelry. The defense was insanity. Ie had fallen several times in an aeroplane during the war, nd was addicted to the use of morphin. The prisoner was ertainly an abnormal and dangerous person. He was very oastful, carried a loaded revolver always, and talked of ounding a "murder club." Abundant medical evidence was iven that he was insane, which was not disputed by the rosecution. The judge said, in summing up: "Insanity rom the medical point of view is one thing; insanity from e point of view of the criminal law is another. Mere love f bloodshed is not of itself insanity. Boastfulness is not f itself insanity. There must be mental disease before there an be insanity from the point of view of the criminal law." Referring to the celebrated McNaughton case, which since 343 has governed the question of criminal responsibility, nd which says that for insanity to be accepted as a defense e prisoner must either not have known the physical nature f the act he committed or not have known that it was wrong, e judge said that he would put the law to the jury in such way as to make possible a different understanding of the ubject, in advance of the ruling in that case, and which he elieved represented the views taken more than once by the ourt of criminal appeal and by many experienced judges. Ie put these questions to the jury:

1. Did the prisoner at the time of the murder suffer from mental disasc? 2. Did he, at the time, suffer from such defect of reason, such isease of the mind, that he did not know the physical nature and uality of the act? If he did not he would be guilty, but insane. 3. Did e know that what he was doing was morally wrong according to the tandard of his fellow citizens? If he did not, there again the verdict ould be; "Guilty, but insane," although the prisoner was aware that hat he was doing was punishable by law. Even if the prisoner knew e physical nature of the act, and that it was morally wrong and unishable by law, and yet was by mental disease deprived of the ower to control his actions, then the verdict should be "Guilty, but isane." But this exemption should be applied with great care. It ould never do to diminish unduly the doctrine of responsibility for riminal acts.

The jury found the prisoner guilty of murder.

Dispenser's Fatal Mistake in Preparing an Antimonial Solution for Injection

An inquest was held on the body of a man, aged 34, who as treated at a hospital for bilharziasis. He was given travenous injections of sodium and antimony tartrate in creasing doses. After the last, he flushed considerably. t was found that the dispenser had made a miscalculation, ith the result that the solution was ten times too strong, e calculation being based on 100 instead of 10. The man ied two days later. The dispenser was a woman of seven r eight years' experience. The coroner said that the quesion for the jury was what amount of blame fell on the disenser, who seemed to be competent and who had had wide xperience. A genuine mistake that was in no way connected ith negligence, recklessness or indifference to consequences as very different from gross and culpable negligence, and e jury would probably think this was a mistake that might ccur to any one in the course of his work. The jury eturned a verdict of "death from misadventure."

The National Council for Mental Hygiene

The formation of this council has already been announced these columns. A well attended inaugural meeting has been held. A cordial and sympathetic message of welcome was received from the National Committee of Mental Hygiene of America. Sir Humphry Rolleston, president of the Royal College of Physicians, referred to the importance of detecting early functional disturbances. It was often said that we were all more or less on the way to being mad. At all events, we must not look on mental disorder as being somewhat rare or, if it affected ourselves, feel any shame on that account. The aims of the National Council were extraordinarily wide:

1. The encouragement, correlation and organization of means of communication between the various societies and associations concerned with mental hygiene. 2. The association with other national councils to form an international league for combined action and interchange of knowledge. 3. The study of the causation and prevention of mental disturbances, which are extremely common in this and other countries, and which have increased since the beginning of the war, including the study of environment, heredity and various poisons, such as alcohol and lead, the dangerous trades and syphilis. 4. The inclusion of mental hygiene as a permanent subject in medical education. 5. The establishment in general hospitals of special clinics for the early treatment of mental disorders, in such conditions as would remove the public prejudice against the word "mental," which implied that the person was not stable. 6. Improvement of the conditions attending treatment of mental disorders, particularly in the early stages, when a great deal of good can be done at home by the institution of social service. 7. Judicious propaganda.

Dr. Henry Head pleaded for the coordination of the results of highly specialized scientific work relating to the mental health of the nation. Mental hygiene was as important as sanitation. One said, in a relieved voice, "It's only nerves"; but so-called nerves produced more individual and corporate misery than cancer. They were evidence that something was wrong beneath the surface of our mental life. Had a knowledge of mental hygiene been more prevalent, we should have been spared the crazy exhibition of suggestion to which this country had recently been exposed (referring to the Coué lectures).

The Evolution of the Human Intellect

Prof. Elliot Smith is delivering the Morison lectures at the Royal College of Physicians, Edinburgh, and has taken for his subject "The Evolution of the Human Intellect." In his opening lecture, he said that it was now half a century since the serious discussion of man's origin began. But during all this time there had been a strange reluctance to attack the essential problem: how the human family came to acquire its chief distinction, intellectual superiority over all other living creatures. There had been much learned argument regarding the influence of the adoption of the erect attitude, the liberation of the hands from the function of locomotion, the loss of the tail, the acquisition of articulate language, and the loss of the hairy coat. But the real problem of the factors that so shaped the development of the brain as to make it the instrument of high powers of discrimination and foresight, and gave it the aptitude to put the hands and the muscles of speech to fuller and more skilled use, had never been seriously investigated.

Yet it could not be denied that the emergence of human traits was the result of these changes in the brain. In 1859, Darwin recognized the importance of this problem, but since then it had been almost ignored. Casts of the skulls of primitive members of the family, such as the ape-man of Java, the dawn man of Piltdown, and the recently discovered Rhodesian man and Neanderthal man, had shown a series of types differing from *Homo sapiens*. Thus, it became possible to appreciate the vast changes which had occurred in the human brain since it first came into being; and also to recognize that the assumption of the erect attitude and the perfection of the hands were not the essential causal factors in the evolution of man, but results of the attainment of human rank and the acquisition of a brain capable of bringing about more delicate manipulations and making man upright. Important discoveries of fossil apes and equally important researches in comparative anatomy had, within recent years, definitely established the main lines of the pedigree of the human family extending back to the dawn of the tertiary period, and showed the factors responsible for the progress from a primitive mammal like a jumping shrew, through lemurs, lemuroids, the monkeys and the tailless apes, up to the ancestors of man himself. Study of the critical stages of this ancestry revealed that the essential factor in initiating this far-reaching process of intellectual development was the cultivation of vision by an arboreal animal which retained sufficient plasticity of structure to adapt itself and make the most of the opportunities which this wider vision of the world conferred. Precisely how this fuller use of the eyes for guiding and directing movements and for acquiring information acted in stimulating and developing the chief instrument of the mind will be discussed in the subsequent lectures.

PARIS

(From Our Regular Correspondent)

May 5, 1922.

Exchange of Lecturers Between the Universities of London and Paris

The first of a series of six lectures by English clinicians will be given, May 6, at the Faculty of Medicine of Paris, by Sir Sidney Russel-Wells on "The Circulatory Effects of Mitral Stenosis and Aortic Regurgitation." The lecturers and subjects for the remainder of the series are: Sir Wilmont Herringham, "Trench Fever"; Dr. Sampson Handley, "Lymphatic Pathology with Special Reference to Malignant Disease"; Prof. E. H. Starling, "The Mechanism of Compensation in the Heart"; Mr. H. J. Waring, "Acute Pancreatitis: Its Diagnosis and Surgical Treatment," and Prof. G. Elliot Smith, "Stereoscopic Vision and the Evolution of Man." Lectures by Sir Wilmont Herrington and Professor Starling will be delivered in French, and the others in English. May 22, 25 and 31, three advanced lectures under the auspices of the University of London will be delivered by French professors: Dr. F. Widal, professor of clinical medicine of the Faculty of Medicine of Paris, on "Antianaphylaxie;" Dr. H. Vaquez, professor of clinical therapeutics of the same faculty, on "De l'erythrémie (maladie de Vaquez-Osler)," and Dr. J. Babinski, associate professor, on "Des réflexes de défense." These lectures will be given in the Royal Society of Medicine.

Acclimatization and Cultivation of the Camphor Tree

Japan is the land of choice for the cultivation of the camphor tree and, as I have mentioned in previous letters (The Journal, Feb. 14, 1920, p. 473, and March 18, 1922, p. 830), it holds, at present, the monopoly for the production of natural camphor. To enable its citizens to control the celluloid industry, the Japanese government has, during the last few years, placed several restrictions on the export of raw camphor. American and European buyers have, therefore, been looking elsewhere for the product. Prof. A. Rolet, of the Agricultural School of Antibes, published in the *Revue générale des sciences pures et appliquées* a study of the principal regions where the cultivation of camphor might perhaps be successful. The camphor tree of Formosa *(Cinnamomum camphora)* grows very well on the coast of Algeria, and Dr. Trabut of Algiers has seen some very fine specimens in various nearby localities; for instance, in Algiers, Blida, Bougie, El-Milia and El-Hanser. This botanist has encouraged its culture for the camphor to be obtained from its leaves. In 1919, the bureau of forestry planted several acres of the tree in the forest of Doumia, the saplings having been supplied by the experimental garden in Algiers. In Italy, *Laurus camphora* is acclimatized in Naples, and near Rome, Pisa, Florence, the Riviera, and Isola Bella. In the Malayan islands, the first seeds of *Cinnamomum camphora* were planted in 1904, and the trees seem to be as fine today as those of the same age growing in Japan. Camphor trees are found also in Egypt, East Africa, and the islands of Madagascar, Reunion, Mauritius, Canary and Hawaii, and in Australia, California and South Carolina.

Dewey says that the northern limits for the culture of the camphor tree in the United States are Charleston and Summerville, S. C., Augusta, Ga., and Oakland, Calif. For fifty years, the camphor tree was cultivated in Florida as a garden plant or for hedges, but in 1905 gardeners began to ship a great number of the plants to other parts of the Southern states for the extraction of camphor, with the result that in 1912 the importation from Japan dropped considerably. It seems that there are many countries in which the camphor tree can be cultivated, but it does not grow rapidly; and as it requires a good soil and exposure, it seems to be virtually impossible, from an economic standpoint, to wait forty or fifty years for the development of a tree before felling it and distilling all its product. The cost of labor for the extraction of camphor from trees grown on plantations is also to be reckoned with, and we must ascertain whether it will be possible to meet the competition of camphor from Formosa and China, which is produced without much expense and is obtained from wild trees.

The Antituberculosis Campaign in France

A book recently published by the National Committee Against Tuberculosis, entitled "L'armement antituberculeux en France," gives some valuable information on antituberculosis societies in each department. The *Journal des praticiens* remarks, in an editorial, that the title of "armement antituberculeux" sounds hollow, as we are not armed against it and tuberculosis continues its destruction. The book undoubtedly makes an impression on the reader on account of the number of organizations mentioned throughout its pages. "What a number of dispensaries, preventoriums, fresh air resorts, sanatoriums, agricultural colonies, reeducation schools and honorary committees, at the head of which figure the names of presidents, ministers, a cardinal, bishops, rabbis and heads of reformed churches!" says the journal. Unfortunately, this armament made up of great men is not sufficient, if the cause of the disease is not attacked: alcoholism, the multitude of saloons, lack of hygiene, etc. "Physicians remind us," says the journal, "of industrious ants persisting in reestablishing order and harmony in their hill, which some one is continually striking with a cane. The strokes of the cane represent the shameful encouragement given by the government to the aristocracy of saloon and inn keepers, who exert a great influence on elections."

Marriages

Bruce Marion M. Phelps, Lowville, N. Y., to Miss Mary Azelie Hibbin of New Orleans, at Tela, Honduras, April 28.

Benjamin Blanton Dutton, Jr., Winchester, Va., to Miss Anne Lougheed Carson of Riverton, Va., April 19.

John Howard Neall, Takoma Park, Md., to Mrs. Mamie Wilde Paulson of Washington, D. C., recently.

Arthur Bryan Carr, War, W. V., to Miss Annie Crenshaw Armstrong of Richmond, Va., April 20.

Arthur William Kenah Akerley, Newport, R. I., to Miss Emmeline Cleeland of St. Louis, April 15.

James C. Wolfe, Bloomfield, N. J., to Miss Lillian Mott Cook of Branchville, N. J., April 1.

Stanley M. Titus, Spokane, Wash., to Mrs. Monroe K. Miller, at San Francisco, March 30.

Edgar W. Loomis to Miss Addie Jane Walker, both of Dallas, Texas, March 15.

Deaths

St. Joseph Buford Graham ⊕ Atlanta, Ga.; Medical Department, University of Louisville, Louisville, Ky., 188; formerly United States health officer of Savannah; specialized in pathology; member of the Royal Society of Public Health of London, England; was decorated by the American and Canadian governments some years ago for heroism, when he rescued a ship's crew of twenty-one men; was found dead in his laboratory, May 2, from the effects of poison taken inadvertently, aged 57.

Samuel Rapp ⊕ New York City; Bellevue Hospital Medical College, New York City, 1875; formerly coroner of Rio Grande and Hinsdale counties; member of the Metropolitan Medical Society, Society of Medical Jurisprudence and the Medico-Legal Society, New York City; died, March 20, aged 66.

Howard E. Dean ⊕ Braddock, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1904; formerly on the staff of the Hospital of the University of Pennsylvania, Philadelphia; surgeon to the Braddock General Hospital, where he died, May 3, aged 43, from uremic poisoning.

Alfred Helmholtz Riedel, New York City; Long Island College Hospital, Brooklyn, 1897; ophthalmologist to the West Side Dispensary, St. Marks Hospital, Knapp Memorial Hospital and Vanderbilt Clinic; died, May 8, aged 49, from an overdose of poison, presumably self-administered.

Robert Gamble Cabell, Jr., Richmond, Va.; Medical College of Virginia, Richmond, Va., 1870; for fourteen years superintendent of the City Home Hospital; Civil War Veteran; also a druggist; died suddenly, May 7, aged 74, at the Stuart Circle Hospital, from heart disease.

Jesse M. Garlington, Ottawa, Ill.; Missouri Medical College, St. Louis, 1869; Civil War veteran; for twenty-three years chief surgeon for the western division of the Baltimore and Ohio Railway; died, May 6, aged 76, at the Ryburn Memorial Hospital, following an operation.

William Graham Bryson, Elgin, Ill.; Medical Department of Columbia College, New York City, 1866; McGill University Faculty of Medicine, Montreal, Que., Canada, 1867; died, April 28, aged 80, at the Sherman Hospital, from cerebral hemorrhage.

James Daniel Murphy, San Francisco; Medical Department, University of California, San Francisco, 1896; member of the Medical Society of the State of California; died, May 6, at the St. Francis Hospital, aged 48, from acute appendicitis.

Thomas Joseph Calkins, Cleveland; Georgetown University School of Medicine, Washington, D. C., 1900; member of the Ohio State Medical Association; on the staff of the St. Alexis Hospital; died, May 8, aged 52, following a general breakdown.

Elmer Clay Fahrney, Hagerstown, Md.; Medical Department of Columbia College, New York City, 1889; formerly surgeon for the Pennsylvania Railroad and the Red Star Steamship Line; died, April 23, aged 60, at the Washington County Hospital.

Charles Kearns, Sr., Covington, Ky.; Medical College of Ohio, Cincinnati, 1863; member and at one time president of the Kentucky State Medical Association; Confederate veteran; died, April 30, aged 86, following a long illness.

Charlie C. Crawford, Bienville, La.; Memphis Hospital Medical College, Memphis, Tenn., 1901; member of the Louisiana State Medical Society; was shot and killed while driving his automobile, April 24, aged 42.

Joseph Francis Nutz, Kansas City, Mo.; University Medical College of Kansas City, Mo., 1909; served in the M. C., U. S. Army, during the World War, with the rank of captain; died suddenly, May 4, aged 42.

John Knox Brown, Brookville, Pa.; Jefferson Medical College, Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; died, April 27, aged 62, following an operation for appendicitis.

Charles Clarence Moore, Washington, Ind.; Louisville Medical College, Louisville, Ky., 1891; served in the M. C., U. S. Army, during the World War; died, May 2, aged 55, from cerebral hemorrhage.

Charles E. Milligan, Winchester, Ind.; Physio-Medical College of Indiana, Indianapolis, 1890; member of the Indiana State Medical Association; died suddenly, May 5, aged 59, from heart disease.

Frederick V. Dunn, Camden, N. J.; Jefferson Medical College, Philadelphia, 1898; member of the Medical Society of the State of New Jersey; also a pharmacist; died, March 23, aged 57.

John A. King, Springfield, Ill.; Eclectic Medical Institute, Cincinnati, 1883; died, May 1, at the St. John's Hospital, aged 68, from gangrene, following an operation for amputation of the foot.

James A. McCroskey, Davenport, Iowa; Iowa Eclectic Medical College, Des Moines, 1891; Civil War veteran; died, April 29, aged 82, at St. Luke's Hospital, from influenza.

Everett T. Almon, Mortons Gap, Ky.; Vanderbilt University Medical Department, Nashville, 1880; member of the Kentucky State Medical Association; died, March 29, aged 71.

William W. Harris, Kansas City, Mo.; University of Virginia Medical Department, Charlottesville, 1857; Confederate veteran; died, April 19, aged 88, from acute bronchitis.

Irvin O. Allen, Bath, Ind.; Louisville Medical College, Louisville, Ky., 1898; member of the Indiana State Medical Association; died, April 27, aged 56, from pneumonia.

William M. Smith, Springfield, Mo.; Rush Medical College, Chicago, 1870; member of the Missouri State Medical Association; Civil War veteran; died, April 24, aged 79.

J. Bonnar Bates, Gloversville, N. Y., Hahnemann Medical College of Philadelphia, 1898; formerly president of the Gloversville Board of Health; died, April 15, aged 50.

Allan J. McDonald ⊕ Aspen, Colo.; University of Michigan Medical School, Ann Arbor, 1890; formerly physician to St. Luke's Hospital, Denver; died, April 17, aged 64.

Edward Steptoe King, Sharpesburg, N. C.; University of Maryland School of Medicine, Baltimore, 1889; died, April 11, aged 59, at Statesville, from cerebral hemorrhage.

J. Mandiville Easton, Detroit; Homeopathic Medical College of Missouri, St. Louis, 1898; member of the Michigan State Medical Society; died, February 23, aged 62.

Edwin Eugene Smith, Sioux Rapids, Iowa; Eclectic Medical Institute, Cincinnati, 1898; died suddenly from heart disease, while cranking his car, April 28, aged 48.

Dalton L. Phillips, Oak Grove, Mo.; Kansas City Medical College, Kansas City, Mo., 1897; died, April 25, aged 55, from influenza and pneumonia.

Floyd J. E. Westgate, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1901; died, May 15, aged 60, from acute anemia.

George W. Mingos, St. Louis; Hahnemann Medical College and Hospital of Chicago, 1880; died, April 29, aged 76, following a long illness.

Charles A. Simmons ⊕ Chicago; Northwestern University Medical School, Chicago, 1896; died, May 17, aged 48, from ulcer of the stomach.

William Pattison, Oklahoma City; Hahnemann Medical College and Hospital, Chicago, 1865; died, March 21, aged 89, from senility.

William R. Seat, Lebanon, Tenn.; University of Nashville Medical Department, 1873; died, April 29, aged 75, from influenza.

Henry Clay Newell, St. Johnsburg, Vt.; Dartmouth Medical School, Hanover, 1864; Civil War veteran; died, April 29, aged 86.

N. C. Proffitt, Kingston, Texas; Gate City Medical College, Texarkana, Texas, 1907; was found dead in bed, April 5, aged 74.

Jacob G. Nau, Carroll, Ohio; Miami Medical College, Cincinnati, 1876; died, February 21, aged 72, from pneumonia.

Alfred Henry Childs ⊕ Dublin, N. H.; Medical School of Harvard University, Boston, 1901; died, April 29, aged 45.

Charles Bader, Nashville, Tenn. (licensed, Tennessee, 1891); died, April 15, aged 60, from arteriosclerosis.

Charles W. Hains, Tampa, Fla.; Homeopathic Hospital College, Cleveland, 1883; died, March 28, aged 62.

William L. Goodell, Effingham, Ill.; Rush Medical College, Chicago, 1866; died, April 28, aged 76.

J. T. Knox, Cincinnati; Medical College of Ohio, Cincinnati, 1875; died, April 26, aged 75.

Russel E. Finch, Gladwin, Mich. (licensed, Michigan, 1900); died, April 28, aged 72.

⊕ Indicates "Fellow" of the American Medical Association.

Correspondence

"IS CODEIN A HABIT-FORMING DRUG?"

To the Editor:—Dr. Watson, Baltimore, brings up the subject of the habit-forming properties of codein. This gives opportunity to express a feature relative to habit forming from drugs which may have been overlooked. Is a narcotic habit the demand for the drug, or is there a stage in which, as a result of the use of the drug, there obtains a condition in which there is an inability to endure normal functioning or even pain without the drug? Granting that there may be a demand for a drug without the necessity for it as a relief from pain, which state may be called habit, there may be a state in which the habit exists even while for months and perhaps years the subject does not use and perhaps does not know of the existence of the drug or of its having become a part of his or her life. Only this is known, that if the attack, whether it be of pain, distress or want of ability to "rest," supervenes, the same prescription, probably by the same physician, is available and that it will be used for relief.

An attack of periodic dysmenorrhea, asthma, gallstone colic, hysteria, wakefulness, and many suggestive conditions, once relieved by even such a mild opiate as codein, calls for another like prescription. And this, repeated, makes the downward path well nigh inevitable. It is not enough to say that, if the drug is omitted for periods of weeks or months or even years, the habit-forming tendency is absent. An attack of gout, once, twice or thrice relieved by the mildest opiate, even though the intervals be no less than a year, will demand not only the drug in larger doses but for longer periods throughout longer durations of the attacks. Experiences are not wanting to prove the fact that a drug may become an addiction throughout years of the prehabit use; and, if we are real servants of the people, these features should be known and used as guides with full comprehension.

It is this feature of the use of even the mildest doses, a dosage even below the minimal dram of mixtures not under the Harrison act, that we assert should be given profound consideration when we wish to place any opiate on the nonhabit-forming list. I have seen results from the administration of less than one-sixteenth grain of morphin sulphate. A corresponding dose of codein would be one-fourth grain.

Narcotic habit may be the inability to endure pain, reflexes, nervousness, excessive labor (mental or other) without the drug, as well as a demand for the drug when the subject is normally well.

It is for modern physicians to treat pain and want of rest as well as the various reflex maladies by other measures save in extreme cases, and the prolonged use of any toxic drug having habit-forming elements, even in minute doses, should be considered outside the realm of the true physician. By this I do not suggest that codein or any other drug be made more inaccessible than now obtains, for it appears that our present legislation has far from succeeded in reducing the number of addicts. When we wisely prescribe, the step will have been taken which will lead to the avoidance of abuse.

Charles Franklin Bennett, M.D., Waterloo, Iowa.

To the Editor:—I wish to commend the letter of Dr. Watson in The Journal, May 13, on codein as a habit-forming drug. As there seems to be no such thing as a codein addict, granting such rare exceptions as might make the rule valid, cannot something be done to remove this useful drug from the annoying restrictions of the Harrison Narcotic Law?

Joseph S. Lewis, M.D., Elmira, N. Y.

"THE PHYSIOLOGIC AND THERAPEUTIC ACTION OF LIGHT"

To the Editor:—In reading the editorial on light (The Journal, May 6, 1922, p. 1391), it occurred to me that there is one clinical aspect which The Journal might well emphasize; namely, that the therapeutic effect of the sun's rays is almost entirely nullified by passage through window glass. The significance and clinical application of this fact is evident.

I did not realize how little this physical phenomenon is appreciated by physicians until the other day when present at a consultation in which several of the leading consultants of this city took part. These physicians, who must be considered as exceptionally well posted, had been treating a child for weeks with heliotherapy, and were surprised to hear that the treatment must necessarily have been ineffective, and valuable time lost, in view of the fact that the windows were closed during the treatment. Evidently such is the common understanding of the technic of heliotherapy; it seems possible that even those in charge of sanatoriums may be pursuing a similar method.

Alfred F. Hess, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EXFOLIATIVE DERMATITIS FOLLOWING MERCURIAL OINTMENT

To the Editor:—1. Would mercurial ointment, 10 per cent., applied to the body cause exfoliative dermatitis? 2. If it could, would it be possible for the patient to live thirty-seven days? R. R. W., New York.

Answer.—1. Mercurial ointment, 10 per cent., applied to the body might cause a severe exfoliative dermatitis in a susceptible person. A universal exfoliative dermatitis might follow application of the ointment that was by no means universal, even localized to comparatively small areas.

2. It would be entirely possible for the patient to live thirty-seven days with such an exfoliative dermatitis. He might get such an exfoliative dermatitis without a severe general poisoning from mercury. Such a patient might easily live thirty-seven days; in fact, in such cases of exfoliative dermatitis from mercury, in which there is not also serious systemic intoxication from mercury, the patients usually recover.

"PRESCRIPTION FOR HEMORRHOIDS"

To the Editor:—In The Journal, April 29, page 1338, in commenting on a prescription sent in by a correspondent, the ingredient "cerated resinol comp." is interpreted as "ceratum resinae compositum." This is obviously an error, as what is undoubtedly intended is "unguentum resorcinolis compositum N. F.," which is sometimes erroneously called "cerate," and which is much used in combinations of the kind described. I believe that if ceratum resinae compositum were used as is directed, the preparation would be very irritating instead of healing.

Charles H. Lawall, Philadelphia,
Dean, Philadelphia College of Pharmacy and Science.

MEANING OF CHUCHO

To the Editor:—Can you tell me the meaning of the term "chucho," used in a Buenos Aires journal to designate a symptom apparently common in biliary colic?

A. Pérez Miró, M.D., Havana.

Answer.—"Chucho" is a synonym of chill. The word has been taken from the Quichua language. Chucho and malaria fever are used interchangeably from Peru to Argentina. Afterward the term was extended to any kind of chill.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 11. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

District of Columbia: Washington, July 11. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Georgia: Augusta, May 31-June 2; Atlanta, June 7-9. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Indiana: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

Iowa: Iowa City, June 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

Louisiana: New Orleans, June 8-10. Sec., Dr. Roy B. Harrison, Hibernia Bank Bldg., New Orleans.

Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 6-8. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

New Mexico: Santa Fe, July 10-11. Sec., Dr. R. E. McBride. Las Cruces.

North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

Oklahoma: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 11. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

Vermont: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Washington: Olympia, July 11. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 11. State Health Commissioner, Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

Ohio Reciprocity Meeting

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports that 24 candidates were licensed by reciprocity at the meeting held at Columbus, Jan. 3, 1922. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1917)	Michigan
College of Physicians and Surgeons, Chicago		(1902)	Illinois
Loyola University		(1921)	Illinois
Rush Medical College		(1904), (1912), (1920), (1921)	Illinois
University of Illinois		(1920)	New York
University of Louisville		(1920)	Kentucky
University of Michigan Medical School		(1920, 2), (1921, 3)	Michigan
St. Louis University School of Medicine		(1921)	Missouri
University of Nebraska		(1916)	Nebraska
Jefferson Medical College		(1919)	Penna.
University of Pennsylvania		(1895)	Penna.
University of Pittsburgh		(1909), (1919)	Penna.
Meharry Medical College		(1919)	Kentucky
University of Texas		(1920, 2)	Texas
Medical College of Virginia		(1914)	Virginia

New Mexico January Examination

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 10 candidates were licensed on diploma at the meeting held at Santa Fe, Jan. 9-10, 1922. The following colleges were represented:

College	LICENSED ON CREDENTIALS	Year Grad.	Number Licensed
Northwestern University		(1910), (1912)	2
Rush Medical College		(1918)	1
University of Michigan Medical School		(1893)	1
Dartmouth Medical School		(1899), (1901)	2
Jefferson Medical College		(1912)	1
University of Nashville		(1905)	1
Vanderbilt University		(1899)	1
University of Edinburgh		(1914)	1

Washington January Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the oral and written examination held at Olympia, Jan. 10, 1922. The examination covered 16 subjects and included 160 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 2 passed and 3 failed. Thirteen candidates were licensed by reciprocity. One candidate was licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Columbia University		(1917) 78.4, (1920)	75.4
	FAILED		
Stanford University		(1917)	66.1
Rush Medical College		(1897)	57.4
Kumamota Special Medical School		(1919)*	65.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bennett College of Eclectic Medicine and Surgery		(1906)	Illinois
Loyola University		(1921)	Illinois
Northwestern University		(1910) Montana, (1911)	Idaho
University of Illinois		(1918)	N. Dakota
Drake University		(1909)	Montana
University of Kansas		(1909)	Montana
University of Louisville Medical Dept		(1897) (1911)	Kentucky Tennessee
University of Minnesota		(1900)	Montana
Starling Medical College		(1906)	Ohio
University of Oregon		(1914)	Idaho
University of Pennsylvania		(1917)	Alabama

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1919)	N. B. M. Ex.

* Graduation not verified.

Kansas February Examination

Dr. Albert S. Ross, secretary, Kansas State Board of Medical Registration and Examination, reports the written and practical examination held at Topeka, Feb. 14-15, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 2 passed and 3 failed. Twenty-four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Creighton University		(1921)	79.4
Starling Medical College		(1878)	81.3
	FAILED		
Meharry Medical College		(1921)	61.8, 70.1
University of Nashville		(1904)	71

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas		(1916)	Arkansas
Emory University		(1918)	Georgia
Georgia College of Eclectic Medicine and Surgery		(1914)	Missouri
Hahnemann Medical College and Hosp. of Chicago		(1920)	Illinois
Northwestern University		(1920)	Oklahoma
Rush Medical College		(1921, 3)	Illinois
University of Illinois		(1920)	Wisconsin
State College of Phys. and Surgs. of Indianapolis		(1907)	Indiana
University of Louisville		(1903)	Mississippi
Tulane University		(1919)	Louisiana
Johns Hopkins University		(1910)	Maryland
University of Maryland		(1917)	Delaware
University of Michigan Medical School		(1885)	Illinois
American Medical College		(1911)	Missouri
Barnes Medical College		(1899), (1904) Missouri, (1910)	Oklahoma
University of Nebraska		(1920), (1921)	Nebraska
Eclectic Medical Institute, Cincinnati		(1886)	Ohio
Chattanooga Medical College		(1903)	Alabama
Memphis Hospital Medical College		(1911)	Tennessee

Book Notices

Clinical Electrocardiography. By Frederick A. Willius, B.S., M.D., M.S. in Medicine. Cloth. Price, $5, net. Pp. 188, with 185 illustrations. Philadelphia: W. B. Saunders Company, 1922.

If this book is intended for the expert, it is far from meeting his needs; for much unnecessary elementary material is included, and there is little consideration of the most recent advances. One unfamiliar with the electrocardiograph will not be made to understand the principles of the instrument, how to run it, or how to interpret its results. At times the descriptions are full, at others incomplete, frequently bewildering. Most of the fragmentary discussions of physiology and pathology are out of place. The author should either assume that his reader knows these facts, or he should be more explicit and exact. Much use is made of statistics, one of the characteristics of the workers in the Mayo Clinic. These statistics might well be condensed; and a little less positiveness as to conclusions drawn from even large numbers would be the safer procedure. The author is not fortunate in his style; he is not clear. Sometimes the lack of clarity seems to be due to confused thinking. At times it depends on a clumsy use of English. The whole result is a book which, in spite of many excellent features and the evidence of faithful and conscientious work, does not satisfy. We surmise that the book is largely made up of a rearrangement of some of the author's published articles. To write a good article for the medical journal, giving the results of investigative work, and to write a textbook in which all knowledge on a given subject should be digested and presented in a simple and logical manner, are tasks of widely different character. If the author, in writing the book, had had clearly in mind the exact purpose for which he was writing; and if then he had rewritten the volume, many of these regrettable errors would have been avoided.

Le Sang in Vitro: Éosinophilie—Fibrinogenèse—Phagocytose des Hématies. Par Dr. Émile Liebreich. Paper. Price, 10 francs net. Pp. 125. Paris: Masson et Cie, 1921.

This consists of a series of morphologic and physicochemical studies, which the author has made in an attempt to show the close relationship which he believes exists between eosinophilia, on the one hand, and the process of coagulation of the blood (fibrogenesis), on the other. In this connection he has been called on to discuss the subjects of hemolysis and cytology in general, in order to explain his findings. A review of the methods adopted in this research and of the results obtained cannot be given here. Suffice it to say that Liebreich concludes that it is possible to produce, in vitro, a condition analogous to a "local eosinophilia" and to show that the substance constituting the eosinophil granulations is a crystalloid identical to that forming the so-called Charcot crystals. Further, he believes that it is by the immediate and complete crystallization of a substance, which he styles "substance α," that a cell becomes an eosinophil in the morphologic sense. The relationship of the production of eosinophilia to coagulation of the blood follows from the assumption by Liebreich that coagulation is due to the action of the substances abundantly secreted by the leukocytes after extravasation, among which substances he finds crystallizable one which is derived from fibrin and which he styles the "substance α" mentioned above. A study of this little book is recommended to those interested in the mechanism of the various processes discussed. Although the ideas which it presents may be somewhat novel, yet the work will prove interesting reading.

The Use of Death-Rates as a Measure of Hygienic Conditions. By John Brownlee, M.D., D.Sc. Paper. Price, 3 shillings, net. Pp. 80. London: His Majesty's Stationery Office, 1922.

This useful little monograph discusses the significance of death rates in general, and the methods of mathematical treatment involved in the study of death rates, calculation of life tables, and the like. The nature of the discussion may be illustrated by two brief quotations: "The mean age at which deaths from measles occur in towns is considerably lower than that in the country. As nearly every one exposed to measles develops the disease, an adequate explanation is at once suggested. The phenomenon is due to the fact that epidemics occur at shorter intervals in the towns than in the country, and in consequence there is on the average a larger susceptible population at higher ages in the latter." The similar difference in age incidence in cancer, however, has another explanation. "To compare, for instance, the death rate from cancer in town and country, between the ages of 55 and 65, is to compare sections of the population which consist of different elements, as it has been rendered probable that the inhabitants of the country are at these ages biologically about six to seven years younger than the inhabitants of the town." There are many illuminating remarks of this sort.

An Essay on the Physiology of Mind. An interpretation Based on Biological, Morphological, Physical and Chemical Considerations. By Francis X. Dercum, A.M., M.D., Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College. Cloth. Price, $1.75 net. Pp. 150. Philadelphia: W. B. Saunders Company, 1922.

In the first part of this essay are cited and described those reactions of the ameba and sponge which seem to show selection or choice. With the appearance of a nervous system, these reactions also are fixed, but become much more rapid —transmission is greatly improved. With the development of the synaptic nervous system, the transmission of stimuli becomes specialized and intensified. In the second part, the forms of stimuli to which protoplasm responds, and the automatic nature of responses, are discussed. This leads up to the author's theory of the ameboid movement of the dendrites—the establishing of connections between neurons. Consciousness is considered in the light of "sentiency" of the neuron. Is this any advance? There is an addendum of sixteen pages on the pathologic physiology of the mind, in which hysteria, states of delirium, dementia praecox, mania, etc., are described in relation to the author's theory. In this part, especially, ideas are expressed as determined beyond question by facts about which doubt might be expressed.

Las Psiconeurosis (Neurastenia, Histerismo, Psicastenia, Neurosis de Angustia, Etc.). Por el Doctor E. Fernández Sanz, Profesor de la Facultad de Medicina de Madrid. Paper. Price, 20 pesetas. Pp. 489. Madrid: Calpe, 1921.

This book, by a prominent Spanish neurologist, chief physician of a Madrid hospital, is divided into ten chapters; on general considerations on psychoneuroses; neurosism or nervousness; neurasthenia; hysteria; psychasthenia; defense psychoneuroses; simple affective depression (by the way, a new entity introduced by the author); combined psychoneurosis; war psychoneurosis or shell shock and treatment. An attempt is made to trace the relation of neuroses to other diseases. One of the most valuable chapters is that on shell shock, ending with a discussion of camptocormia. The author seems familiar enough with French and German literature, but references to American authors are scarce, and even those few are to rather old contributions. It is a painstaking presentation, especially in its historical phases, of a subject at present much to the fore.

Veterinary Hygiene. By R. G. Linton, M.R.C.V.S., Professor of Hygiene, Royal (Dick) Veterinary College, Edinburgh. Cloth. Price, $6. Pp. 429, with 92 illustrations. New York: William Wood & Company, 1921.

This volume is intended for the use of "veterinary students, veterinary practitioners and others concerned with the well being of animals." It is a comprehensive treatise dealing with all phases of animal hygiene. The six sections into which the book is divided include discussions on water supplies, meteorology, "sanitation" (drainage, sewerage systems and sewage disposal), ventilation, building construction, sanitary law and preventive medicine. The latter section is particularly worthy of mention. The material presented deals with disinfection, isolation and quarantine in all their phases as applied to animals. About fifty animal diseases are discussed, together with methods for their prevention. The book is well written, reasonably up to date, and a valuable addition to the subject of veterinary hygiene.

Medicolegal

Breaking of Needle and Not Advising Seeing Expert

(Benson v. Dean (N. Y.), 113 N. E. R. 125)

The Court of Appeals of New York says that, in March, 1916, the defendant, with the assistance of another physician who gave the anesthetic, and of a specialist in general surgery, operated on the plaintiff, who had been suffering from rectal trouble, for ulcers. While sewing up an incision, the specialist's needle broke. He and the defendant probed to find the part broken off, but, not locating it, left it, as the plaintiff was not taking the anesthetic well, and it was necessary to act with haste. The defendant did not tell the plaintiff, his family, or friends about the needle, but continued to treat the plaintiff, who during the time suffered intensely, until the fall of 1917. In January, 1917, the defendant burned some small ulcers with nitrate of silver. He then prescribed an irrigation treatment, which was extremely painful, and when he at times inserted his finger with a rubber covering and touched a certain spot, or the irrigating tube touched it, the plaintiff felt a severe pain. A lump finally formed in the wall of the rectum, and the defendant said there would have to be another operation. The plaintiff then ceased going to the defendant, and went to a rectal specialist, who treated him, opening an abscess at the tender spot and removing therefrom the broken needle, the result being that, after some weeks, the plaintiff was cured of all discharge and pain, and had no more trouble. The plaintiff recovered a judgment for $2,634.50 damages against the defendant. A question of proper skill and care was presented for the consideration of the jury, and the judgment would be upheld, except for errors in the instruction of the jury that were clearly prejudicial, in view of the fact that the plaintiff called no medical experts to testify as to what constituted proper treatment; wherefore the judgment was reversed, and a new trial granted.

A physician is bound only to have and to exercise competent skill in treating a patient. Ordinarily, jurors would find difficulty, without the help of medical evidence, in determining the right of a patient to recover against his physician for malpractice based on lack of scientific skill; but the results may be of such a character as to warrant the inference of want of care from the testimony of laymen, or in the light of the knowledge and experience of the jurors themselves. The localized pain in this case might have suggested to a careful physician the cause of the patient's suffering. A long continuance thereof, without relief under the ministrations of the general practitioner, might properly lead him to reveal to his patient the secret of the broken needle, and suggest recourse to a specialist in rectal disorders. The defendant did not diagnose the trouble correctly, and did not advise his patient to resort to others, of wider experience, for help. The jury might properly find that he was guilty of malpractice in this regard. The defendant's fault seems to have been the unworthy and unskilful attempt to cover up the accident, rather than the accident itself.

But it was error, under the circumstances, to instruct the jury that the mere breaking of the needle was not necessarily negligence, yet might be some evidence of negligence. Common sense suggests that the condition discovered by the rectal specialist was incompatible with successful surgery and medical treatment. But when the evidence of the defendant's surgeons came into the case, with a reasonable explanation showing what may happen when the proper degree of care and skill is actually exercised, the possible inference of negligence from the breaking of the needle alone was driven out, and the jury should have been so instructed. The rule of *res ipsa loquitur* (the matter speaks for itself) put on the defendant the burden of going on with the case; but, in the absence of medical evidence to the contrary, it must be assumed on this appeal that the breaking of the needle was not due to negligence. Another instruction was too broad which stated that if, under the circumstances, a reasonably careful, skilful general practitioner such as the defendant would have suggested the calling into consultation of a rectal specialist, the defendant was negligent for failing to do so. The evidence did not suggest that such a specialist should have been called in for the operation. But a jury might say that, at some time in the subsequent treatment, the defendant should have sought, or at least suggested, counsel when he failed to afford the plaintiff any substantial relief from the extreme of agony which he suffered.

Testimony of Physicians in Action Against Dentist

(Patterson et ux. v. Howe (Ore.), 202 Pac. R. 225)

The Supreme Court of Oregon says that the defendant, who was sued for alleged malpractice in the extraction of a tooth and the subsequent treatment of the wound, was a dentist, and in the practice of his profession the law imposed on him, in common with physicians and surgeons in the practice of their profession, the duty of exercising such reasonable and ordinary care, skill, and diligence as other members of their respective professions in the same general neighborhood and in the same general line of business ordinarily have and exercise in a like case. It was not error to permit the jury to inspect the wound in the plaintiff's jaw resulting from the extraction of the tooth. In personal injury cases, it is the usual practice to permit the jury to inspect the injured part, and it was proper for the jury to see the condition of the plaintiff's jaw, and for a physician to explain its condition to the jury. This testimony did not prove negligence, and was not offered for that purpose, but was competent and proper for the consideration of the jury, in connection with other testimony and circumstances of the case on the question of damages.

Nor was error committed in the introduction of the testimony of the physician of complaints made by the plaintiff about her eyes, the complaints having been made during the time he was treating her for the extraction of the tooth. The complaints made by a patient to a physician as to pain and suffering assist the physician in his diagnosis of the case. Moreover, the testimony of a physician as to the condition of the optic nerve of the plaintiff, as found by him on examination one year subsequently to the extraction of the tooth, was admissible in the question of damages, there being testimony tending to connect this condition with the injuries resulting from the manner in which the tooth had been extracted. The weight of this testimony was for the jury; and whether the condition testified to by the physician was the result of negligent extraction of the tooth was a question for the jury.

Neither was there error in a refusal of the court to permit a physician, who was a witness for the defendant, to answer the question: "Would an ordinary medical practitioner that has never studied dentistry or had any experience in dentistry be qualified, in your judgment, to testify as an expert on dental operations?" The question related to the qualifications of another physician, and not to the qualifications of the witness himself, and objection to the question was properly sustained. The question as to whether another physician, a witness in the case, was qualified to testify, was one of law for the court to decide.

But it was error, requiring a reversal of the judgment for damages obtained, to permit the plaintiff's family physician to be asked, and to answer the question: "In your judgment as a physician and surgeon, was the operation performed by Dr. Howe on the patient a skilful dental operation (just give your best judgment as to whether it was skilful and effective, or unskilful and ineffective)." "I consider that operation was misdirected . . . not directed to the right spot. . . . I would be obliged to say that in this case I could not call it skilful." Permitting such questions to be propounded to the physician, and the answers to be given by him, was clearly an invasion of the province of the jury; and this testimony was particularly damaging to the defendant because of the fact that the witness, who was the plaintiff's family physician, was present and saw the operation performed, and was testifying to a fact which had come under his own personal observation. His testimony was bound to have greater weight with the jury than if he had been expressing an opinion in answer to a hypothetic question.

Society Proceedings

COMING MEETINGS

American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.
Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
North Dakota State Medical Association, Jamestown, June 1-2. Dr. H. J. Rowe, Lisbon, Secretary.
Rhode Island Medical Society, Providence, June 1. Dr. I. W. Leech, 111 Broad St., Providence, Secretary.
Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

AMERICAN GYNECOLOGICAL SOCIETY

Forty-Seventh Annual Meeting, held at Washington, D. C., May 1-3, 1922

The President, Dr. George Gray Ward, Jr., in the Chair

What Is the Relation of Hypertension to Fibroid Disease of the Uterus?

Dr. John Osborn Polak, Brooklyn: No effect on blood pressure can be attributed to the presence of fibroids in young women. Patients with myoma who have high pressure are usually over 40, or near the climacteric, or have renal or cardiovascular disease. Bleeding in fibroid seems to be secondary and has no direct effect on blood pressure; but, when suddenly checked by operation or radium, the pressure is raised temporarily. Removel of the uterus and ovaries in women of 40 or over raises the pressure for a varying period; but unless there is some intercurrent disease, the preoperative pressure rapidly returns. Conservation of the ovaries means a less tumultuous operative climacteric. The pressure and nervous phenomena are more pronounced after radium than after operation.

Life History of Ovarian Hematomas of Endometrial Type

Dr. John A. Sampson, Albany, N. Y.: These hematomas arise from tubules of endometrial type in the ovary which react to menstruation. If situated near the surface of the ovary, perforation occurs while they are small. As a result of hemorrhage (menstruation) and perforation, the epithelial lining may be cast off entirely, and the hematoma (hemorrhagic cyst) may be destroyed. If situated in the deeper portions of the ovary, the hematoma may reach a larger size (occasionally several centimeters in diameter) before perforation occurs. As the menstrual blood is unable to escape prior to perforation, many interesting changes occur in the cyst wall because of menstruation and the attempted repair following it. The origin of these tubules is an interesting problem whether they arise from developmentally misplaced müllerian tissue or from the surface epithelium of the ovary, or are acquired during adult life from the implantation of tubal or uterine epithelium escaping from the tube. The data I have obtained suggest the latter as one source of these tubules.

Ovarian Transplantation

Dr. Franklin H. Martin, Chicago: Clinically, there is little to encourage one to believe that transplantation of ovaries as practiced up to the present time has more than speculative value as a surgical procedure. There is some evidence that autotransplants are of some value in deferring the symptoms of the menopause and delaying the cessation of menstruation. It is difficult, however, not to attribut some of this evidence to suggestive therapeutics or to unattached ovarian tissue left in situ. There is practically n convincing evidence that homotransplants have been successful in the human female. There is no evidence that heterotransplant has been successful when the human femal has been the recipient. There is, however, encouraging evidence in all of this endeavor to lead one to hope that th subject will be pursued experimentally, especially for th purpose of devising a rational and simple technic.

Pelvic Tuberculosis: End-Results of Operative Treatment

Dr. Reuben Peterson, Ann Arbor, Mich.: Since pelvi tuberculosis in women is usually a secondary infection, it i of the first importance to find and estimate the extent of th primary focus before deciding for or against operation fo the pelvic lesion. Operation should be postponed or avoide altogether when the pulmonary lesion is extensive. Otherwise the percentage of primary and secondary deaths will b high, since the operative procedures may augment the pulmonary lesions. The end-results of the operative treatmen of pelvic tuberculosis are, on the whole, favorable, sinc about 75 per cent. of the patients should be alive and in goo health after a considerable period of years. Whenever th condition of the patient warrants, radical removal of th pelvic organs is indicated, since more than one portion o the genital tract is usually involved in the tuberculou process, and because the best end-results follow such radica removal. Unless too extensive, tuberculosis of the peritoneum will be cured if the other pelvic tuberculous lesion are removed.

Extent of Renal Lesion in Toxemias of Pregnancy

Drs. Alfred B. Spalding, Marion C. Shevky and Thoma Addis, San Francisco: The renal lesion in pregnancy toxemi is important not before, but after delivery. The danger lie not in the extent of the lesion during the acute toxemia, bu in the fact that it may fail to heal, and may become a continuing and self-perpetuating disease which, either alone o with the help of a complicating arterial disease, may ultimately lead to the death of the patient in uremia.

Hydatidiform Mole

Dr. Edward A. Schumann, Philadelphia: There is necessity for distinction between early cases and thos developing in late pregnancy. While the latter form i undoubtedly quite rare, hydatid is probably the most common of all diseases of the ovum in the early months of gestation. The impossibility of determining either by curet o uterine endoscope to what degree the mole has penetrate the uterine muscle should be remembered. The treatmen suggested is abdominal hysterotomy, with hysterectomy i indicated by direct inspection of the interior of the uterus

Bovine Genital Infections of Interest to the Medical Profession

Dr. W. L. Williams, Ithaca, N. Y.: Cattle of all ages an both sexes suffer extensively from genital infections whic imperil reproduction and affect adversely the general healt Adult cattle afford the best opportunity for the clinical stud of genital functions and diseases. The internal genitalia ar freely palpable by rectum. The fetus may also be palpate and much learned of its behavior. There are genital infections of cattle occupying debatable ground regarding transmissibility to man which might repay careful study. Probably the most interesting field at present lies in the analogie which may be drawn, having possible value in determinin certain fundamental principles in sexual functions and genita diseases, such as the transmission of infections by the mal during coitus, which, although not regarded as specificall venereal in character, may have a profound peril for fertilization and may imperil the genital health of the female, and th health of a resulting fetus or of the new-born. The influence of sexual excesses on the intensification of genital infection of cattle may afford valuable suggestions regarding se hygiene. Available data on the influence of the health o new-born calves on the fertility of the animal when breedin age is attained may offer valuable suggestions in the problem of the hygiene of infants.

Point in Technic of Vaginal Fixation of Uterus

Dr. Thomas S. Cullen, Baltimore: In the Watkins and other similar operations for prolapses of the uterus, as soon as the bladder has been pushed up and the peritoneum opened, the anterior surface of the uterus is grasped and pulled forward. Sometimes the uterine musculature is friable and tears readily, not only causing considerable bleeding but also leaving a raw and macerated surface. I have been using a simple procedure that obviates this, and at the same time renders the traction on the uterus easy. As soon as the peritoneum is opened, three figure of eight sutures of chromic formalized or silverized catgut are placed in the anterior wall of the uterus, and tied about 1.5 cm. apart. The end of each suture is rethreaded, grasps the peritoneum of the edge of the wound, and then pierces the margin of the cut vaginal mucosa at the proper point. When these sutures have been introduced and are ready for tying, the cervix is amputated, and the sutures are then tied. The operation is completed in the usual manner.

Action of Ergot and Solution of Hypophysis on Uterus

Drs. Charles C. Haskell and M. Pierce Rucker, Richmond, Va.: Pituitary solution affects the uterus of cats and dogs more powerfully than ergot does. Instead of being devoid of the tetanizing action manifested by ergot, pituitary solution seems more prone to produce either a tetanus or an increase in tone which is similar in regard to its effect on intra-uterine pressure. Pituitary solution, instead of being safer than ergot when employed in the early stages of labor, is actually more dangerous. The action of ergot and hypophysis solution on the uterus are the same if large enough doses of ergot are used. The action of both drugs varies greatly with different individuals.

Pregnancy in the Tuberculous

Drs. Charles C. Norris and Douglas P. Murphy, Philadelphia: The combination of pregnancy and pulmonary tuberculosis is a common one. Pulmonary tuberculosis exerts little or no influence against conception or on the course of pregnancy, and except in the advanced stages, little or no nfluence toward causing abortion, miscarriage or premature labor. From 20 to 30 per cent. of cases of mild, quiescent pulmonary tuberculosis, and from 70 to 90 per cent. of more advanced cases exhibit exacerbations during pregnancy or he puerperium. Marriage is worse for the tuberculous woman than for the tuberculous man, owing to the dangers ncident to pregnancy. Unless the pulmonary lesions have been quiescent for a moderately prolonged period, tuberculous women should not marry. Tuberculous women should not become pregnant unless the disease is in the first stage, and has been quiescent for a minimum period of two years. Moderately extensive lesions, especially laryngeal improvement, oss of weight, fever, hemorrhage, sweats, lack of vigor, and inability to obtain proper treatment, are ill omens. Prior to he fifth month of pregnancy, the uterus should be emptied if the disease manifests any evidence of becoming active. Curettage during the first six or eight weeks, and in the latter cases vaginal hysterotomy are the preferable methods. From 65 to 70 per cent. of suitable cases will be benefited by this treatment, provided it is employed as soon as acute symptoms arise and that proper after-treatment is instituted. Late intervention has given less satisfactory results. Steriliation is not justifiable as a routine procedure. After the fifth month of pregnancy, it is generally advisable to treat hese patients expectantly. Labor should be made as easy as possible. Induction of premature labor two weeks before erm may be advisable. Rarely, if ever, should these patients be allowed to go beyond term. Infants should not be nursed by tuberculous mothers, and should be especially guarded from nfection. The patients should be kept under close observaion and should be examined by a competent internist at regular and frequent intervals. In the great majority of cases the tuberculosis precedes the pregnancy. Even in those cases in which the symptoms are first observed during pregnancy, infection has generally occurred prior to conception, and an exacerbation during pregnancy has directed attention to the pulmonary condition.

Test of Labor in Relation to Cesarean Section

Drs. Rudolph W. Holmes and Allison L. Burdick, Chicago: The adoption of modern surgical principles and the abstinence from vaginal examinations have reduced the risks of a cesarean section to the present minimal point. The eventual possibility of a section should be clearly and definitely determined in pregnancy. Every step in the subsequent conduct of labor should be subservient. An absolute pelvic deformity demands that the woman should undergo section before labor sets in—at a set hour. Conversely, unless there is imperative necessity, the woman with relative disproportion should be given an adequate test of labor. If labor is unduly prolonged after the rupture of the membranes, a stormy convalescence is probable in 10 or more per cent., and the lethal outcome for the occasional woman is certain to occur. A cesarean section performed before labor spells almost certain success in skilled hands, with a minimum of physical distress. Labor increases the physical distress and may jeopardize the convalescence. Above all things, prolonged labor, with prolonged rupture of the membranes, with vaginal examinations, or futile attempts at delivery from below spell disaster. The sum total of discomfort, distress, malaise—every bodily ill of cesarean section—is as great as or greater than the inconveniences and pain of labor. Sections should be done only when there are clear indications.

Further Experience with Pituitary Extract in Induction of Labor

Dr. Benjamin P. Watson, Toronto: Pituitary extract should be used in the course of labor for but one purpose: to stimulate uterine contraction when this is markedly inadequate, and when there is no obstruction to the passage of the child. To give pituitary extract to a patient with a rigid cervix or a small pelvis, large head, malposition of the head or rigid pelvic floor is to court disaster. Rupture of the uterus and fetal death are bound to occur. When given to induce labor, the initial dose is 0.5 c.c. If there is any idiosyncrasy on the part of the patient to the drug, it is revealed at once. Administration can then be stopped. Our experience shows that if the first dose produces no bad effects, subsequent doses will be borne equally well, as the drug has no cumulative effect. If contractions can be kept up long enough, if necessary by further doses, to start dilatation of the cervix and separation of the lower pole of membranes, the labor will thereafter go on naturally.

Uterus After Cesarean Section

Dr. Edward P. Davis, Philadelphia: Much attention has been recently called to the danger of rupture of the uterine scar after cesarean section. Statistics show that when catgut is used to close the uterine muscle, there is danger of rupture in subsequent pregnancy in about 4 per cent. of cases. When silk is used, the danger of rupture is less, while it is thought that the ideal suture material would be silkworm gut. A suture material placed in the uterus will disappear through the action of cellular elements, unless it be impervious and resisting. Hence, if the uteri are examined when silk has been used in closing and infection has not developed, no trace of the silk may be found. While the choice of suture material is important, in the classic operation the efficient and accurate closure of the uterine muscle is indispensable. Cesarean section by incision through the lower uterine segment is said to be less dangerous for subsequent pregnancy.

Intra-Uterine Rupture of Velamentous Umbilical Cord

Dr. George W. Kosmak, New York: The presence of the so-called velamentous insertion of the cord must always be regarded as a source of danger to the child. In this anomaly the umbilical vessels become separated at varying distances from the placenta, and take a course between the amnion and chorion before reaching their placental terminals. This means that when labor begins a rupture of the membranes occurs in the immediate vicinity of these isolated vessels, especially if they happen to be located over the internal os; the umbilical artery or the veins, as the case may be, are torn through with the loss of the fetus from hemorrhage. On the advance of the presenting part, it may compress these vessels and produce fetal asphyxia. Whether these babies are less well developed or whether premature labor may occur as the result of this anomaly, the outcome is doubtful. Velamentous cord insertion is frequently associated with placenta praevia. Irregular bleeding at the end of the first stage of labor should also lead one to suspect this condition when a lateral placenta was believed to be present and none is found on careful examination, especially when the presenting part is well engaged. As for the methods of treatment, it is radical to suggest a cesarean section in order to obviate the long delay incident to complete dilatation of the cervix; but when the accident occurs in a primipara with a severe hemorrhage, as in my case, due to another cause, cesarean section would be the only method of choice. It is claimed that velamentous insertion of the cord is always associated with placental anomalies, infarcts, multiple fetuses, twins and triplets. The diagnosis of the condition is possible only if the pulsating vessels can be felt within the circle of the dilating cervix over the bulging bag of waters. In such cases it may be possible to rupture the membranes between the vessels after dilatation is complete and then deliver the child as rapidly as possible; otherwise pressure will produce asphyxia. When the cervix is not yet fully dilated, a Vorhees or other soft rubber bag may be inserted carefully so as not to produce a premature rupture of the membranes, but fetal asphyxia is readily possible in such cases. In primiparas, however, such as in the case reported, with long, rigid cervix, even if a diagnosis had been made, such slow methods would have been of no avail. When the cord is inserted at the upper pole of the uterus, as in my case, a diagnosis by palpation is, of course, impossible.

Is Interference Justifiable After Twenty-Four Hours of Labor When No Other Indication Is Present?

Dr. Alfred C. Beck, Brooklyn: All but thirteen of seventy-nine long labors occurring among 1,138 general service cases were delivered spontaneously. Forceps were used in six either because of a marked change in the fetal heart rate or a prolonged second stage. Two breech extractions were done for the same reasons, and five labors were terminated by cesarean section. The sections were employed in cases of relative disproportion that failed to engage after a thorough test of labor. Three stillbirths and three infant deaths on the first, fourth and fifth days, respectively, gave an infant mortality of 7.6 per cent. One mother died on the third day after a cesarean section. Should we have resorted to the use of manual dilation or incision of the cervix and forceps delivery in these instances of prolonged labor? From the fact that in many of these cases the head was not engaged after twenty-four or even thirty hours of labor, I doubt very much whether the end-results would have been as good had these procedures been used. Should we have used bags or vaginal packs in our dry labor cases? As there were 138 cases in which the membranes ruptured early, this type of interference would have been required that number of times. Should we have induced labor prematurely in our cases of pelvic contractions? I believe that all but a few of the patients that show relative disproportion will deliver spontaneously if they are permitted to have a thorough test of labor. Therefore, I feel that a larger number of living infants will be born and that they will have a better chance to survive if we allow these patients to go to term and have a test of labor. I admit, however, that this routine occasionally subjects the mother to the risk of a cesarean section. Should we have induced labor because of the fear of a large child? As seventy-four of the infants in the series weighed more than 4,000 gm. (9 pounds), seventy-four inductions for this indication would have been necessary. Should more cesarean sections have been done? The large number of spontaneous deliveries that occurred after a test of labor, together with our low infant and maternal mortality, proved that we were not negligent in the matter of cesarean section.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held at Washington, D. C., May 1, 1922

The President, Dr. R. T. Woodyatt, Chicago,
in the Chair

Deductive Scientific Thinking

Dr. R. T. Woodyatt, Chicago: In numbers engaged in medical research, in richness of material equipment, in multiplication of material methods, and in form of research produced per annum, this country equals or exceeds any other country of the present or past. The quality of our product, however, must be compared with that of the masters. Bichat, Johannes Mueller, Harvey, Pasteur and Bernard had no such numbers or methods as ours, yet their work was greater. They were expert in the method of using the brain, in the technic of creative thinking rather than the technic of the blood sugar percentage or hydrogen ion concentration in the body fluid. It behooves us now to give more serious consideration to the study of scientific philosophy on the two methods of research known as inductive and deductive. All things considered, the latter has yielded the greater results, and has been the most employed by the masters. With notable exceptions, the great mass of American investigation today is of the inductive type. Let us study more deeply into history and philosophy and stimulate more interest in the prior idea, the hypothesis, the technic of deductive scientific thinking.

Static and Kinetic Components of Efferent Nervous System: Their Function and Symptomatology

Dr. J. Ramsay Hunt, New York: The efferent nervous system (cerebrospinal and vegetative) consists of two components, physiologically and anatomically distinct: a static system regulating posture, and a kinetic system controlling movement itself. In muscle, the kinetic system innervates the anisotropic contractile mechanism, and the static system the isotropic sarcoplasm. The function of the sarcostyles is movement. The function of sarcoplasm is postural tonus, posture following movement like a shadow. The efferent system consists of three great physiologic divisions: (*a*) The segmental nervous system, with components of motility representing reflex movement and reflex posture; (*b*) the corpus striatum, its subordinate spinal systems and cortical connections controlling movements of the automatic-associated type, and (*c*) the rolandic area of the cerebral cortex and its corticospinal system, which is concerned with isolated synergic types of movement. The latter two divisions comprise the suprasegmental nervous system. The essential suprasegmental structure for the control of postural function is the cerebellum. The peripheral nerves and voluntary muscle represent another system. Each of these systems presents anatomic evidences of a kinetic and a static mechanism.

The static and kinetic components of the vegetative nervous system for the control of unstriped muscle are represented in the sympathetic and parasympathetic systems, respectively. These two systems control the posture function and primitive motility of the blood vessels, glands and viscera. Unstriped muscle, like striated muscle, is composed of fibrillae and sarcoplasm. The fibrillae pass from one cell to another, forming a contractile network, and subserve the function of primitive movement. The sarcoplasm is concerned with primitive posture. Posture is the dominant function of involuntary muscle which coincides with the predominance of sarcoplasm. In voluntary muscles, movement is the dominant function, and there is a corresponding differentiation of the contractile mechanism. In both voluntary and involuntary muscles, various types of muscle fiber may be recognized, representing transitions from lower to higher forms.

Contractile function is subserved by two afferent systems, conveying, respectively, sensations of movement and of posture. Muscle sensibility (myesthesia) therefore consists of two components: kinesthesia, a sense of movement, and statesthesia, a sense of posture. These unite with impulses of similar character from the bones, joints, fasciae and tendons.

A lesion of the kinetic system causes a disorder of movement, and of the static system a disorder of tonus or of posture. This principle holds for both the splanchnic and somatic systems. The kinetic mechanism of the somatic system may give rise to various types of convulsive manifestation; also chorea, athetosis, tremor, etc. Related to the static mechanism are the sudden postural relaxations of epilepsy, myotonia, asynergia, dysmetria and intention tremor. In the psychic sphere, evidences of a dual representation are manifest in convulsions and in catatonia. A similar interpretation may also be given to active and to passive perseveration. In the vegetative nervous system, disorders of movement may be related to the kinetic component; e. g., tachycardia, gastric hypermotility and bronchial asthma. Related to the static system are disorders of postural tone; e. g., insufficiency and atony of the sphincters and hypotonic states of the vascular system.

DISCUSSION

Dr. Stanley Cobb, Boston: Dr. Woodyatt has spoken of the taking of data from one field of science for application in another. This is necessary in the formation of theories; but in accepting such data from another field, we must be critical. For example, Dr. Hunt's explanation of muscle tone depends on accepting as a fact the sympathetic innervation of skeletal muscle. This rests on the work of three men: (1) Boeke, an anatomist, who demonstrated sympathetic nerve endings in skeletal muscle. This has been corroborated by other workers. (2) DeBoer, a physiologist in Amsterdam, whose experiments indicated that section of the sympathetic nerves decreased muscle tone. These experiments have been repeated by two workers who were unable to substantiate DeBoer's findings. (3) Langelaan, whose paper is largely a theoretical analysis of the work of others, and whose conclusions have not been corroborated. The theory of sympathetic innervation of skeletal muscle is an attractive one, because it explains so many now inexplicable phenomena of muscle physiology. We have no right, however, to build theories until the basic physiologic facts on which they stand have been substantiated. I believe that the relationship of muscle tone to sympathetic innervation is still unproved.

The Chemistry of Pseudochylous Ascites

Drs. Campbell P. Howard and R. B. Gibson, Iowa City: Milky effusions into the serous cavities are classified into three types: (1) the true chylous due to the presence of chyle; (2) the chyliform or fatty, containing emulsified fat as the result of a fatty degeneration of cellular elements, and (3) pseudochylous fluid in which the opacity is not attributed to a fatty emulsion. In the latter the opacity is due to the presence of lecithoprotein, the lecithin being associated with the globulin fraction. The causes for pseudochylous ascites in order of frequency are (*a*) malignancy, (*b*) nephritis, (*c*) cirrhosis of the liver, and (*d*) tuberculosis.

The most striking of the chemical "determining points" for pseudochylous ascites are: (1) the high content in lecithin; (2) the low fatty acid figure and the uniformity of the fatty acid content after allowing for the lecithin fatty acid, and (3) the low cholesterol figures. True chylous fluids contain cholesterol in quite appreciable amounts, probably because of absorption of food and bile cholesterol from the intestine into the lacteals. Calcium in excess in protein combination is apparently not responsible for any of the opacity of the pseudochylous fluid, being present in all of the specimens in but little less concentration than in normal blood plasma. Paracentesis in a case of primary carcinoma of the gallbladder with metastases to the peritoneum, liver, pleurae and lungs yielded a milky yellow fluid which immediately suggested a true chylous ascites from invasion or at least obstruction to the lacteal system. The fluid did not rapidly reaccumulate, and the chemical investigation revealed its true nature. At necropsy, three weeks later, while there was again a moderate amount of similar fluid in the peritoneum, neither distention of the lacteals nor destruction of the receptaculum chyli was visible. The fluid obtained at necropsy resembled the first fluid, but revealed, in addition, a high nonprotein nitrogen content, due to the premortem anuria. For comparison, three more peritoneal fluids were examined, one from a case of cardiac decompensation due to rheumatic endocarditis of the mitral and aortic valves as proved postmortem, and one from another definite case of cardiac decompensation due to an adherent pericardium and an extreme myocarditis as revealed at necropsy, and the other from a case of suspected Pick's disease, in which the patient left the hospital before the absolute diagnosis could be made. Lastly, a specimen of fluid aspirated supposedly from the ventricles for the purpose of a ventriculography in a young man with signs of a cerebral tumor was also analyzed. The fact that the cerebrospinal fluid was essentially normal indicated an intraventricular cyst or a degenerating brain tumor, replaced by a gradually concentrating transudate. We would recommend the more frequent complete chemical investigation of all transudates or exudates because of the valuable diagnostic and, indeed, prognostic assistance sometimes obtained.

DISCUSSION

Dr. Albert A. Epstein, New York: In studying the chemistry of chylous and chyliform fluids, it is necessary to take into consideration not only the amount of fats and lipoids present, but also the state in which they are present in such fluids. Many fluids of a chyliform character are encountered in which the appearance is due not to the presence of fats or lipoids, but to a disturbed relationship in the proportions of albumin and globulin. Albumin enhances the solubility of globulin, and when the latter protein is present in excess, or when the amount of albumin is too small, the globulin particles remain incompletely dissolved, and give to the fluid a milky appearance.

Dr. Emanuel Libman, New York: The appearance present in cases of so-called pseudochylous ascites can be produced by an infection occurring in a previously established ascites. When such a fluid is infected by a streptococcus or a pneumococcus, the first result seems to be the formation of an albuminous precipitate due to the growth of the organism. Later, if the infection continues, a real peritonitis ensues. Such cases are rarely seen in the early stage. Dr. Flexner noted the occurrence of such a fluid in the paper dealing with peritonitis, which he published many years ago. In that communication he cited an observation made by Sacquépée.

Extrahepatic Formation of Bile Pigment; Factors Affecting Elimination of Bile Pigments

Drs. George R. Minot and Chester M. Jones, Boston: The intimate association of the liver with the formation of bilirubin during the normal processes of hemoglobin metabolism is universally accepted. The work of Whipple and Hooper on animals, however, has shown that bile pigment can be formed from hemoglobin without the intervention of the liver. That such can occur in man in an isolated circulation is shown from the following experimental studies in a case of paroxysmal hemoglobinuria. Intravascular hemolysis was produced in the patient by immersing the arm in ice water. A tourniquet was kept on the upper arm throughout the experiment at a pressure greater than systolic blood pressure. Examination of several specimens of blood taken from the arm during a period of thirty-three minutes after the production of hemolysis revealed first a small amount, and later a large amount of hemoglobin in the plasma. There then occurred a reduction of the hemoglobin, coincident with which there appeared an excess of yellow pigment giving the Gmelin test for bilirubin. Similar results, obtained on repetition, are offered as proof for the extrahepatic formation of bile pigment in man. Another series of observations was made in another case of paroxysmal hemoglobinuria, in which the products of hemolysis following chilling were allowed to enter the general circulation. Enough hemolysis was produced to cause a drop of about 850,000 red cells per cubic millimeter. These experiments revealed a definite sequence of events in the metabolism of hemoglobin. In the plasma the liberated hemoglobin was gradually replaced by increasing amounts of bilirubin, which subsequently returned to normal. As the bilirubin of the plasma began to decrease, that of the duodenal contents began to increase, reaching its height in about two and one-half hours. At this time the urobilinogen and urobilin in the duodenal contents began to rise, reaching their peak about one hour later, and returning to normal in about twenty hours. Such findings certainly suggest that the urobilinogen and urobilin were formed in the liver or its ducts, rather than in the intestine and then reabsorbed, as the time element involved was too short to allow for bacterial action in the lower intestine, and subsequent reabsorption.

Pigment estimations were made in the cases referred to on a series of fractions of duodenal contents collected before and after introduction of magnesium sulphate. Observations in twenty cases of liver disease disclosed that alterations in liver function are frequently accompanied by a marked increase of the bile pigments. In a certain proportion of these cases there was also a marked alteration in the normal ratio between the individual pigments. Fourteen cases of biliary stasis and gallbladder disease showed definite increases in the pigments in the duodenal contents. These increases were probably due for the most part to the concentrating ability of the gallbladder. A separate series of twenty cases of pernicious anemia showed marked increases in bile pigment elimination. By comparison of the bile pigment values obtained after hemolysis in paroxysmal hemoglobinuria with those noted in pernicious anemia, it would seem that a second factor, in addition to increased blood destruction, is necessary in order to explain the high levels reached in the latter disease. Otherwise, complete exsanguination would result in a short time were blood destruction to proceed in pernicious anemia at a rate comparable to that produced in the cases of paroxysmal hemoglobinuria. This second factor, by analogy with the results obtained in the cases of liver disease, may be an alteration in liver function. Alterations in bile pigment excretion can also be attributed to changes in diet.

Value of Therapeutic Test in Excluding Malaria in Suspected Cases

Dr. C. C. Bass, New Orleans: The value of the therapeutic test in excluding malaria in suspected cases depends on the certainty with which clinical symptoms are controlled by quinin. If it uniformly causes clinical symptoms to disappear, it can be depended on to exclude malaria from the diagnosis in all suspected cases. There is no method of treatment more effective in controlling the symptoms or curing the infection than what is known as the standard treatment recommended by the National Malaria Committee. The standard treatment is 10 grains of quinin sulphate three times daily for a period of three or four days to relieve the acute symptoms, to be followed by 10 grains every night before retiring for a period of eight weeks to cure the infection.

During the last six years I have given special attention to the question of relief of clinical symptoms by the first three or four days of the treatment with 30 grains of quinin daily, in connection with malaria control investigations with which I have had the good fortunte to be connected. During that period about 20,000 malaria-infected persons were under treatment, most of them, however, only for the cure of the infection. Not a single case has been found in which fever or chills and fever due to malaria continued more than three days under as much as 30 grains of quinin daily. In view of my experience, in which I have not been able to find a single case in which proper quinin treatment failed to control the clinical symptoms promptly, I am led to the conclusion that such cases must be very rare. Therefore, the therapeutic test should be given a value of practically 100 per cent. in excluding malaria in suspected cases.

Metabolism of Inorganic Base During Fasting

Drs. J. L. Gamble, S. G. Ross and F. F. Tisdall, Baltimore: To test the accuracy of the regulation of inorganic base elimination during fasting, the total inorganic base concentration in the blood serum, i. e., the sum of the concentrations of sodium, potassium, calcium and magnesium, was measured. This is found to be stationary at its usual value. Bicarbonate, however, is much reduced during fasting. This is shown to be a consequence of the concentration of ketone acids in the plasma. Ingestion of sucrose following fasting removes the concentration of abnormal acids and restores bicarbonate. A decrease in chlorin concentration durng fasting, contributing considerably to the bicarbonate concentration, is also observed. From the fact of the stationary total base, the inference is drawn that the purpose of the factors regulating inorganic base excretion is to maintain a constant level of total base in the serum, which apparently will not be altered in behalf of a diminished bicarbonate.

In order to demonstrate the separate regulation of the excretion of sodium and chlorin in accordance with the needs of the concentrations of sodium and chlorin in the blood plasma, carbohydrate and sodium chlorid were given following a period of fasting, and sodium and chlorin measured in the urine. It was assumed that with rise in the level of carbohydrate metabolism there would be increase in the volume of body water and, in consequence, need for the retention of sodium and chlorin in order to sustain their normal concentrations. The concentration of sodium being the larger, there should be a greater need for the retention of sodium than of chlorin. In agreement with this premise, several times as much chlorin as sodium was found in the urine. This result permits the inference that some of the sodium taken in as sodium chlorid was used to sustain the bicarbonate concentration. In other words, under circumstances this neutral salt may contribute to the alkali reserve, the uncovering of sodium for this purpose being accomplished by the excretion of ammonium chlorid.

Diabetic Lipoidemia

Drs. Phil L. Marsh and L. H. Newburgh, Ann Arbor, Mich.: In the literature on diabetes there is a tendency to assume a relationship between the amount of fat in the food and the percentage of lipoids in the blood. Bloor has recently suggested that there is lacking a pancreatic hormone which is necessary for the proper removal of the fat from the blood. Bloor continues by conceiving that the factor of overwork must be taken into consideration in examining into the cause of diabetic lipemia, and that the patient has a fat tolerance which can be raised or lowered as the ingested fat is restricted or increased. We have noted the effect on the lipoidemia of diabetic patients of the high fat, low protein, low carbohydrate diets described by Newburgh and Marsh. Since in these diets the great majority of the calories are derived from fat, and since in each case the caloric requirement of the patient has been satisfied, the daily fat intake is relatively high (about 200 gm.). If there were a defect in the metabolism of fat similar to that in the metabolism of carbohydrate, a hyperlipoidemia must result. This should be particularly true in those subjects who demonstrated their tendency to hyperlipoidemia by a gross increase over normal in the blood lipoids.

In one patient whose total lipoids were between 8 and 9 per cent. of the blood, the lipoidemia steadily decreased during two months of observation until it was about 2 per cent. at discharge; the greater part of the fall occurred during the few days immediately following the establishment of caloric and nitrogen balance. In three other patients whose initial lipemia was between 2 and 3.5 per cent., the total blood lipoids fell to approximately normal level and remained there during the period of observation, which was nearly nine months in one case and fourteen months in the other. These four patients were young adults. A young woman on whom no initial observation was made showed a normal lipoidemia during a second period of treatment four months after she was started on a high fat diet. A 3 year old boy showed a fall to normal of a slightly elevated lipoidemia. In six other patients there was no rise in the blood lipoids, which were approximately normal, during the period of treatment, in spite of the fact that each received in the neighborhood of 4 gm. of fat per kilogram of body weight daily. There was no increase in the lipoid content of the blood during the periods of observation, and, of much greater significance, in the patients in whom a hyperlipoidemia existed when they first came under observation, the total fat fell to approximately normal levels. This is very strong evidence that the prevalent assumption which postulates that diabetic hyperlipoidemia is dependent for its existence on the excessive ingestion of fat is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

DISCUSSION

Dr. E. P. Joslin, Boston: Did the patients who took 5 gm. of fat per kilogram of body weight, or 45 calories, gain body weight?

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

April, 1922, **163**, No. 601

Nonoperative Treatment of Chronic Empyema. J. H. Gibbon, Philadelphia.—p. 469.
*Gastro-Intestinal Infection in Relation to Infection of Liver and Bile Passages. C. G. Stockton, Buffalo.—p. 485.
*Calcification of Pituitary with Hypopituitarism: Symptomatic Treatment. G. E. Pfahler and R. L. Pitfield, Philadelphia.—p. 491.
*Actinomycosis of Tongue. G. B. New and F. A. Figi, Rochester, Minn. —p. 507.
*Pain in Threatened and Real Gangrene of Extremities: Its Relief. B. M. Bernheim, Baltimore.—p. 517.
Organization of Pneumonic Exudates. R. Floyd, New York.—p. 527.
Curability of Gastric Ulcer: Report of Fourteen Cases of Healed Lesser Curvature Ulcers. J. S. Diamond, New York.—p. 548.
A Micro-Method for Determination of Sugar in Small Amounts of Blood. H. O. Pollock and W. S. McEllroy, Pittsburgh.—p. 571.
Rôle of Concentrated Cereal-Milk Mixtures in Early Infancy. G. W. Graves, New York.—p. 576.
*Splenic and Hepatic Enlargement in Endocarditis: Two Hundred and Eighty-Six Necropsy Findings. J. H. Arnett, Philadelphia.—p. 590.

Gastro-Intestinal Infection in Relation to Liver Infections.—Stockton believes that his case illustrates the growing belief that jaundice is more often the result of an infective or toxic hepatitis, with the infection descending, than an ascending infection; that is to say, the infection reaches the liver through the portal system, and the obstruction to the outflowing bile occurs in and about the lobules and possibly at the beginning biliary passages. This does not controvert the well known fact that jaundice often arises from obstruction at the common duct or the hepatic duct, and this obstruction may, of course, be inflammatory. Except in the instance of calculi causing actual obstruction at the junction of the cystic and common ducts or in the ampulla, jaundice is probably rather rare from simple angiocholitis of the ascending variety. The disease in Stockton's case was primarily a gastritis and later an intense duodenitis; a blocking of the papilla resulted from swelling of the duodenal mucosa which caused jaundice. Meantime, the infection had been carried to the liver through the portal system, and thus there was set up a hepatitis with a descending inflammation. The case also is an illustration of possibly beneficial results from a novel method of treatment—transfusion of the normal duodenal content of a healthy donor into the functionless duodenum of a patient, also the value of intestinal perfusion. A remarkable effect was obtained by stimulating the flow of bile from a badly diseased liver by direct irrigation of the gallbladder with a magnesium sulphate solution. Stockton regards this as a novel measure of treatment, and compares it with the method of stimulating the outflow of bile as described by Lyon.

Calcification of Pituitary with Hypopituitarism.—Pfahler and Pitfield report nine cases of seriously disordered function of the pituitary with marked calcification of its tissues mostly with hypopituitary symptoms.

Actinomycosis of Tongue.—To the thirty-five cases of primary actinomycosis of the tongue recorded in the literature New and Figi add three. The condition is more commonly found in farmers or in persons whose rural life exposes them to infection. One of the authors' patients mentioned a habit of chewing bits of grass while he played golf.

Treatment for Pain in Gangrene of Extremities.—In these cases Bernheim usually has the patient give the affected part an alternate hot and cold plunge by means of two pails of water. One of these pails is filled with iced water while the other is filled with water almost at the boiling-point. The patient plunges his foot first into the cold water, leaves it there a second or two, and then without drying it at all, plunges it immediately into the hot water. After it has been in that a few seconds he puts it back into the cold water and from there again into the hot water, continuing this alternate cold and hot plunge for about five minutes, finally ending up with the hot water plunge. By this means the blood vessels alternately contract and dilate, and in many cases the process is quite obvious to the eye by the blanching and reddening of the skin of the affected part. The process is finished off with the vessels in dilation. The patient is put through these exercises three times a day, if he can stand it. In the case of most patients who have been unable to stand it there has been some degree of ulceration either around the base of the nails or at some place on the foot. At the conclusion of the baths the foot is dried off thoroughly and the whole foot and leg are well oiled with any kind of oil, such as olive oil or cacao butter, particular attention being given the parts around each nail and between the toes. The patient is then instructed to lie down and keep the foot warm for at least an hour. It is not sufficient to carry out this exercise merely with the water in shallow pails; it is far better to have a deep bucket so that the whole leg can be put in the water almost up to the knee. In between these baths the patient uses an electric vibrator over the entire leg and foot. A course of Ringer's solution by means of the duodenal tube has caused a curious alleviation of pain in many cases. Many patients object to taking it by means of the duodenal tube, so they are permitted to drink it, but the solution has a definite salty taste and it is impossible to take it in great quantities or over a long period of time by mouth.

Spleen and Liver Enlargement in Endocarditis.—Two hundred and eighty-six necropsy reports are analyzed by Arnett to ascertain the frequency and degree of splenic and hepatic enlargement in cases of endocarditis. The spleen was often found greatly enlarged in patients who had died of acute or recurring endocarditis, and this enlargement occurred independently of liver enlargement. Splenic enlargement was also frequently found in cases with noncardiac streptococcic infection and about half as frequently in chronic cardiac disease. Although it is impossible to arrive at any final conclusion as to the cause of splenic enlargement in acute and recurring endocarditis, the evidence points toward infection rather than back pressure or infarction as being the factor of most importance in causing the spleen to enlarge. Splenic enlargement is an important diagnostic sign in acute and recurring endocarditis, and is frequently overlooked in the physical examination.

American Journal of Obstetrics and Gynecology, St. Louis

April, 1922, **3**, No. 4

*Normal Variations in Type of Female Pelvis: Obstetric Significance. J. T. Williams, Boston.—p. 345.
*Exophthalmic Goiter and Pregnancy. I. Bram, Philadelphia.—p. 352.
Distribution and Function of Uterine Ciliated Epithelium in Pig; Certain Clinical Hypotheses. F. F. Snyder and G. W. Corner, Baltimore.—p. 358.
Relation Between Toxemia of Pregnancy and Uterine Sepsis From Study of 400 Toxemic Cases. F. S. Kellogg, Boston.—p. 366.
Lithopedion Formation in Extrauterine Fetal Masses. R. D'Aunoy and E. L. King, New Orleans.—p. 377.
Premature Separation of Normally Implanted Placenta. A. C. Williamson, Pittsburgh.—p. 385.
Gynecologic Operations Under Local Anesthesia. R. E. Farr, Minneapolis.—p. 400.
*Ureteral Obstruction. Failure to Recognize Ureteral Obstruction a Frequent Cause of Unnecessary Operations. K. I. Sanes, Pittsburgh. —p. 405.
*Indications for and Dangers in Use of Spinal Anesthesia in Obstetrics, Gynecology and Abdominal Surgery. R. R. Huggins, Pittsburgh.—p. 412.
Oxygen in Peritoneal Cavity; Report of Cases. W. S. Bainbridge, New York.—p. 419.
Rhythmic Electric Waves in Gynecology. G. M. Massey, Philadelphia. —p. 426.

Normal Variations in Female Pelvis.—Impressed in the course of routine antepartum examinations by the large number of contracted outlets found in women with broad hips and large external measurements, Williams found after a time that he could predict almost with certainty that when the external measurements exceeded 30 cm. in the intercristal diameter, and 20 cm. in the anteroposterior diameter, the transverse diameter of the outlet would be more or less contracted and the pubic arch angular. On the other hand, in women whose measurements which did not exceed 20 cm., 25 cm. and 28 cm. for the external conjugate, the interspinous and intercristal diameters, respectively, a wide arch and an ample transverse diameter of the outlet could be looked for. These observations led Williams to believe that there are two distinct types of female pelvis both of which must be regarded as normal, the "feminine" and the "muscular" types. The "feminine" type presents external measurements closely approximating the 20, 25, 28 cm. of the textbooks with thin bones and a wide outlet. The "muscular" type is characterized by large external measurements, but a narrow outlet and an angular pubic arch. The bones are, as a rule, heavier. The os pubis is thicker and more horizontal, and the pelvic inclination is increased. The muscles and fasciae are firmer than in the first type. Although both types must be considered as normal, the "feminine" type is much the more favorable for labor. In the "muscular" type premature rupture of the membranes occurs in nearly 40 per cent. and posterior positions of the occiput are more common. In spite of the large external measurements, cesarean section was necessary in a greater percentage of pelves of the muscular type. Both the normal mechanism of labor and operative interference are unfavorably affected by the horizontal os pubic and the greater pelvic inclination in this type.

Exophthalmic Goiter and Pregnancy.—In females with exophthalmic goiter, Bram says, the sexual instinct and emotions must be suspected as partially or wholly an etiologic factor until the contrary can reasonably be proved. In both sexes, in the presence of exophthalmic goiter sterility is common, but not the rule. In the female, though the libido may be normal or acute, there frequently occurs a degree of vaginismus and a dread of coitus. While in an important percentage of cases pregnancy seems to have been the exciting cause of the affection, in general pregnancy helps rather than hinders improvement when the disease already exists. On the other hand, the occurrence of pregnancy in a markedly advanced case of the disease is usually detrimental, as the vital organs are unable to cope with the increased demands made on them. Miscarriage is apt to result within the first few months. Occasionally, an infant born of a mother suffering with this affection may present congenital goiter with or without evidences of hypothyroidism or of cretinism. Lactation is decidedly harmful to these women. When repeated pregnancies occur, there is a tendency on the part of the thyroid toward hyposecretion. Such patients are especially prone to present a combination of hypothyroidism and hyperthyroidism simultaneously, with a predominance of the former. Also, among such patients an occasional "burned out" thyroid is observed, in which the condition, evidently tending toward spontaneous recovery, is seen to overlap this point and soon takes on the clinical picture of a varying degree of myxedema.

Ureteral Obstruction.—Attention is directed by Sanes to the frequent failures to diagnose ureteral obstruction, the reasons being the anatomic relationships of the ureter and the great variety of obstructive factors. Good histories and careful physical examinations can be relied on to give the indications for investigation of the urinary tract. The diagnostic value of cystoscopy, ureteral catheterization and ureteropyelograms in the cases of ureteral obstruction are discussed and cases are cited.

Spinal Anesthesia in Gynecologic Operations.—The freedom from nausea, abdominal distention, postoperative weakness and other disturbances so common with other forms of anesthesia led Huggins to recommend spinal anesthesia as an improved method when given under proper supervision and with full knowledge of its danger. Spinal anesthesia is the best anesthetic known today for certain operations in the lower abdomen. It should be given only after careful study of the patient. If it is not properly employed by one possessing sufficient skill, it may have a large mortality. The operator must exercise considerable judgment as to which anesthetic should be employed in a given case.

American Journal of Roentgenology, New York

March, 1922, **9**, No. 3

*Veils in Right Hypochondrium and Their Differentiation From Other Organic Lesions and Spasm. L. G. Cole, New York.—p. 137.
Minimum Erythemia Dose with Diagnostic Voltages. A. W. Erskine, Cedar Rapids, Ia.—p. 148.
*Possibilities of Roentgen-Ray Treatment in Cancer of Pancreas. G. E. Richards, Toronto, Can.—p. 150.
Relation of Temperature Changes to Roentgen-Ray Skin Reactions. C. L. Martin and G. T. Caldwell, Dallas, Tex.—p. 152.
Value of Interstitial Radiation. D. Quick, New York.—p. 161.
Roentgen Rays of Short Wave-Lengths and Their Measurement. W. Duane, Cambridge, Mass.—p. 167.
Auto-Electronic Discharge and Its Application to Construction of New Form of Roentgen-Ray Tube. J. E. Lilienfeld, Leipsic, Ger.—p. 172.
Stereofluoroscopy. J. D. Morgan, Montreal, Can.—p. 180.
New Technic for Vertical Examination of Sphenoids and Ethmoids, with Demonstration of Special Sphenoid Film Holder. G. E. Pfahler, Philadelphia.—p. 183.
Dental Roentgenography in Light of Clinical and Pathologic Findings. A. S. Wolfe, Washington, D. C.—p. 186.

Veils in Right Hypochondrium.—The roentgen-ray findings which Cole believes to be characteristic of a veil in the right hypochondrium are: the cap and perhaps the extreme pyloric end of the stomach are partly constricted or compressed, and fail to fill to their normal dimensions, particularly on the anterior superior surface. The left superior surface of the cap has a thin feathered-out appearance, whereas the right side of the cap has a clear-cut, definite, well-defined line. If the veil also involves the extreme pyloric end of the lesser curvature of the stomach, this region has a puckered appearance, somewhat simulating the finding observed in cases of prepyloric folds. The pyloric sphincter is clear cut and well defined if the veil involves only the cap. But if it also involves the stomach, the pyloric sphincter, particularly on the lesser curvature surface of the lumen, is irregular and often thickened by comparison with the sphincter on the opposite side of the lumen. The deformity is more marked with the patient in the erect or prone posture, and may be absent with the patient lying on the right side. The line or torsion runs downward and to the right from the gastrohepatic ligament (mesogastrium) toward the gallbladder, the under surface of the liver, or the hepatic flexure. These veils are rarely if ever obstructive to the pylorus, and if gastric retention occurs, it is probably functional rather than organic. If the veil fails to extend as far up as the cap, or stomach, it may then involve only the anterior surface of the descending duodenum, causing that to be adherent to the under surface of the liver, gallbladder, or hepatic flexure. There may be an angulation, rarely amounting to a partial obstruction, involving the midportion of the descending duodenum. These veils, either by direct contraction or by tortion with the patient in certain postures, cause a deformity of the hollow viscera in the right hypochondrium, particularly the cap. This results in roentgen findings which so closely simulate either postpyloric ulcers or gallbladder adhesions, that it probably accounts for most of the erroneous roentgen diagnoses of postpyloric ulcers, especially in those cases in which a sufficiently extensive series of plates has been made and carefully studied by a competent observer.

Roentgenotherapy of Cancer of Pancreas.—Richards asserts that it is possible favorably to influence the growth of pancreatic cancer, and this is sufficient to justify the intensive irradiation of every case as early as the diagnosis can be established. It appears probable that adenocarcinoma of the pancreas is more susceptible to irradiation than some other forms of adenocarcinoma.

Annals of Surgery, Philadelphia

April, 1922, **75**, No. 4

Drainage. J. A. Blake, New York.—p. 385.
War Injuries Coming to Subsequent Operation. W. M. Jones, St. Louis.—p. 389.
*Treatment of Surgical Tuberculosis with Carbon Arc Lamp. P. K. Sauer, New York.—p. 400.
Tuberculous Abscesses of Chest Wall: Nine Cases. H. Auchincloss, New York.—p. 404.
*Case of Postoperative Tetany with Implantation of Human Parathyroids. A. E. Brown, Colac, Victoria, Australia.—p. 418.
Lethal Factors in Acute Ileus. F. T. Van Beuren, Jr., New York.—p. 423.
*Cause of Death in High Intestinal Obstruction. J. W. Ellis.—p. 429.
*Present Status of Epiplopexy. J. H. Gibbon and J. B. Flick, Philadelphia.—p. 449.
*Bleeding Ulcer of Duodenum Associated with Cholecystitis. Report of Four Cases. E. S. Judd, Rochester, Minn.—p. 459.
Traumatic and Industrial Hernia. W. B. Coley, New York.—p. 467.
*Nontubercular Kidney Infections. R. P. Sullivan, New York.—p. 478.
Diagnosis of Shadowless Renal Calculi; With Especial Reference to Those of Cystin Composition. R. C. Graves, Boston.—p. 487.

Intra-Abdominal Hemorrhage from Ruptured Corpus Luteum. E. C. Moore, Los Angeles.—p. 492.
Premature Ossification After Separation of Lower Radial Epiphysis. M. K. Smith, New York.—p. 501.

Carbon Arc Lamp Treatment of Surgical Tuberculosis.—Sauer considers the carbon arc lamp to be an effective agent in curing cases of surgical tuberculosis. It is as effective as the natural sunlight and has the advantages of convenience and independence of the weather. It is just as effective, if not more so, than the roentgen rays without the attendant dangers. It is far more effective than the quartz mercury vapor lamp. He has used the lamp in seven cases of tuberculosis, including bone, glandular, peritoneal and kidney cases. Four patients were cured; two were improved and one, a gland case, was unimproved. From forty to 160 treatments were given.

Parathyroid Implantation for Postoperative Tetany.—Brown reports a case in which tetany resulted after the removal of the right lobe of the thyroid. Attacks continued with varying frequency for eight years—but were absent during pregnancy. The attacks consisted of cramps in the limbs and body with severe pains around the heart. The hands assumed the typical tetany or "obstetric" position. The elbows were strongly semiflexed, the ankles plantarflexed and the toes pointed. The pulse in the attacks was from 100 to 110. The patient was afflicted with severe terror. Chvostek's facial nerve sign was present. Administration of dried thyroid and implantation of three human parathyroids under the aponeurosis of the external oblique muscle failed to give relief. Bullock's parathyroid emulsified in glycerin injected intramuscularly also failed. Implantation of three human parathyroids obtained from the body of a boy who died from the results of an accident, within forty minutes of his death, inside the sheath of the left sternomastoid muscle gave relief for about four months. Then the woman became ill with diarrhea. She was cyanosed and very terrified. The hands and arms were clenched, but not in the tetany position—the toes pointed and the calves stiff. Nothing abnormal was discovered. She was very hysterical, shrieked with terror if the room door was shut, globus hystericus was present intermittently, and other varying symptoms, including blindness. She was absolutely unable to sleep and narcotics had no effect whatever. Considerable edema developed in the back and legs. She was found dead in bed about a month later.

Cause of Death in High Intestinal Obstruction.—The research reported on by Ellis is based on the extremely close similarity existing between the clinical pictures of acute pancreatitis, ileus and acute fulminating peritonitis. He believes that the toxin that is the cause of death in the one case is identical with, or closely allied chemically to, that which produces death in the others, irrespective of its initial source. It probably arises within the cells of the mucosa of the duodenum in ileus, and takes origin in the cells of the pancreas in acute pancreatitis. It is inert in the cells in the normal organ, and when it is excreted into the lumen, under normal conditions, is immediately combined with the content of the intestine, and is innocuous. In obstruction the condition is changed, and instead of being thrown out into the lumen of the intestine, the major portion is forced into the lymph, and thence into the general circulation; the portion thus excreted is intensely toxic, judging from the toxicity of the relatively small amount that is present in the content of the bowel. Experiments are reported on in which this toxin was used. Since erepsin fails to exert any action on the toxin, and since the toxin shows no lymphagogic action whatever, it is concluded that the toxin is neither a proteose nor a heteroproteose. The clinical advantage of gastric lavage in these cases is explained by the removal of the toxic content and the favoring thereby of an increased excretion into the lumen of the intestine. In addition to this treatment, Ellis says should be added the introduction of large amounts of saline, both intravenously and by the rectum, to further the excretion of the toxin both by the bowel and by the kidneys. Finding the toxin in the intestinal content after the removal of the suprarenals suggests that clinically epinephrin should be added to the saline infusion in sufficient amount so that a continuous supply of epinephrin is being furnished.

Epiplopexy.—The operative mortality in the ten cases reported on by Gibbon and Flick was 20 per cent. One patient died of pneumonia forty-eight hours after operation and the second died four days after operation from peritonitis. In the last six cases there has been but one death with which the operation might be associated. This patient died two months after operation; she was a syphilitic. One patient was relieved of all symptoms for three years, then died of apoplexy. One patient was relieved of symptoms for eighteen months and able to work, then had several profuse gastric hemorrhages, which were controlled under rest, and the patient was discharged from the hospital in good condition. No ascites; died four years after operation; cause of death unknown. One patient is alive eighteen months after operation and in good health; has gained 25 pounds in weight. There is no evidence of a reaccumulation of fluid. One patient is alive six months after operation and able to do light work. There has been no reaccumulation of fluid since discharge from hospital. One patient, a syphilitic, is alive five years after operation with no relief of symptoms.

Bleeding Ulcer of Duodenum Associated with Cholecystitis.—Four patients with bleeding duodenal ulcers in whom the pathologic condition was more extensive in the gallbladder than in the duodenum have been operated on by Judd within the past year. In each case the duodenal ulcer could be demonstrated easily and in one case it was of long standing, as evidenced by the amount of scar tissue. A very severe grade of cholecystitis was also present in all of these cases. The gallbladders of the four patients were very much alike, being rather larger than normal, with thick, edematous walls. They were not compressible, because of the inflammatory deposits in the tissues. They contained stones and infected bile in each instance. These cases of cholecystitis and duodenal ulcer were also very similar clinically. The chief symptom in each case was gastro-intestinal hemorrhage, usually very severe, occurring at intervals of a few months. All four patients complained of mild dyspepsia which was easily controlled by regulation of the diet and proper management. The massive hemorrhages occurred when least expected, often when the patients had been symptom-free for a long time. None of the four had ever had severe pain. It was impossible to elicit a history of gallstone colic or any other symptom suggestive of a disease of the gallbladder. The findings in these four patients impressed Judd with the importance of infections in the gallblader as a possible etiologic factor in cases of gastro-intestinal bleeding. A definite lesion in the duodenum was found in every instance and undoubtedly was the point from which bleeding occurred. The hemorrhages were of the massive type, such as usually occur from the pancreatico-duodenal artery, and yet in each case it was quite definitely shown that none of the larger vessels could be involved in the ulcerations.

Nontuberculous Kidney Infections.—A sudden attack of pain in kidney region associated with fever in a patient known to have a suppurative process elsewhere in the body, Sullivan says, should excite suspicion of metastatic kidney infection. The source of the infection may not only be a general disease, but a distant and apparently insignificant focus may be responsible. Metastatic hematogenous infection of the kidney, perinephritic or paranephritic abscess, is not always easily recognized, and may be confused with intra-abdominal infections. The treatment of perinephritic or paranephritic abscess is early drainage. When the suppuration involves the kidney parenchyma, or when the process is an acute fulminating one, nephrectomy is indicated.

Boston Medical and Surgical Journal

April 20, 1922, **186**, No. 16

*Opportunities of General Practitioner in Medical Investigation. R. I. Lee, Cambridge.—p. 523.
Case of Recurrent Bilateral Pneumothorax. J. B. Hawes, Boston.—p. 528.
Present Conception of Colon Pyelitis as Regards Treatment. E. G. Crabtree, Boston.—p. 530.
Progress in Laryngology. H. P. Mosher and G. Barry, Boston.—p. 532.

Opportunities of General Practitioner in Medical Investigation.—The progress in medicine does not, Lee says, concern itself exclusively, or even mainly, with the limited investigation of the ultility of some delicate laboratory procedure in diagnosis, prognosis and treatment. The field is far larger than that. Modern hospitals are tending to develop into diagnosis clinics. After the diagnosis is made, the treatment is outlined and usually expediency, partly from the financial point of view, but largely from other points of view, make it desirable that the treatment should be in the patient's home, that is to say, properly under the charge of the general practitioner. Outside of special therapeutic procedures, such as operations, etc., treatment will be largely in the hands of the general practitioner. Successful treatment in the case of many diseases must be applied over a considerable period of time. It is only the general practitioner with his continuous surveys, who can record the actual results and make proper deductions therefrom. It seems to Lee that in the line of treatment there are tremendous opportunities for investigation on the part of the general practitioner. He takes the single illustration of the amount of exercise which patients with cardiac disease should take. Obviously the hospitalized patient of this type is out of the question. If the hospitalized patient recovers sufficiently to go home and resume ordinary life to a greater or less extent, he comes under the charge of the practitioner, and joins an already large group with which any practitioner is always familiar. These cases will be under the observation of a general practitioner for a period of many years. They offer opportunities for carefully recorded data which would be of inestimable value to the medical profession. There is, perhaps, a tendency among medical men to assume that the dictum of rest in patients with cardiac disease has been somewhat overemphasized, but there are at the present time no sufficient data upon which to justify that assumption. The general practitioners could contribute tremendously important data on that particular point. Each practitioner will find readily available ample material so that he may undertake the kind of investigation which his interest and his material indicate. In the study of early disease, and in the treatment of chronic disease, the general practitioner has a vantage position in which he has unexcelled opportunities. By his investigations, the medical practitioner, like the laboratory worker, will only very rarely, indeed, make important scientific discoveries, but both the practitioner and the laboratory worker will prodigiously benefit themselves by their investigations. The benefit is not solely selfish, certainly not in the case of the general practitioner, because the community will be the ultimate gainer.

Journal of Nervous and Mental Disease, New York

March, 1922, **55,** No. 3

*Solitary Tubercle of Spinal Cord. W. Thalhimer, Milwaukee, and G. B. Hassin, Chicago.—p. 161.
*Juvenile Paresis Associated with Hypopituitarism and Sympathicotonic Trend. T. Raphael and S. Gregg, Kalamazoo, Mich.—p. 194.
Progressive Cerebral Hemiplegia: Its Pathogenesis and Differential Diagnosis. A. Gordon, Philadelphia.—p. 200.

Symptoms of Solitary Tubercle of Spinal Cord.—In the case reported by Thalhimer and Hassin the spinal cord symptoms and signs were those of tumor of the spinal cord. Had not an ostearthritis of the spine preexisted, which suggested the possibility of pressure on the cord from this process, the preoperative diagnosis should have been "tumor of the spinal cord." Therefore, solitary tubercle of the cord must be considered in all cases with symptoms of primary tumor of the cord. A complete Froin's syndrome was present in the spinal fluid, i. e., clear, yellow fluid which clotted spontaneously. This is considered by some observers, in the absence of history of trauma, to be pathognomonic of a spinal cord tumor. There was evidence to show that the spinal cord was not only compressed, but the spinal canal was completely blocked at the level of the tubercle. Repeated lumbar punctures yielded only from 1 to 4 c.c. of fluid, and pressure on the jugulars caused no further flow. At the first operation performed, a laminectomy, a probe was passed between the dura and cord beyond the region in which the tubercle was found at the second operation. Nevertheless, in spite of the functional block in the spinal canal, the probe met no obstruction. Also, it was impossible to detect the presence of the enlargement caused by the tubercle. The lesson to be learned is always to be sure in operating in cases manifesting cord level lesions to perform the laminectomy high enough, and never to trust the evidence obtained by passing a probe in the spinal canal beyond the exposed area of cord. At the second operation the tubercle at the level of the second dorsal vertebra was easily enucleated. There was so much loss of spinal cord substance, however, that there was no return of function, and the patient died from exhaustion and other causes secondary to his complete paraplegia. It is believed that when the tubercle is solitary and not multiple, and if there is not an extensive generalized tuberculosis, operative removal is indicated in spite of the localized tuberculous meningitis situated about the tubercle. The pathology of tubercle of the cord is discussed by the authors and abstracts are given of cases of solitary tubercle of the spinal cord, collected from the literature.

Juvenile Paresis Associated with Hypopituitarism.—Report is made by Raphael and Gregg of a case evidencing, in significant relief, the association of a syphilitic process (juvenile paresis) with deficient hypophysial functioning and sympathicotonic trend, affording indication of the importance of systematic vegetative and endocrine analysis in acquired and congenital syphilis, particularly where associated with nervous system involvement.

Public Health Journal, Toronto

April, 1922, **13,** No. 4

Health Propaganda. J. T. Phair, Toronto.—p. 145.
Some Aspects of Mental Hygiene of Childhood. H. C. Cole.—p. 149.
How Life Begins. E. L. Moore.—p. 158.
Life Problems of Social Hygiene. F. E. Brown.—p. 161.
Sex Education (continued from previous issue).—p. 174.

South Carolina Medical Association Journal, Greenville

April, 1922, **18,** No. 4

Physician's Obligation to Patient. H. L. Shaw, Sumter.—p. 82.
Infectious Jaundice, or Weil's Disease, Also Spirochetal Jaundice: Report of Four Cases. C. S. Breeding, Anderson.—p. 85.
Restoration of Function in Gynecologic Surgery. W. D. James, Hamlet.—p. 87.
Some Abuses of Cathartics. B. H. Baggott, Columbia.—p. 91.
Vesico-Vaginal Fistula; with Case Report of Successful Operation on Fistula of Eight Years' Standing, Patient Having Had Four Unsuccessful Operations. C. J. Lemmon, Sumter.—p. 94.
Types, Causes, Prevention and Treatment of Diarrheas in Infancy. W. P. Cornell, Columbia.—p. 95.
Splenomyelogenous Leukemia. G. Bare, Starr.—p. 100.

West Virginia Medical Journal, Huntington

March, 1922, **16,** No. 9

Co-Incident Calculus and Diverticulum of Bladder. J. L. Crenshaw and C. B. R. Crompton, Rochester, Minn.—p. 335.
Physiology of Pylorus. E. J. Thomas, Morgantown, W. Va.—p. 341.
Ideal Obstetrician. G. C. Mosher, Kansas City, Mo.—p. 348.
"Teething" Baby. C. D. Holland, Fairmont, W. Va.—p. 357.

Wisconsin Medical Journal, Milwaukee

April, 1922, **20,** No. 11

Some Aspects of Local Anesthesia Problem. R. E. Farr.—p. 547.
*Two Common Types of Cardiac Arrhythmia. M. F. Rogers, Milwaukee.—p. 551.
*Surgery of Infantile Paralysis. F. J. Gaenslen, Milwaukee.—p. 555.
Early Wisconsin Medical History. H. P. Greeley, Madison.—p. 558.

Cardiac Arrhythmia.—Auricular fibrillation Rogers says probably is responsible for from 60 to 70 per cent. of arrhythmic decompensated hearts. This condition of affairs arises because (1) the physician either fails to recognize the type of arrhythmia or (2) more generally, he fails to give digitalis in adequate dosage. Rogers believes that a good standard tincture is far superior to any proprietary preparation.

Surgery of Infantile Paralysis.—Gaenslen emphasizes the fact that the problem of the functional reconstruction of the paralytic cripple involves not only a thorough knowledge of anatomy, but also a full appreciation of the mechanics of weight bearing and muscular action. Every case demands careful observation and study so that if surgery is decided on a careful operative plan is worked out.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

March, 1922, **16**, No. 1

Undulant Fever in Goat in Malta. T. Zammit.—p. 1.
Undulant Fever in Naval, Military and Civilian Populations of Malta. J. W. W. Stephens.—p. 11.
*Alastrim; Kaffir Milk Pox. L. M. Moody.—p. 21.
New Species of Phlebotomus from Trinidad. R. Newstead.—p. 47.
New Tsetse-Fly from South Cameroons. R. Newstead and A. M. Evans.—p. 51.
Australian Cestodes. P. A. Maplestone.—p. 55.
Notes on Australian Cestodes. P. A. Maplestone and T. Southwell.—p. 61.
Contribution to Knowledge of Bionomics of Sand-Flies. J. Waterston.—p. 69.
Human Intestinal Protozoa in Amazonas. C. J. Young.—p. 93.
Parasite Resembling Plasmodium Falciparum in a Chimpanzee. B. Blacklock and S. Adler.—p. 99.

Alastrim: Kaffir Milkpox.—Moody presents the results of his analysis of 2,912 cases of alastrim which passed through the Isolation Hospital at Kingston, Jamaica. About 6,000 cases have occurred throughout the island. The incubation period varied from ten to fourteen days. The onset of the disease is sudden. There is a rise of temperature accompanied by headache and backache, and occasionally pains in the limbs and vomiting. The characteristic eruption appeared with about equal frequency on the third or fourth day after the onset of the symptoms. The rash does not appear in crops, but it is often two or three days before the full extent of the eruption is obvious. The order in which it affects the various parts of the body is similar to that of true smallpox. After its appearance it gradually passes through the vesicular stage until it reaches maturity at about the sixth or seventh day. There is no tense shotty feeling until the rash is nearly matured. Of the complications and sequels, bronchopneumonia is the most serious. Laryngitis and aphonia occur in the severer cases, but disappear as the rash disappears. Conjunctivitis and impetigo have also been noted. Boils are the most frequent sequel. Prognosis is good, except in the newly born and in the hemorrhagic type of rash. Among the 2,912 cases analyzed there have been only thirteen deaths. It is Moody's opinion that alastrim and vaccinia belong to the same group but present slight individual differences, the one disease affording almost complete immunity to the other.

Indian Medical Gazette, Calcutta

March, 1922, **57**, No. 3

Rhinosporidium Kinealyi of Conjunctiva Cured by Tartarated Antimony (Tartar Emetic); Case in Which Lachrymal Sac was Affected by This Sporozoon. R. E. Wright.—p. 81.
Rhinosporidium Kinealyi of Conjunctiva. R. E. Wright.—p. 82.
Blackwater Fever as it Occurs in Duars and Its Treatment. S. C. Roy.—p. 83.
*Laboratory Records from Mesopotamia. F. P. Mackie and C. Trasler.—p. 85.
Indian Cantharides. B. N. Dutt.—p. 92.
Removal of Tonsils and Adenoids. G. T. Birdwood.—p. 93.
*Unusual Postoperative Phenomenon in Thyroidectomy. A. K. Lauddie.—p. 95.
Epidemic of So-Called Nagasore at Unao. S. N. Mathur.—p. 96.
Case of Traumatic Myositis Ossificans. S. L. Bhatia.—p. 96.
Case of Radical Cure of Irreducible Scrotal Hernia. F. J. W. Porter.—p. 98.
Cyst Over Sternum. A. Bayley de Castro.—p. 99.
*Case of Acute Inflammation of Gallbladder in Which Gallstones Were Found Fractured. F. J. W. Porter.—p. 99.
Case of Pluriglandular Insufficiency. A. D. Harvey.—p. 100.
Case of Leukoderma. N. Ghosh.—p. 100.
Case of Typhus-Like Fever (Rocky Mountain Fever?) Occurring at Murree. H. C. Keates.—p. 101.

Results of Examination of Stools.—Out of 1,121 stools, whether containing blood and mucus or otherwise and including those from all stages of disease in British or Indians, 20.3 per cent. yielded *B. dysenteriae* (Shiga), 15.8 per cent. contained *B. dysenteriae* (Flexner), and 3.3 per cent. undifferentiated strains. Of the total successful platings, viz., 443, 51.4 per cent. were Shiga infections, 40.1 per cent. were Flexner infections, and 8.3 per cent. were irregular strains of *B. dysenteriae*. In one consecutive series of 105 stools from acute cases, specific dysentery bacilli were recovered in 59.2 per cent. In a series of 364 stools from subacute or chronic cases, which contained no obvious blood or mucus, 10.9 per cent. were positive, and of these Flexner infections were twice as numerous as Shiga. In a series of British and Indian dysenteric stools, *B. dysenteriae* were isolated from 32.6 per cent. of the former and 22.6 per cent. of the latter. *B. dysenteriae* dies out quickly from the stools and disappears when the acute stage of the disease is passed and when the stool becomes fecal. Thus 50.0 per cent. of the platings were successful during the first week, 36.0 per cent. in the second week and only 27.0 per cent. during the third week. In 6,550 samples of feces in all stages of the disease 19.2 per cent. were found to contain *E. histolytica* or its cysts.

Swelling of Neck After Thyroidectomy.—About two hours after the removal of an enlarged right lobe of the thyroid the patient's neck was noticed to be swollen to an unusual extent. On removal of the sutures and opening the wound the omohyoid and other thin muscles of the neck were found to be very edematous. Except for slight capillary oozing, there was no arterial or venous hemorrhage to account for the swelling and so the wound was closed and dressed as before. The swelling continued and increased that day involving the left side of the neck as well, but it commenced to subside after twenty-four hours and the patient made an uninterrupted recovery. The patient never had tachycardia, dyspnea, dysphagia, nerve pressure or other symptoms of toxic secretion. No explanation is given by Lauddie as to the cause of the swelling.

Gallstones in Inflamed Gallbladder.—Six large stones were removed from a gallbladder by Porter. The stones were all broken across and the fractured surfaces could be fitted accurately to make smooth round stones. He is unable to suggest a reason for its occurrence. No forceps were used to remove the stones. It was done by a scoop.

Japan Medical World, Tokyo

January, 1922, **2**, No. 1

*Pharmacologic Studies of Few Derivatives of Chaulmoogra Oil. M. Ohara.—p. 1.
*Studies on Rat Leprosy. M. Uchida.—p. 4.
Simple Procedure to Exclude Central Mechanism of Body Temperature Regulation. S. Morita.—p. 7.
Strain of Pyogenic Diplococcus. M. Kusunoki.—p. 10.

Pharmacology of Chaulmoogra Oil Derivatives.—Ohara's studies have shown that sodium gynocardate, gynocardate ethylester and gynocardate idio-ethylester produce central paralysis. The toxic action is more marked with sodium gynocardate, next idio-ethylester and the least is ethylester. On isolated frog heart the idio-ethylester had almost no action, but ethylester has a slight paralytic action. They have inhibitory actions on the isolated rabbit intestine. On rabbit uterus they have stimulating action. They seem to act on the muscles themselves. The action of gynocardate idio-ethylester is the weakest. On the blood vessels all three drugs have contracting action. In diluted solutions they seem to have dilatating caution on the rabbit ear vessel. On the blood pressure, sodium gynocardate exerts a transitory lowering while the other two drugs have only a lowering action.

Rat Leprosy.—Experimentally Uchida was able to infect rats *(Mus decumanus)* and white rats with rat lepra. Nankin mice and French mice can also be infected. The pathologic changes seen in the infected white rats are more marked than those seen in natural rat leprosy. The rats and white rats infected with human lepra bacilli do not produce leprous changes. Etiologically, it is different from the rat lepra bacillus. Rat fleas on the body of rat leprosy carry many acid fast bacilli. Pure cultures of four strains were obtained from cultural experiments. One of the four produces pigment but the others do not. The other three have different cultural characteristics. Which of these four strains of the bacilli obtained is the etiologic organism is not yet determined.

Medical Journal of Australia, Sydney

March 18, 1922, **1**, No. 11

Infantile Mortality in New South Wales. J. S. Purdy.—p. 287.
Aortic Regurgitation: Its Prognosis and Treatment. H. W. Moxon. —p. 297.
*Inhalation of Petrol. A. W. St. Ledger.—p. 300.

March 25, 1922, **1**, No. 12

Importance of Acid Content of Gastric Juice in Etiology, Symptomatology and Treatment of Gastric and Duodenal Ulcers. A. E. Mills. —p. 313.
Vascular Hypertonus. H. J. Ritchie.—p. 318.
Prevention of Tuberculosis. F. J. Drake.—p. 322.
Malignant Ovarian Cyst with Splenic, Peritoneal and Pleural Metastases. A. A. Lendon.—p. 323.

Inhalation of Petrol.—While attempting to clear the petrol (gasoline) pipe of his car, Ledger's patient had sucked a considerable amount into his mouth. As this happened "he caught his breath" and some of it "went down the wrong way." Immediately he had an acute pain in the right hypochondrium, stabbing and colicky in character and much increased by respiration. The respiration was short and jerky and his breath smelt distinctly of petrol. There was no cyanosis or coughing. The respiratory movement seemed inhibited on the right side. The epigastrium was rigid and immobile. The rigidity was pronounced and accompanied by distention and tympany. There had been no vomiting. Six hours after admission he commenced coughing; the sputum was tinged with blood. The hemoptysis increased and with the increase of the pulmonary signs the abdominal signs became less definite and the picture changed to an acute pleuritic condition. Subsequently a marked effusion occurred and persisted for fourteen days. The fluid was gradually absorbed; tapping was not necessary. This case is of interest from the comparative rarity of its cause and the acute and confusing signs that resulted. Ledger regards the hemoptysis as due to a mechanical distension of the bronchioles, brought about by sudden volatilization of aspirated petrol. The abdominal signs were evidently referred through the intercostal nerves; the pleuritic effusion was secondary to the trauma.

Practitioner, London

April, 1922, **108**, No. 4

New Immunizing Tuberculosis Vaccine: Results of Treatment. N. Raw.—p. 229.
Lupus Erythematosus. J. M. H. MacLeod.—p. 236.
Sterility. S. Forsdike.—p. 243.
*Venous Thrombosis and Gastric Carcinoma. T. G. Moorhead.—p. 252.
Roentgen Rays in Dermatology. H. C. Semon.—p. 259.
Some Remote Effects of Tonsillitis. A. B. Pavey-Smith.—p. 271.
Hypothyroidism and Vicious Circle. J. B. Hurry.—p. 283.
*Drainage of Lower Abdomen. A Simple Method. G. Robertson. —p. 295.

Peripheral Venous Thrombosis Early Sign of Stomach Cancer.—Four cases have come under Moorhead's observation which attracted his attention forcefully to the importance as a diagnostic sign of gastric cancer of the occurrence of "obliterative phlebitis." The first case belongs to the rare group of cases of latent carcinoma of the stomach in which the first symptom to attract attention is the peripheral venous thrombosis. The second case is an example of the type in which the thrombosis occurred as a late, almost terminal, phenomenon. In the third case thrombosis of the left subclavian and left axillary vein directed attention to the possibility of carcinoma. An exploratory operation made a few days later disclosed an inoperable adenocarcinoma of both ovaries. In the fourth case practically every superficial vein in the body, including the veins of the abdominal wall, became thrombosed. Cancer involved the pancreas, the stomach, colon and liver. There was thrombosis of both femoral veins, extending upward into the inferior vena cava as far as the renal veins.

Drainage of Lower Abdomen.—In cases of large purulent or seropurulent effusion, lying free in the general peritoneal cavity, it has been Robertson's habit to introduce a suprapubic drain after exposing the causative lesion, but previously to dealing with the visceral accident. In this way the peritoneum, mechanically traumatized by the necessary manipulations of the chief operation, has considerably less toxic material to absorb, because a large portion of the effusion will escape through the suprapubic tube, and flow over the skin surface.

South African Medical Record, Cape Town

March 25, 1922, **20**, No. 6

Standard of Cure in Syphilis. A. R. Fraser.—p. 102.
Exophthalmic Goiter: Surgical Aspect. E. C. Long.—p. 110.
Id. Medical Aspect. A. W. Falconer.—p. 111.
Id. Electrotherapeutic Treatment. L. E. Ellis.—p. 113.
*Expulsion of Foreign Body by Unique Route. J. M. Whyte.—p. 116.

Mass of Cotton Wool Left in Pelvis Expelled from Vagina.—A young woman was operated on for ovarian dermoid of the left side. The dermoid was removed. Twelve days later she developed thrombosis of the left leg. Her temperature remained high for eleven days. She recovered and three and one-half years later (September, 1918) she gave birth to a child, the confinement being normal and the child healthy. May 12, 1921, Whyte found her suffering from pain in the right iliac fossa; her temperature and pulse were normal; no abdominal rigidity was present. On applying heat the pain subsided. The following day she was without pain. May 14 the pain again appeared without abnormal temperature or rigidity. Vaginal examination disclosed a small hard mass lying in the area of the outer portion of the right fallopian tube near the fimbriated end. Periodically, after this time pain appeared in the right side of the pelvis. These pains were particularly severe during the day before the menstrual period. Once the flow set in the pain rapidly diminished. After each menstrual period the mass was found to have moved slightly nearer the uterus. During the latter portion of July and the early part of August she complained of pain shooting down the right leg; the mass at this time was lying in the isthmus of the fallopian tube close to the uterine wall. On the morning of August 15 she was douched. Toward evening of the same day she developed pains in her back and sides. Next day the pains became more severe in character. Shortly after midday the mass was expelled through the vagina. After the expulsion of the mass the pains quickly subsided. Menstruation set in the following day. On examination after the flow had ceased no mass could be felt in the fallopian tube. Some hardening and thickening of the tube was present. Since that time the patient has been in the best of health, and experiences no pain or discomfort. On its emergence from the vagina the mass was found to be about the size of a shilling, and very hard. One half of the mass was thickened, due to its being folded over; the other half was thin. The whole was pressed flat. It was thickly covered with mucus slightly tinged with blood, and had a very fetid odor. On unravelling, it was found to be a very compressed mass of cotton wool. After washing and drying, it weighed 0.6 gm.

April 8, 1922, **20**, No. 7

Toxemias of Pregnancy. S. E. Kark.—p. 123.
Introduction to Clinical Study. C. F. M. Saint.—p. 127.
*Choice of Irrigating Solutions in Treatment of Gonorrhea. A. R. Fraser.—p. 131.
Embryology: Its Scope and Aims. M. R. Drennan.—p. 134.

Irrigating Solutions for Gonococcic Urethritis.—The ideal irrigating solution for the treatment of gonococcic urethritis Fraser says has not been found. In his experience the following solutions are generally sufficient to deal successfully with the vast majority of cases: potassium permanganate, from 1:12,000 to 1:8,000, with the addition of 0.5 per cent. sodium carbonate; zinc permanganate, from 1:10,000 to 1:6,000; mercury oxycyanid, from 1:8,000 to 1:4,000; silver nitrate, from 1:20,000 to 1:10,000.

Archives Médicales Belges, Liége

January, 1922, **75**, No. 1

Medical Teaching in the United States. J. Duesberg.—p. 1.
*Radiography of the Stomach. Van de Maele.—p. 15.

Radiography of the Stomach.—Van de Maele relates a case in which the roentgen rays revealed deep indentations in the greater curvature of the stomach, misleading to the assumption of cancer and a useless operation. The surgeons decided after two examinations on intervention for gastric cancer.

They were surprised to find the stomach absolutely normal in every respect, but the spleen was nearly double its normal size and covered with tuberosities. Van de Maele remarks that this blunder in diagnosis could have been prevented by a pneumoperitoneum as this would have shown clearly the condition of the spleen.

February, 1922, **75**, No. 2

Parthogenesis and Cancer. N. Goormaghtigh.—p. 97.
Surgical Tuberculosis. Caluwaerts and Cardijn.—p. 111.
*Late Accident Due to Neo-Arsphenamin. Van Winsen.—p. 121.

Late Accident Due to Neo-Arsphenamin.—Van Winsen reports a fatality for which evidently the arsenical was responsible. The young man of 23 had been given twenty intravenous injections, a total of 11 gm. of neo-arsphenamin. Five days after the last injection he was sent to the hospital for febrile gastric disturbance and headache, followed by pain in the right side, jaundice, convulsions, hemorrhages, coma and death the fifth day. Necropsy showed congestion of all the organs, especially the lungs and the liver, and disseminated suffusions in the brain, but no macroscopic lesions of any organs. No arsenical was found after careful analysis of a portion of the liver, and microscopic examination showed merely congestion without much alteration of its structure, and no spirochetes were found in the liver. The cause of the fatality is thus a mystery. Such mishaps are probably due to a combination of several causes, plus an individual predisposition, which unfortunately cannot yet be foreseen. It is also possible that these intravenous injections modify endocrine glands, directly or through the sympathetic nervous system.

Bulletin de l'Académie de Médecine, Paris

March 21, 1922, **87**, No. 12

*The Tuberculous Lung. P. F. Armand-Delille and P. Darbois.—p. 328.
*Cage Treatment of Wounds. H. Reynès.—p. 329.
*Autoserotherapy in Gonorrhea. Schachmann.—p. 331.
*Stain Test of Kidney Function. J. Hatiegan.—p. 333.
*Symptoms and Treatment of Electric Accidents. M. d'Halluin.—p. 335.
Pneumomycosis and Black Tongue. Sartory and Scheffer.—p. 339.

Congestion and Infiltration of Tuberculous Lung.—Comparison of the stethoscope and roentgen findings in children and adolescents has disclosed an unexpectedly large proportion of cases in which a lung with even a minute tuberculous focus shows massive congestion and infiltration. This is what Grancher called splenopneumonia. It seems to be the special form of reaction of the youthful lung to the tuberculous invasion.

Cage Treatment of Wounds.—Reynès treats certain wounds by refraining from any dressings, merely placing over the region a square wire netting frame, the sides of which are covered with a layer of muslin and the top with a sheet of transparent celluloid. The wound is thus protected against dust, etc., while left open to the air and direct inspection.

Autoserotherapy in Gonococcus Infection.—Schachmann reports very favorable impressions from subcutaneous reinjection of 1.5 c.c. of the patient's own blood serum in fifteen cases of acute gonorrhea and in five cases of gonococcus ophthalmia neonatorum. The ophthalmia subsided remarkably promptly.

Stain Test of Liver Functioning.—Hatiegan's experience has confirmed that the diseased liver does not allow the passage of indigo carmin into the bile. Bile obtained with the duodenal tube failed to show the presence of the stain in cases of catarrhal jaundice for up to four or six weeks, although bile pigments were abundant. Evidently different cells in the liver are concerned.

Factors in Death from Electrocution.—D'Halluin explains that the heart is predominantly affected with a comparatively weak current, while the respiration center bears the brunt of the stronger current. The stronger current may even arrest the fibrillation of the heart induced at the onset of the electrocution. The symptomatology is thus dual, from heart and respiration center, and treatment must aim at both these. The loss of consciousness is not from the nervous shock but from the anemia of the brain; the victim has time to cry out. The prognosis therefore is actually more favorable in apparent death from a live wire accident the higher the current, within certain limits. The cases generally regarded as the gravest ones, in reality are more often followed by recuperation than the milder ones. Artificial respiration and rhythmic compression of the chest will keep up the circulation enough to allow the centers in the medulla oblongata to recuperate. The grave danger is the inability to arrest the fibrillation of the heart. This is easily accomplished in animals by giving them an additional electric shock, but this is too heroic for human beings. D'Halluin has found that the same result may be accomplished by an intravenous injection of potassium chlorid. The shock from this arrests the heart action completely, and then immediate direct massage starts it again in the normal rhythm. Knowledge of the physiology of the heart forbids the hope of finding any simple measure effectual in these desperate cases.

March 28, 1922, **87**, No. 13

To Promote Vaccination Against Typhoid. L. Bernard.—p. 350.
Tuberculin Test of Dairy Cows. A. Calmette.—p. 352.
Homes for Nursing Women; General Discussion. L. Bernard.—p. 360.
Elaïdic Acid in Therapeutics. E. Doumer.—p. 370.
*Disinfection of Crèches. C. Mulon.—p. 374.

Disinfection of Crèches.—Mulon deplores that too much reliance is placed on routine sterilization of rooms and garments with open formaldehyd in the day nurseries for infants.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 24, 1922, **46**, No. 11

*Gonococcus Septicemia. E. Sacquépée.—p. 493.
General Paresis with Mental Confusion. P. Merklen and M. Minvielle.—p. 501.
Diaphragmatic Eventration. E. Fatou and L. Lafourcade.—p. 505.
*Mitral Stenosis with Arrhythmia. O. Josué and G. Barbier.—p. 516.
Character of Movements in Epidemic Encephalitis. E. Krebs.—p. 522.

Gonococcus Septicemia.—The septicemia developed in the first few days of acute gonorrhea, after an attack of diphtheria, and it kept up for four months. The gonococcus was cultivated from the blood at first, and then the streptococcus, and there was a process of pneumonia for which the pneumococcus was responsible. The pneumonia yielded promptly to antipneumococcus serum, and the whole clinical picture subsided after the fourth intravenous injection of antigonococcus serum.

Presystolic Murmur with Mitral Stenosis and Absolute Arrhythmia.—Josué theorizes to explain this combination in the man of 43.

March 31, 1922, **46**, No. 12

Sphygmomanometry: Technic. C. Lian.—p. 529.
Subcutaneous Injections of Iodized Oil. E. Rist et al.—p. 533.
Intratracheal Injections: Technic. P. Dalché.—p. 537.
Autohematotherapy in Protracted Infections. Lauze.—p. 538.
Case of Rat-Bite Fever at Paris. Troisier and Clément.—p. 542.
Rat-Bite Fever. J. Comby.—p. 549.
Leishmaniasis in Child in France. D'Oelsnitz et al.—p. 550.
*Epidemic Encephalitis with Polyuria. R. Benard.—p. 553.
Membranous Croup in Two Adults. Troisier et al.—p. 557.
Pituitary Syndrome. C. Achard and J. Rouillard.—p. 562.
*Lymphogranulomatosis. Laignel-Lavastine and E. Coulaud.—p. 567.
*Lymphogranulomatosis. J. Genévrier and M. Lorrain.—p. 570.

Epidemic Encephalitis with Polyuria.—Benard comments on the rarity of polyuria with epidemic encephalitis. He has found only 3 cases on record, and compares with these a case in which the young man's epidemic encephalitis was accompanied by an output of urine increasing in the third week from 4 to 16 liters and up to 20 liters by the end of the month. Then pituitary treatment reduced it to 8 or 12 liters, but was unable to reduce it more than this. Psychotherapy at this stage proved effectual and the polyuria gradually disappeared. It was evidently of pituitary origin to start with, but later the nervous element predominated. It is incorrect therefore to try to draw a sharp distinction between pituitary and nervous polyuria.

Lymphogranulomatosis.—The enlarged glands in the case of lymphogranulomatosis in the man of 30 were exposed to the roentgen rays in turn, and after a period of exacerbation of the pains, fever and other symptoms suggesting an infectious disease, the symptoms all disappeared and the glands retrogressed. The microscope showed sclerosis of sections of the glands that had been rayed. It seems impossible, however, that the mild dose of 10 H. units could have caused such a complete transformation. The cure seems absolute after the febrile course of several months. Defervescence was abrupt and definite.

Mediastinal Lymphogranulomatosis.—The first symptoms had been those of right pleurisy with effusion in the young woman, and radioscopy showed puzzling findings in the lungs. The mild fever kept up and there was occasional dyspnea and pains in the chest. There was no cough and no pruritus but the anemia and emaciation were extreme by the end of the year and epistaxis was frequent. The spleen and liver had enlarged and the right lung persisted opaque. Necropsy revealed lymphogranulomatosis in the mediastinum with nothing to suggest sarcoma or tuberculosis.

Paris Médical

April 1, 1922, **12**, No. 13

*Pathology of Digestive Apparatus in 1922. P. Harvier.—p. 261.
*Bed Rest in Treatment of Stomach Disease. P. Le Noir.—p. 270.
*Dislocation of the Pylorus. F. Ramond.—p. 274.
*Drip Feeding by the Duodenum. P. Carnot and E. Libert.—p. 276.
*The Intestinal Alarm Clock. J. Bauman and J. J. Matignon—p. 279.
Roentgen Diagnosis of Duodenal Ulcer. Guénaux and Vasselle.—p. 284.
*The Pylorus with Ulcer in Lesser Curvature. L. Timbal.—p. 287.
Direct Local Treatment of Rectum and Colon. G. Friedel.—p. 291.

Pathology of the Digestive Apparatus in 1922.—Harvier devotes ten pages to this annual review of the more important works in recent international literature, including a number from The Journal.

Bed Rest in Stomach Affections.—Le Noir declares that few realize the advantages of staying in bed during treatment for severe dyspepsia and other nonfebrile stomach disturbances. The functioning of the digestive apparatus is much facilitated by the reclining position; the viscera are inclined to sag in the erect attitude, and as they sag they become kinked, the colon in particular, and they drag on the nerves. Bed rest also does away with belt and skirt bands and the weight of clothing. The radiation of heat is minimal, and less calories are required. Digestion can proceed unhampered, while even the mildest exercise after eating may check or suspend digestion. In bed, the skin and the vegetative nervous system and the senses escape numerous causes of irritation. For these and other reasons advanced, he regards keeping in bed as one of the best methods to combat painful dyspepsia, nervous disturbances affecting the stomach, dyspepsia with tendency to emaciation, and gastric disturbances of reflex origin. Staying in bed, he remarks in conclusion, ought to take the place of drugs, which are often useless and sometimes directly injurious.

Dislocation of the Pylorus.—Ramond applies this term to the pylorus when it stays in its normal place while the rest of the stomach stretches and sags very low. The traction from the sagging stomach or the duodenum or both may induce pain or reflex colic. The clinical picture may suggest gastric ulcer, but the disturbances may all subside when a supporting band is worn to keep the stomach from sagging. As the elasticity of the stomach walls is regained, conditions may right themselves, or a gastro-enterostomy may be required.

Duodenal Drip in Treatment of Anorexia and Uncontrollable Vomiting.—Carnot and Libert report a case of mental anorexia in a young woman of six years' standing which finally became complicated with uncontrollable vomiting. Her weight was reduced to 64 pounds when they began to feed her through a duodenal tube, by the drip method, with sweetened water first and then condensed, sweetened milk. This is assimilated without need for gastric digestion. This drip feeding could be kept up even during sleep, and normal conditions were finally restored, the patient almost doubling her weight in four months. The duodenal feeding had been kept up for two or three months; no attempt at natural feeding was made until the patient begged for it herself. The tube was 2 mm. in diameter and the amount of milk thus ingested finally totaled 3½ l. a day.

The Intestinal Alarm Clock.—This term is applied by Bauman to one of the minor signs of what he calls enterocolism: The patient is waked every night at a certain hour by a transient pain in the right flank. There is hypertension in the abdomen. This may be from excessive amounts of gases or from spasmodic contractions with small amounts of gas. The solar plexus is almost always tender, but a number of cases described show that this alarm clock symptom may accompany a wide variety of intestinal disturbances. Radioscopy explains them and is the guide to treatment.

Pyloric Functioning with Ulcer of the Lesser Curvature.—Timbal reports that the pyloric function was normal in 13 of 25 patients examined with the roentgen rays; in 9 the motor functioning was retarded, and spasm of the pylorus was evidently responsible for this in 5 cases. In 3 cases the peristalsis was intense and the evacuation hasty.

Presse Médicale, Paris

April 1, 1922, **30**, No. 26

The Metabolism of Fats. H. Roger and L. Binet.—p. 277.
Shortest Infecting Period with Tubercle Bacilli. C. Souleyre.—p. 279.
Pain from Distention of Heart: Decubitus Angina. Lutembacher.—p. 281.

April 5, 1922, **30**, No. 27

Striate Body Syndrome of Syphilitic Origin in the Elderly. J. Lhermitte and L. Cornil.—p. 289.
Diphtheria Antitoxin in Prophylaxis of Orchitis in Mumps. F. Carrieu.—p. 292.

April 8, 1922, **30**, No. 28

Chronic Appendicitis. G. Laroche et al.—p. 297.
Treatment of Femoral Hernia. A. Richard.—p. 301.
Dangers of Pituitary Treatment in Obstetrics. L. Cheinisse.—p. 302.

April 12, 1922, **30**, No. 29

*The Steinach Rejuvenation Operation. G. Marinesco.—p. 309.
*Signs of Sclerosis of the Aorta. A. Mougeot.—p. 311.
Protracted Pneumococcus Septicemia. Loubet and Riser.—p. 314.

The Steinach Rejuvenation Operation.—Marinesco's views were reviewed in these columns recently, page 1346, when published elsewhere. He recalls Pézard's statement in 1918 that the adult cock and the golden pheasant have no interstitial cells during the reproductive period.

Signs of Sclerosis of the Aorta.—Mougeot explains that the aorta responds purely mechanically to the intermittent propulsion of the heart beat. The normal aorta behaves like a rubber tube with thick walls. The sclerous tube behaves more like a tube of thin steel; it does not stretch, but it is more elastic. That is, it recovers its primary form more readily. This difference is perceptible when the pulse wave is examined close to the heart, as in the arm. The suddenness and rapidity of the rise in the pulse wave testify to the sclerosis of the aorta, which suppresses the deadening effect of stretchable aorta walls. This sign of an excess of active force in the pulse wave is evident before auscultation and radioscopy give conclusive findings. The differential pulse pressure is also increased, the systolic rising while the diastolic keeps at the normal figure. A third sign is the relative hypertension in the legs. This may be so pronounced as to be evident with the Riva-Rocci cuff. The other signs are best investigated with a more sensitive instrument, such as Pachon's oscillometer. The fourth of these dynamic signs is that the femoral pulse precedes the radial. The femoral pulse at the root of the thigh and the radial pulse at the wrist are synchronous in health and with abnormally high or low pressure from other causes, but with "rigidification" of the walls of the aorta, the pulse wave reaches the thigh before it reaches the wrist, unless the arteries in the arms are rigid themselves. Some pulse tracings are given, showing in one case this precedence of the femoral pulse by 0.04 second. Functional insufficiency of the left ventricle may obscure the first three of these signs, and with an aneurysm in the aorta the findings are directly the reverse, even to the precedence of the radial pulse.

Progrès Médical, Paris

March 4, 1922, **37**, No. 9

Present Status of Deep Radiotherapy. H. Lebon.—p. 97.
Pathology of the Thymus in Children. Lereboullet.—p. 102.

March 18, 1922, **37**, No. 11

Physiologic Variations of Pepsinemia. Loeper and Debray.—p. 121.
Rise in Peptic Activity of Serum with Nonpermeable Kidneys. Loeper and Debray.—p. 121.
Operative Indications in Purulent Pleurisy. E. Pallasse.—p. 122.
Chronic Retention of Prostatic Origin. Legueu.—p. 124.
Aluminum Salicylate in Treatment of Diarrhea. A. Rochas.—p. 126.

March 25, 1922, **37**, No. 12

Malta Fever in Southeastern France. Roziès.—p. 133.
Ileocecal Tuberculosis. M. Loeper.—p. 135.
The Genital Glands and the Growth. Lereboullet.—p. 137.
Pylorospasm in the New-Born. H. Vignes.—p. 141.

April 1, 1922, **37**, No. 13

Character of Movements in Epidemic Encephalitis. Krebs.—p. 145.
*Manoukhin Treatment of Tuberculosis. Donat.—p. 147.
Bronchitis and Pneumonia in Whooping Cough. Nobécourt.—p. 151.

April 8, 1922, **37**. No. 14

Lead Poisoning in Automobile Body Painters. F. Heim et al.—p. 157.
Thyroid Psychoses. Laignel-Lavastine.—p. 158.
Artificial Pneumoperitoneum. G. Paturet.—p. 163.

Treatment of Tuberculosis by Mild Roentgenization of the Spleen.—Donat reports twenty-five cases treated by the Manoukhin method, namely, stimulation of the spleen with a small dose of roentgen rays. This promotes production of a ferment which dissolves leukocytes and thus releases specific antibodies, stimulating bone marrow functioning and hence the production of new leukocytes. The cases were taken at random in the Calmette dispensary and some were too far advanced for any relief. The results showed, however, he says, that with this treatment the bacilli disappeared from the sputum, and that considerable improvement—perhaps a cure—can be anticipated in any form of tuberculosis, in lungs, bones or joints, provided the patient can take ample nourishment. The method should be tried even in the most desperate cases, as an actual resurrection was observed in one instance. Manoukhin published in the *Lancet*, Oct. 8, 1921, an account of his success in a large proportion of the 8,000 cases in which he applied this method in Russia. A summary of Manoukhin's work in this line appeared in these columns, April 30, 1921, p. 1280.

Schweizerische medizinische Wochenschrift, Basel

March 30, 1922, **52**, No. 13

*Prophylaxis of Goiter. A. Oswald.—p. 313.
Iodin Tablets in Prophylaxis of Goiter. R. Klinger.—p. 315.
Development of Secondary Sex Characters. A. Gigon.—p. 316.
Tasks and Aims of Study of History of Medicine. H. E. Sigerist.—p. 318.
Lipomatosis Indolens Simplex. T. Hasegawa.—p. 322.

Prophylaxis of Goiter.—Oswald's experience suggests that the most effectual means for prophylaxis of goiter is by giving 1 or 2 mg. of sodium iodid once a week all through the year to schoolchildren and to pregnant women. In order to keep up the iodin after leaving school, he advocates the use of iodized salt. Sea salt naturally contains iodin. The previous attempts to use iodized salt failed because too much iodin was used.

Policlinico, Rome

March 15, 1922, **29**, Surgical Section No. 3

*Resection for Invagination. G. Beccherle.—p. 129.
*Spontaneous Amputation of Appendix. O. Cignozzi.—p. 138.
*Femoral Herniotomy. L. De Luca.—p. 141.
*Surgical Disease of the Spleen. G. Fichera.—p. 146. Conc'n.
*Reconstruction of Defects in Skulls. G. Giorgi.—p. 168. Conc'n.
Present Status of Radiotherapy. G. Rocchi.—p. 183.

Invagination.—Beccherle resected the invaginated portion which involved the ileum, cecum and colon, and the youth of 17 recovered without mishap. The mesocolon was unusually long in this case so that resection was indicated to avoid recurrence.

Spontaneous Amputation of the Appendix.—The man of 24 complained of a painful tumor in the umbilical region. It proved to be the spontaneously amputated appendix which had become wrapped up in omentum.

Treatment of Femoral Hernia.—De Luca reports the immediate and remote results of Parlavecchio's method for radical treatment of femoral hernia. He declares that this method has definitely solved the problem of treating this form of hernia. It has been applied to twenty-three women and seven men in his service and in over twenty-five cases in other Italian clinics, and there has been no recurrence in any instance, while healing was always by primary intention. The illustrations show how Poupart's ligament is drawn down to Cooper's ligament and the ligaments are sutured together, with three stitches, closing the opening.

Operations on the Spleen.—Fichera tabulates twenty-two cases of malaria in which he removed the much enlarged and sagging spleen. One patient succumbed to postoperative collapse and necropsy revealed chronic nephritis with atrophy and malarial cirrhosis of the liver. All the others recuperated remarkably in their general health after the operation.

Operative Treatment of Jacksonian Epilepsy.—Giorgi's personal observation and review of the literature confirm that recurrence is liable after latent periods of three, four or five years. It is always advisable to turn back an ample skull flap and incise the dura, for thorough inspection, but cures have been realized even without making a valve or excising the lesion in the cortex responsible for the convulsions. The postoperative paralysis after excision of brain substance usually retrogresses completely, and the convulsions liable to develop after the operation may cease entirely after an interval of months or even years. Parlavecchio's method of making an elastic valve in the rigid theca avoids the danger of sinking in of the bone on the brain, which is liable with Krause's method. The less cicatricial changes entailed by the operation, the less the danger of recurrence. Some of the surgeons cited have patients cured for from four to ten years to date. Recurrence is less liable when the cicatricial tissue is glia rather than connective tissue; there is less retraction with it, and hence less irritation of the brain. Extensive loss of tissue and infection tend to entail proliferation of connective tissue rather than of glia. Consequently every effort should be made to avoid stimulation of connective tissue formation.

Riforma Medica, Naples,

March 6, 1922, **38**, No. 10

*Action of Antibodies by the Mouth. L. Sivori.—p. 217.
Huge Congenital Cystic Lymphangioma of Neck. Giacanelli.—p. 219.
*Pathogenesis of Endemic Cretinism. A. Jona and A. Lusso.—p. 223.

Action of Antigens and Antibodies by the Mouth.—Sivori asserts that the prevailing disregard for the gastric route for incorporation of antigens and antitoxins is a great mistake. It should be regarded as the great main route for true natural immunity. Subjects without antibodies show the progressive appearance of antibodies in their serum when given tuberculin systematically by the mouth. Giving the antigen parenterally induces a precipitate immunization against a given bacterium and its toxins, and renders the organism more resistant to it.

Pathogenesis of Endemic Cretinism.—Jona and Lusso have been studying conditions at Cogne, a notorious mountain focus of endemic cretinism, and confirm that there is an evident connection between poverty and cretinism, and that alcohol, syphilis and inbreeding must be incriminated.

Tumori, Rome

March 15, 1922, **8**, No. 4

Endothelioma in the Parotid; Two Cases. L. Torraca.—p. 385.
*Tumors in Rectus Muscles. L. de Luca.—p. 406.
Cystoscopy and Catheterization of the Ureters in Examining for Uterine Cancer. V. Cantoni.—p. 418.
The Skin Manifestations in Hemoblastosis. Martinotti.—p. 448. Conc'n.

Tumors in Rectus Muscles.—The tumor was a fibrolipoma or an angiomatoid carcinoma in the two women of 44 and 45.

Semana Médica, Buenos Aires

March 2, 1922, **1**, No. 9

*Malignant Lymphogranuloma? I. Allende.—p. 321.
*Autoserotherapy of Serum Sickness. C. E. Pico.—p. 328.
*Artificial Dilatation of Uterine Cervix. C. Lanza.—p. 329.
Vitamins in Medicine. H. Damianovich.—p. 337. Cont'n.

Malignant Lymphogranulomatosis.—In this bedside lecture on a case of what seemed to be Hodgkin's disease in a young man, Allende warned of the necessity of caution with radiotherapy in such conditions, telling of one case in which radium treatment was followed as if by magic by the almost sudden disappearance of the enormous glandular tumors. The giant spleen also shrank to nearly normal size, but the final cachexia was hastened. In the case here described, of five months' standing, vigorous mercurial and arsphenamin treatment seemed to induce considerable improvement, but the fever persisted unmodified. The bunches of glands in the neck were resected. The microscope showed that the one examined was a tuberculous lymphogranuloma.

Autoserotherapy of Serum Sickness.—Pico relates that serum sickness is common in Argentina, being observed in up to 45 or 55 per cent. of the cases except when beef serum is used. With the latter it does not occur in more than 3 to 5 per cent. It seems logical to treat serum sickness by reinjecting the patient's own serum, as he explains, and his success with this encourages, he says, further application of this autoserotherapy in prevention and cure of serum sickness. No effect was apparent in six cases in which the autoserum was injected into muscle or subcutaneously, but the benefit was prompt when 1 or 2 c.c. of the own serum was injected by the vein. Two or three injections at intervals of six or eight hours generally sufficed. The pruritus, pains, etc., disappeared in a few hours in the twenty patients thus treated; the eruptions and edemas subsided even more rapidly, and the temperature dropped abruptly.

Artificial Dilatation of the Uterine Cervix.—Lanza gives twenty-three illustrations of means for opening the os uteri. Most are only of historical interest. He advocates cesarean section rather than instrumental dilatation. Bonnaire's method of bimanual dilatation seems the least harmful.

March 9, 1922, **1**, No. 10

*Chorea. G. Aráoz Alfaro.—p. 365.
Tuberculosis in Argentina. N. Lozano.—p. 370
*Some Plastic Operations on the Face. O. Ivanissevich.—p. 382.
Some Ophthalmologic Questions. R. Argañaraz.—p. 389.
Plasmogenesis. G. Renaudet.—p. 401.

Chorea.—Aráoz regards ordinary chorea as a mild encephalitis predominating in the striate body. It may be caused by various infectious agents. Small epidemic foci of what has been called electric chorea, Dubini's or Frua's chorea are undoubtedly manifestations of epidemic encephalitis. During epidemics of the latter there may be cases of grave chorea, apparently of the pure type, or mixed in with the myoclonus of the epidemic disease. Syphilis and other infections and toxins, and fright may bring on the disease in the predisposed, but they are not the main factor.

Reconstruction of the Face.—Twenty-six illustrations show the various steps and outcome in three cases in which a disfiguring scar was corrected; large flaring ears brought close to the head, or a hare-lip corrected in a young woman.

Deutsche medizinische Wochenschrift, Berlin

Feb. 23, 1922, **48**, No. 8

Simplification of My Turbidity-Flocculation Reaction. Dold.—p. 247.
Reaction of Tuberculous Organism to Inoculation of Acid-Fast Saprophytes. B. and E. Lange.—p. 248.
*New Conception of Diabetes. Arnoldi and Roubitschek.—p. 250.
A Neglected Optical Principle. E. Schlagintweit.—p. 251.
Indicator for Gastric and Intestinal Fluids. Michaelis and Müller.—p. 252.
Influence of Radiothorium on Metabolism. K. Miyadera.—p. 252.
Capillary Circulatory Phenomenon Seen in a Pregnant and in an Eclamptic Patient. Hinselmann.—p. 254.
Effect of Strychnin on the Hearing. H. Lion.—p. 255.
Anaphylactic Phenomena After Serial Injections of Horse Serum. E. Makai.—p 257
Transportable Pneumothorax Apparatus. E. Leschke.—p. 258.
Use of Boiled Water for Moist Bandages. Glass.—p. 259.
A Simple Procedure for the Disinfection of Tuberculous Sputum. Simon and Wolff.—p. 259.
Disinfection of Tuberculous Sputum. T. Messerschmidt.—p. 260.
Present Status of Rachitis. R. Fischl.—p. 261. Conc'n.
Tumors of the Female Genital Organs. W. Liepmann.—p. 262.

Conception of Diabetes as Upset in Mineral Metabolism.—On the basis of a series of experimental and clinical observations, Arnold and Roubitschek set up a theory for the origin of hyperglycemia: The normal supply of sugar in the body, after being absorbed into the blood, is stored in deposits, whence it is carried, again by way of the blood, to the point of consumption; namely, the muscles. The amount of sugar consumed or oxidized will depend mainly on the quantity of material that reaches the places of oxidation. If the quantity is small, the amount of carbohydrate oxidized cannot be great. If the sugar, for any reason, is held back—dammed up, as it were—in the blood, hyperglycemia results. In other words, the underlying conditions of sugar transportation—that is, the sugar intake and output—determine the level of the blood sugar, and, on the other hand, along with other factors, exert an extremely important influence on the amount of sugar oxidized. The disturbance of metabolism in diabetes mellitus, in accordance with this theory, is regarded as the result of a breakdown of the sugar-transporting mechanism. The tissues themselves become less permeable to sugar and the other phenomena develop as the result of this disturbance. As to the cause of the breakdown of transportation facilities, different views are held. Arnoldi opposes Schmiedeberg's conception that it is due to changes in the sugar molecule, and postulates rather modifications in the contiguous surfaces of the cellular protoplasm, which make it more difficult for the sugar molecule to enter the tissues. The modified permeability is ascribed to changes in the mutual relations of the salts—potassium, sodium and calcium, etc.—which influence the colloidochemical structure of the contiguous surfaces of the cells. The writers bring further evidence in support of their theory, and report at length the favorable effect of mineral spring waters of the Carlsbad type on diabetic patients.

March 2, 1922, **48**, No. 9

Brain Puncture and Lumbar Puncture in the Diagnosis and Prognosis of Brain Abscess. W. Rindfleisch.—p. 279.
The Ferment Producing Blood Coagulation. R. Stephan.—p. 282.
Origin of Lung Hemorrhages. L. Rickmann.—p. 284.
Necropsy Finding in Remission of Pernicious Anemia. Zadek.—p. 285.
Two Cases of Malaria-Like Fever. W. Brauns.—p. 287.
Bilateral Nontraumatic Aneurysm Between Internal Carotid Artery and Cavernous Sinus, plus Exophthalmos. Riehn.—p. 287.
Physiotherapy in Emphysema. R. Fetscher.—p. 289.
Traumatic Neuroses and Their Practical Significance. Horn.—p. 289.
Purulent Peritonitis After Tonsillitis. E. Schilling.—p. 290.
Antisyphilitic Treatment of Keratitis. Langendorff.—p. 290.
Case of Progressive Lipodystrophy. J. Schwenke.—p. 292.
Turpentine in Treatment of Abscesses of the Sweat Glands of the Axilla. J. Kuhle.—p. 293.
Clinical Aspects of Scabies in Infants. J. Heilmann.—p. 294.
Inoculation Against Rabies with Ether Treated Virus. Alivisatos.—p. 295.
Relations Between Genital and Urinary Organs. W. Liepmann.—p. 296.

Deutsche Zeitschrift für Chirurgie, Leipzig

March, 1922, **169**, No. 3-4

*Multiple Exostoses and Enchondromas. M. Mettenleiter.—p. 153.
*Tumors in Twins. H. Burkard.—p. 166.
*Cineplastic Operation Stumps. C. ten Horn.—p. 175 and p. 185.
*Therapeutic Paralysis of the Diaphragm. K. Lange.—p. 199.
*Osteochondritis Coxae Juvenilis. M. Hagenbuch.—p. 289.

Multiple Cartilaginous Exostoses and Enchondromas.—In one of the 4 cases described the multiple enchondromas developed after the age of 22. In another case the multiple exostoses involved even the bones of the face. Mettenleiter is inclined to group this anomalous bone growth with the Legg-Calvé-Perthes', Schlatter and Köhler's disease. The thickening of cartilage at one point in these latter affections is the first phase of multiple exostoses. Multiple enchondromas and Ollier's disease, on the other hand, lead up to sarcoma.

Similar Tumors in Twins.—The twin sisters of 21 developed each a fibro-adenoma in the left breast, at almost the same time, and in the same part of the breast. The structure of the tumor was alike in both, and both were removed at the same time.

Cineplastic Amputations.—Ten Horn has continued his study of the ultimate outcome after Sauerbruch's cineplastic method of restoring volitional control to amputation stumps. The sensibility and dissociation of the muscles and the stretching of the muscles forming the tunnels are discussed here.

Pathologic and Therapeutic Paralysis of the Diaphragm.—Lange adds 40 new cases to the 43 on record in which the phrenic nerve was resected in pulmonary tuberculosis. He analyzes the therapeutic factors involved, reiterating that the healthy diaphragm does not aid in expectoration; the latter proceeds better when the diaphragm is paralyzed. But the phrenicotomy is not applied as a curative measure any more, but only for diagnosis. Experience has demonstrated that with a severe tuberculous process in one lung, if the general condition improves after phrenicotomy on that side, then conditions are favorable for an extensive extrapleural thoracoplastic operation on the diseased side. In 23 dubious cases this proved a most valuable guide. The course of the cases confirmed the verdict afforded by the phrenicotomy. The latter has also proved useful in treatment of bronchiectasis, empyema, contraction of the diaphragm, uncontrollable singultus, and in one case the bilateral phrenicotomy saved the patient in severe tetanus with spasm of the respiratory muscles; artificial respiration (over-pressure) was kept up at the same time. In 2 cases the phrenicotomy was done merely to aid in resection of a cancer of the cardia or a rib, and once for cardiospasm. As a single treatment for pulmonary tuberculosis, phrenicotomy has not answered anticipations, but from the surgical standpoint its indications are growing constantly more extensive. Bibliographic references to a total of 204 titles are appended.

Osteochondritis of the Hip Joint.—In the case illustrated by Hagenbuch the hip joint disturbance was under observation almost from the first, and the development of a similar process in the second hip joint occurred under the physician's eyes, in the girl of 12½. The findings confirm that the lesion is a mild chronic osteomyelitis.

Medizinische Klinik, Berlin

March 5, 1922, **18**, No. 10

*Jaundice After Arsphenamin. G. Stümpke.—p. 295.
*Impotence in Women. W. Liepmann.—p. 299.
Beginning Squint in General Practice. Asmus.—p. 301.
Kahane's Diagnosis by Galvanopalpation. A. Laqueur.—p. 302.
Postinfluenzal Abscess in Lung. Hildebrandt and Geulen.—p. 304.
*Provocation of Malaria by Arsphenamin. H. Fernbach.—p. 306.
Determination of Plant Nutrients in Soil. Mitscherlich.—p. 308. Conc'n No. 11, p. 345.
*The Alcohol Questionnaire of the A. M. A. K. Brandenburg.—p. 311.

Jaundice After Arsphenamin.—Stümpke relates that in the last five years he has had 30 cases of jaundice and 3 very severe cases of atrophy of the liver. In one in this latter group the jaundice was well established before specific treatment had begun, but in another case it developed after a long course of arsphenamin treatment. In 8 cases the jaundice was probably due to injury of the liver from syphilis, as it developed with other manifestations of the secondary phase. In at least 5 of the 12 cases in syphilitics, the syphilis was evidently responsible for the jaundice; in 2 others mercury must be incriminated, and in 5 others the arsphenamin treatment. He advocates small, tentative, 0.15 gm. neoarsphenamin doses when a syphilitic develops jaundice. If these are well borne he keeps on with this treatment for two or three weeks and then doubles the dose. If the jaundice becomes aggravated or the general condition grows worse, he interrupts the treatment at once. He does not resume it till the last trace of the jaundice has disappeared as in these cases the syphilis cannot be held responsible for it.

Impotence in Women.—Liepmann discusses and replies to a recent work with this title by K. Friedländer. The latter classifies impotence in male and female as genital, germinal, spinal and cerebral. The inhibitions in women from various causes cooperate with the sexual differences to induce feminine impotence. Psychotherapy, rather than organotherapy, is what is required. He warns expressly against roentgen exposures aiming to stimulate function. Friedländer exclaims that he is unable to understand why Nature gave the one sex a so much stronger sexual impulse than the other, judged from Nature's aim to insure the reproduction of the species. He argues further that monogamy is Nature's plan to insure the rearing of the child. Liepmann comments that the law of inhibitions in the feminine psyche is the only safeguard of monogamy (Das Hemmungsgesetz im Seelenleben der Frau ist einziger Regulator der Monogamie).

Provocation of Malaria by Arsphenamin.—In a case of severe jaundice developing after arsphenamin treatment, acute yellow atrophy had been diagnosed but necropsy explained the clinical picture as the flaring up of tropical malaria under the influence of the arsenicals. The robust young man had never left Berlin, and there was no history of malaria, but the parents said that their son had occasionally complained of late of chills, exhaustion and somnolency. The tropical malaria parasite was found in the blood just before death. The two other known cases of provocation of tropical malaria by arsenical treatment proved promptly fatal, while in the provocative tertian and quartan cases the outcome was favorable. With early jaundice in arsenical treatment, search should always be made for malaria.

The Alcohol Questionnaire.—Brandenburg describes the data accumulated by the questionnaire of the American Medical Association, saying in conclusion, "To observe and learn from the working out of prohibition in the United States is of the highest interest for science and the general welfare. Reduction in the consumption of liquor benefits the public health—there can be no question about this. But time and experience will show whether this aim could not be reached in some other way than by strict prohibition."

Zeitschrift für Kinderheilkunde, Berlin

March 15, 1922, **32**: No. 1-2

*Outdoor Treatment of Influenza in Children. G. Rothgiesser.—p. 1.
*Tuberculosis in Children. R. Zimmermann.—p. 15.
*Active Immunization of Infants. C. Frankenstein.—p. 25.
Rumination in Infants. J. Bernheim-Karrer.—p. 34.
*Eruption with Endocarditis. H. Lehndorff and C. Leiner.—p. 46.
Tests of Backward Children. Lazar and Tremel.—p. 54.
Action of Calcium on Spasmophilia. A. Wetzel.—p. 105.
Hereditary Defect in Ossification of Top of Skull. Neurath.—p. 121.

Outdoor Treatment of Influenza.—Rothgiesser states that at the large institution for children with chronic diseases at Berlin, keeping the children systematically out of doors at all seasons, except when it rains, has reduced the number of catarrhal colds, influenza and other infections from 0.58 per child in the first month of the stay to 0.08 by the twelfth month. She gives a number of charts showing how the rachitic, in particular, escaped catarrhal "colds" completely but how the tendency returned when for any reason they had to be kept indoors for a couple of weeks before they had outgrown the catarrhal tendency completely.

Tuberculosis in Children.—Zimmermann found all the tuberculin tests negative in 108 of 582 children (18 per cent.) although in some of them tuberculosis was beyond question. Among 753 children examined he found persistent dulness at the right apex in 67 and at the left apex in 21, but even with these findings he is inclined to agree with Grosser that in 99 per cent. of cases of apical disease in children, "the findings are not the product of tuberculosis but of subjective percussion and auscultation." Even when the child is actually infected with tuberculosis, the latter is not necessarily responsible for everything going on in the lungs. He found the d'Espine sign in 20 per cent.; uneven pupils in 7 per cent., and a visible network of veins over the hilus in 6 per cent., and the first two of these signs were combined in 1.5 per cent. of 472 children, and in 1 per cent. the first plus the third; all three were associated in 0.5 per cent. A primary focus was evident in about 6 per cent. of all the hundreds of children with mild tuberculous infection examined. In only 33 per cent. of the cases could the tuberculous nature of changes in the hilus be demonstrated, but even with scarcely recognizable tuberculous changes in the hilus, the cervical glands were tuberculous. The incurable cases of course are recruited from the mild cases, but conquering the mild infection seems to afford a protection for later in life. The article issues from a Hamburg sanatorium.

Active Immunization of Infants.—Frankenstein argues that infants are not capable of forming antibodies, so that vaccine therapy in them amounts to nothing more than parenteral protein body therapy. Experiences in this line with antibacterial vaccines seem to conflict with the success of antismallpox vaccination of infants, but his tests have confirmed that no or only traces of antibodies are found in the infants' serum even after successful vaccination. The immunization against variola, he shows, is a histogenous immunity, not a serum immunity. Even the youngest infants are capable of this histogenous reaction.

Annular Erythema.—Lehndorff and Leiner state that their experience has confirmed that the eruption of which they give a colored illustration is pathognomonic for endocarditis. The multiple faint rings on the red background, and their coming and going resemble the eruption with what is called fifth disease. The have encountered it with chorea and acute articular rheumatism — all rheumatismal equivalents — but never with endocarditis or joint affections complicating any other infectious disease. This eruption comes and goes without causing the slightest disturbance, and even without attracting attention as a rule. It is usually restricted to the trunk but may appear occasionally on the limbs; the face and mucosa always escape.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 25, 1922, **1**, No. 8

*Endocrine Pathology. J. Lobstein.—p. 738.
*Thrombosis of Portal Vein. J. J. Halbertsma.—p. 751.
Influenza. H. A. Molema.—p. 760.
*Lung Calculus. H. Burger.—p. 764.
*Alimentary Edema. A. Willemse.—p. 768.

Endocrine Pathology.—Lobstein describes a case of dystrophia adiposogenitalis which developed along with a psychosis that presented the clinical picture of dementia praecox. The woman—now 48—was 31 at the time, and had borne four viable children. He debates whether there is any connection between the psychosis and the diabetes insipidus and the adiposis, being inclined to accept some endocrine disturbance as a factor in dementia praecox. He describes further a man of 44 with eunuchoid giant growth and the mentality of a child of 10.

Thrombosis of the Portal Vein.—Pains in the region of the spleen were the first symptoms in the previously supposedly healthy young woman. The pains in the left side had been growing progressively worse during the three weeks, with slight evening temperature, urobilinuria, 8,000,000 erythrocytes and 31,800 leukocytes. The pains grew more and more violent, with bloody diarrhea, and the presumptive diagnosis of thrombosis of the splenic and portal vein was soon confirmed by necropsy. There was nothing to suggest erythremia or other general disease to explain the thrombosis, and a primary endophlebitis in the portal vein seems more plausible. This is sustained by a sclerotic process found in the left lung. There was nothing to suggest syphilis otherwise. Halbertsma regards the polycythemia as secondary to the thrombosis in the splenic vein, which was secondary to the thrombosis in the portal vein. The acute course prevented the development of collaterals. Consecutive thrombosis of the mesenteric veins was the direct cause of death.

Removal of Calculus in the Lung. — Burger's case is remarkable in that the calculus made its way through the wall into a large bronchus, and then was removed with the bronchoscope. The patient was a woman of 43; at the first bronchoscopy the wall of the bronchus was seen bulging inward. Examined anew, the calculus was visible, and was extracted with forceps. Later inspection showed the bronchus wall healed. Lung calculi represent calcification of a scrap of necrotic lung tissue, as a rule. Mann published in 1914 ten cases in children and five in adults in which a tuberculous cheesy focus or gland-sequester in the lung had broken through into a bronchus and was coughed up or removed.

Alimentary Edema in Infant.—On account of a transient dysenteriform enteritis, an infant a year and a half old had been kept for two weeks on rice water with a very little milk. During the last few days of the two weeks it presented the clinical picture of acute nephritis with intense dropsy, but Willemse ascribed it to the undernourishment, and the prompt subsidence of the edema and other symptoms as soon as the child was fed properly confirmed this assumption.

March 4, 1922, **1**, No. 9

*Treatment of Detachment of the Retina. E. Marx.—p. 834.
Diphtheria: Diagnosis and Prophylaxis. Schaeffer.—p. 841.
*Coagulation of Blood in the Chest. M. A. van Herwerden.—p. 847.
Consumptives in the Hospitals. J. L. C. Wortman.—p. 849.
*Hendrick Van Roonhuyse, 1622-1672. E. D. Baumann.—p. 856.

Salt-Free Diet in Treatment of Detachment of the Retina.—Marx urges the necessity for trying every adjuvant means in treatment of detachment of the retina. He cites authorities to show that the ciliary body has a secreting function. When there is no intake of salt, the excess of fluid is cast off by the kidneys and the other secreting organs, among them the ciliary body. This forces more fluid into the vitreous body, increasing its bulk and weight, and thus tending to force the retina back into place. At the same time, the salt-free diet is hastening the casting off of the fluid back of the retina so there is no fluid to interfere with its attachment as it is restored to place. The intra-ocular pressure rises on a salt-poor diet. Hertel found that the pressure in the rabbit eye regularly subsided when a hypertonic saline was infused, and increased when a hypotonic saline was infused. The salt-poor diet thus acts on detachment of the retina from two points of vantage. Marx is now examining the tension of the eyes in patients with heart or kidney disease on a salt-poor diet. He has been applying the salt-free diet in the last eleven years, in ten retina cases. The detachment was not recent in any case, and three were cured; one was of traumatic origin, one spontaneous, and one after chorioiditis. The cure was slow and gradual in this group, and no other measures were applied. He does not include in the cured cases slight subjective or objective improvement. The tension improved in some without any change for the better in the visual acuity. With kidney disease and retention of sodium chlorid, inducing a tendency to edema in various tissues, conditions favor detachment of the retina, especially as at the same time the intra-ocular tension is reduced.

Coagulation of Extravasated Blood in the Chest. — Van Herwerden's statement that extravasated blood that has been in contact with the pleura does not coagulate, has already been mentioned in these columns. His further experimental research has shown that this occurs even when the heart and lungs are still. The fibrinogen seems to have been transformed to fibrin. But coagulation occurs on addition of an equal volume of oxalated blood from a horse; this demonstrates the presence of thrombin.

A Seventeenth Century Physician.—Baumann quotes freely from van Roonhuyse's works, some of which were translated into German and English. This year is the tercentennial of his birth. He described operations for hare-lip, hernia, atresia ani, etc., but he was known best for his obstetrical and gynecologic operations.

Svenska Läkaresällskapets Handlingar, Stockholm

March 31, 1922, **48**, No. 1

*Exophthalmic Goiter. A. Troell.—p. 1.
*The Bacteriophagum. H. Bergstrand.—p. 24.
Tumor of Lower Jaw. R. Roman.—p. 38.

Exophthalmic Goiter. — Troell tabulates the findings in sixty-two operative cases of exophthalmic goiter in regard to age, duration and intensity of the disease, the blood picture and blood pressure, the suspension stability, tolerance for carbohydrates, consumption of oxygen, and the reaction to epinephrin, pilocarpin or pituitary extract acting on the involuntary nervous system. In the acute cases the goiter was generally diffuse; in the cases with milder thyroid intoxication, the goiter was adenomatous, and these patients averaged ten years older than in the first group. The blood pressure was within normal range, as also the tolerance for carbohydrates, while in the diffuse group the blood pressure was high and tolerance for carbohydrates reduced. This classification seems more plausible than to distinguish a vagotonic and a sympatheticotonic group, as the reactions to epinephrin and pilocarpin were conflicting. Both these nervous systems seem to blend in the clinical picture of exophthalmic goiter. The graver cases from the operative point of view were in the diffuse goiter class, the blood pressure high, the age younger. His research confirms further that perverted functioning of the thyroid is a factor, as well as excessive functioning.

The d'Herelle Phenomenon.—Bergstrand gives some colored plates showing the Twort-d'Herelle phenomenon, and the new characteristics acquired by staphylococci after having resisted the action of the d'Herelle bacteriophagum. He says that this bacteriophagia has upset much of what was regarded as established in bacteriology, as to heredity and variation.

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SOME GYNECOLOGIC MISDEMEANORS *

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I have concluded to comment briefly on some of the evils of present-day gynecology and abdominal surgery, and have taken as my title "Some Gynecologic Misdemeanors." It is far from my intention to give the impression that my criticisms apply to the profession as a whole. There is no finer class of men, or men more conscientious, devoted and skilful, than the medical profession of America.

LOCAL TREATMENTS OF THE VIRGIN

Let me first limit this point by stating that I do not intend to include necessary pelvic examinations; but even such an examination is frequently better done under an anesthetic, and with permission and in readiness to correct whatever abnormality may be found.

I can conceive of no condition in the virgin, an accidental gonorrheal infection alone excepted, that may be benefited by long continued tampon treatment. Yet we all frequently see patients of this kind who have been the victim of such procedures. It is usually done for the relief of a dysmenorrhea which is obstructive in type and cannot be influenced in any permanent way by such treatment.

Again, one wonders at the persistence which enables a physician to dilate sufficiently the vaginal orifice to permit him to introduce a large pessary. It would seem that almost any form of vaginal treatment that must be regularly repeated is, in this class of patients, contraindicated. It not only does not cure the condition, but too frequently is the exciting factor in developing a neurosis.

ILL CONSIDERED AND UNNECESSARY OPERATIONS

The comparative safety with which the abdomen can be opened leads, unless the surgeon is constantly on his guard, to a tendency to inaccurate or careless diagnosis. No elective operation should be undertaken until all possible means have been used to establish an exact diagnosis. We are all liable to make mistakes, but the surgeon who studies his cases carefully before operating will be able to reduce the percentage of errors to the minimum.

There are a few such mistakes that are so frequently made that they seem to merit special mention. The removal of the appendix for a supposed chronic appendicitis when the source of the trouble is in the ureter, colon, gallbladder or pelvic organs is entirely too frequent. It is a notorious fact that the ultimate result of the operation for chronic appendicitis, so far as relief from symptoms is concerned, is among the poorest in surgery, owing almost entirely to faulty diagnosis.

The idea that a "displacement of the womb" is an exceedingly serious condition and may cause symptoms of any kind seems to be firmly established in the minds of the people at large. Almost any woman who is not in good health from any cause can be persuaded to submit to operation when such a diagnosis is made. The fact that her displacement is developmental in origin, and has been present for many years without causing any symptoms, is lost sight of, and she is rushed to the hospital and operated on. Too often she is not relieved of her backache until she is fitted with proper support for her sacro-iliac joints; or of her headache until fitted with glasses, or even of her constipation until her diet is corrected. These things could be done before resorting to operation just as well as after it, and the patient saved the danger, suffering and expense of a needless laparotomy. It would seem that at times the benefit derived from this operation is largely due to the enforced rest incident thereto.

The time for safe operation on pelvic inflammatory disease that is of tubal origin has been thoroughly established, especially by the work of Dr. F. F. Simpson, a former chairman of this section, and my former chief, to whom I shall always be greatly indebted. Yet one is called frequently to reoperate on a patient, whose history and the condition of the abdomen when reopened both demonstrate conclusively that she was operated on during or too soon after an acute attack of salpingitis. One will occasionally in these cases be forced to a more radical operation after a conservative one; but if one is careful to see that one does not open the abdomen until the acute inflammation has completely subsided, second operations will be rare, the postoperative complications few, and the mortality low.

SURGERY BY THE INCOMPETENT

Any surgical operation may be likened to a two edged sword. It is undertaken in order to remove from the patient some diseased part that will, if left alone, terminate life, or to correct some abnormality that is causing more or less suffering. But suppose that, in an effort to relieve one set of symptoms, another set, even more distressing, is substituted. The patient has certainly made a bad trade. One cannot but be impressed by the number of patients who have had two, three or more operations, and in whom the last state is worse than the first. Any surgeon may, and all will at times, have a bad result. Yet by thorough training and by exercising constant care, the competent surgeon is able to reduce his bad results to a minimum, and this present minimum will be continually decreasing as surgical knowledge and individual skill increase. But what kind of result can be hoped for when the operator is without proper training and his facilities meager or entirely inadequate? This must result in both a high primary mortality and a high postoperative morbidity.

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* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

The inferior work is not all done in the small hospital in the smaller communities. Some of the large hospitals in our large cities seem to be only boarding houses for the sick. Any person with an M.D. degree is at liberty to do any operation that he may see fit to undertake. In the smaller communities there is too frequently an effort made to secure the support of the local physicians by placing them all on the staff of the hospital, irrespective of ability or training. I know of one town in which every physician was on the staff of the hospital in a rotating service. Each man was the surgeon for six weeks once in two years, and also in charge of the medical service for another six weeks once in two years. The result could not help being an inferior output.

CORRECTION OF EVILS

What can the organized profession do to correct these evils? For the correction must come from within. The present laws governing medical practice have been a hindrance only to the physician who tries to do legitimate work. The irregular knows that the chance of punishment is so slight that he pays no attention to the law.

1. I would suggest a more careful selection of medical students. While this should not be based entirely on preliminary education, usually the man or woman with a good preliminary education is more likely to appreciate the necessity of a thorough medical training. Character and right thinking are of equal importance.

2. The students should have more systematic instruction in the history of medicine, so that they will have the inspiration to be derived from a knowledge of the achievements of the past and in that way obtain an inspiration for their own work. During the student's medical course he is too much inclined to regard medicine as a finished subject instead of one that is constantly progressing. As soon as he has obtained his degree, he feels that the whole subject of medicine has been mastered and that he is perfectly competent to care for any patient that consults him.

3. Sufficient and efficient postgraduate schools should be established where the ambitious may be trained. Frequently the interns on leaving the hospital have discussed this point. Until recent years the only method of obtaining proper training was to secure a position as an assistant; and fortunate was the man who could get such a place. This situation has been greatly improved by the Mayo Foundation and the postgraduate department of the University of Pennsylvania and by special hospitals that give opportunities in their particular line. The need, however, is still great.

4. The public should be educated as to the necessity of obtaining competent surgical advice. The work being done by the American College of Surgeons in this line is most commendable, but only a beginning has been made.

5. The boards of trustees of our hospitals should be educated to a realization of the fact that the care of the sick is best done in an institution in which some research work is being carried out. Proper facilities must be provided for work of this kind. The trustees at times do not seem to appreciate the fact that professional fitness should be the ultimate test for appointment to the medical staff. If the work done in the hospital is better than the average, there will be no lack of patients.

CONCLUSION

In medicine, as in other lines of endeavor, we cannot stand still. If we do not go forward, we are sure to retrograde. The stimulus of some form of investigation is necessary to offset the drudgery of the routine work.

The members of the staff have a function other than the care of the sick. They should take sufficient time to review the work of the department with the younger men at regular intervals and to suggest, encourage and supervise some line of investigation. In this way only will progress be made and enthusiasm maintained.

Finally, do not let me give you the impression that I believe that the misdemeanors mentioned are the rule. I sincerely believe that the great bulk of American surgery is done in an efficient, skilful and proper manner, and that the average American surgeon is a thoroughly trained, conscientious and able exponent of the science and art of surgery, and ranks as the equal if not the peer of the surgeon of any other country.

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THE RELATION OF DIET TO PELLAGRA *

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It is proposed in the present communication to review the more outstanding, significant evidence bearing on the relation of diet to pellagra, including the essential dietary factor on which the relationship found to exist probably primarily depends.

It will be convenient to study this relation by considering the part diet plays in treatment, in prevention and in causation.

DIET IN TREATMENT

Opinions of authorities with respect to the place of diet in the treatment of pellagra have differed considerably. More than half a century ago, Roussel,[1] on the basis of his own observations and the experience of others, assigned to diet, and particularly to a milk diet, the place of first importance. This high position it seems subsequently not to have been able to hold, in large measure, at least, by reason of the dominating influence of Lombroso's teaching.

Lombroso [2] recognized that a liberal diet, particularly one of meat, was valuable in pellagra; but, having arrived at the conviction that pellagra was due not to insufficient alimentation but to an intoxication, he labored to find a pharmacologic antidote, and thought that he had succeded in finding such in arsenic. His views having been accepted by the foremost Roumanian clinicians, arsenic, particularly liquor potassii arsenitis (Fowler's solution), enjoyed a high repute among European observers.

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*Read before the Congress of American Physicians and Surgeons, Washington, D. C., May 3, 1922.

[1] Roussel: Traité de la pellagre et des pseudo-pellagres, Paris, 1866.

[2] Lombroso: Die Lehre von der Pellagra, Berlin, 1898, pp. 166-167.

When Americans came to deal with this problem, their experience proved to be disappointing, so that a search for a better remedy was taken up by them; and soon, in rapid succession, a number were suggested and earnestly advocated. At the same time, not much attention was paid to diet, which, with rare exceptions, received at most only incidental mention, being considered on a par with baths, change of climate, etc., attention being especially focused on one favorite remedy or another as the prime element in the "treatment" advocated. So much did this come to be the case, that when in 1914 diet was urged by us[3] as the rational treatment and it was pointed out that there was no medicine known that had any proved specific value, the suggestion was received as decidedly heterodox and, in some quarters, with vigorous dissent.

The results of a number of studies,[4] including observations of our own, made since then, all go to show that in uncomplicated cases of average severity the administration of a diet rich in animal protein foods (milk and meat) is quite regularly followed by clinical improvement, which begins to be manifest in from about ten days to two weeks. With only rare exceptions, provided the patient cooperates fully in taking the diet, the improvement thus begun continues progressively to eventual, complete, clinical recovery. Should the cooperation be unsatisfactory or the diet inadequate, either because suitable additions to the prepellagrous diet have not been made, or because they have not been made in sufficient quantities for the needs of the individual, a very different picture results. In these circumstances the manifestations either remain stationary, the symptoms continuing without significant change, or they develop further and with increasing severity. But even in such more advanced cases, a favorable change in food intake may be followed by improvement and recovery. Should such change, however, not soon be effected, the further progress and outcome of the case are of the gravest character.

The foregoing would seem very clearly to indicate that diet operates as a dominating factor in controlling the clinical course and outcome of the attack. But in order justly to appraise the importance of this apparently dominant influence of diet, it will be necessary to consider, even though briefly, whether and how there can be harmonized with it certain seemingly discordant observations, namely, (1) the failure of diet in certain cases to control the course and outcome of the disease; (2) the clinical improvement following correction of a concomitant disease or condition of an exhausting character without change in diet, and (3) the normal progress of the attack toward recovery without regard to treatment.

With respect to the failure of diet in certain cases of pellagra, it should first of all be made clear that this means simply that the progress of some cases is unfavorable and that the patients die in the attack in spite, seemingly, of the most careful feeding. In our experience the number of the cases that properly fall into this class has been relatively very small, and almost invariably these were manifestly very severe, frequently neglected cases when they first came under observation. That some such patients should die would seem to be no more than may reasonably be expected, particularly when it is recalled that a certain mortality occurs in human beriberi under analogous conditions.[5]

It has been repeatedly observed that the elimination of a concomitant disease or condition of an exhausting nature, such, for instance, as hookworm infestation or physical strain, may be followed by clinical improvement without any change in diet. In considering this interesting phenomenon, it is to be remembered that the adequacy of a diet is not necessarily an absolute quality, but one that may depend on a number of variables, some of which are connected with the individual himself. Thus, a diet that falls short of supplying the needs of the individual who is suffering from a drain, such as that imposed by infestation with the hookworm, the blood fluke or the dysenteric ameba, may adequately supply the needs of the individual not so taxed; or again, a diet that is insufficient for the woman who is up and about attending to her housework may fully supply her physiologic requirements after she takes to her bed. The explanation that suggests itself, therefore, is that the elimination of an exhausting disease or condition, by making available nutrients that previously, in one way or another, were diverted from or lost to the body, or by reducing the physiologic requirements connected with lessened energy needs, raises the relative nutritive value of the diet without any actual change therein being made.

It is an interesting and a very striking epidemiologic fact that, in general, in an endemic locality, cases of the disease begin to appear in March or April, become increasingly numerous during May, reach a peak in June, and then rapidly fade and disappear so that few are recognizable in September and, perhaps, not a single one may be discoverable in October where dozens may have been seen in June. Now, while some of the more severely ill of these patients may have sought and received professional advice and treatment most, if not all, of the other cases ran their course not only without any treatment, but many without the existence of an abnormal condition being recognized by the patient or the patient's family. Here, then, we seem to have an indication of the natural, undisturbed course of an attack; does not this suggest that its normal progress is toward recovery independent of diet, and for that matter, of other treatment?

So far as independence of any medicinal treatment is concerned, it seems clear that this question may be answered definitely in the affirmative. As it applies to diet, however, it is necessary first to determine whether the implied assumption that no dietary modification was made by the individuals who neither sought nor received treatment and, particularly, by those in whom the existence of the disease was not even suspected, is warranted.

That this assumption is not warranted quickly appears when it is recalled that the availability of supply of certain classes of foods, even for those living in places large enough to enjoy the benefits of cold storage, varies in some degree from season to season, and that in smaller or rural localities, depending very largely or entirely on local production for a supply of certain (perishable) foods, the variation in seasonal availability of these is even more marked. That such variations in availability tend to influence the diet of the household, and thus of the individual, every thoughtful person will recognize from his own experience. It follows, therefore, that in seeking to explain the seasonal incidence of the disease and the course normally pursued by an attack, account must be taken of the seasonal variation in food supply as, at least, a possible factor.

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[3] Goldberger, Waring and Willets: Pub. Health Rep. **29**: 2821-2825 (Oct. 23) 1914.

[4] Willets: South. M. J. **8**: 1044, 1915. Ridlon, J. R.: Pub. Health Rep. **13**: 1979 (July 28) 1916. Voegtlin, Carl: Ibid. **35**: 1435-1452 (June 18) 1920. Bigland, A. D.: Lancet **1**: 947 (May 1) 1920. Goldberger and Tanner: Unpublished data. Hammond-Searle and Stevenson: Report of Investigations of Pellagra Among Turkish Prisoners of War in Egypt, 1920.

[5] Vedder, E. B.: Pellagra, Arch. Int. Med. **18**: 146 (Aug.) 1916.

It thus appears that none of these seemingly discordant observations is inconsistent with the indication that diet operates as a dominating factor in controlling the clinical course of the attack.

DIET IN PREVENTION

In the past, pellagra has almost invariably been regarded as a chronic disease with a course marked by more or less regular, annually recurring attacks extending over an indefinite number of years.

There are not lacking in the older literature observations which suggest that this conception might not be sound. Thus, Cerri,[6] in 1795, in an investigation of the cause of pellagra, is said to have fed ten well marked pellagrins with "good food," in part of animal origin, and with "good bread" instead of the corn bread and polenta with which they had previously nourished themselves, and to have observed that their condition rapidly improved and that in the following year neither the eruption nor other manifestations made their appearance. A number of somewhat similar individual observations were made by Strambio,[7] who interpreted them simply as showing that a better diet masked the disease. Strambio's idea may be said to be summed up in the sinister aphorism that "once a pellagrin, always a pellagrin." This seems to have profoundly influenced medical opinion practically to the present day.

Such, at all events, was authoritative opinion in 1915, when Goldberger, Waring and Willets [8] reported that, following modifications in the diet of the inmates of two orphanages which for several years had been endemic foci of pellagra, only one recurrence was observed among an aggregate of 172 pellagrous children who had been under observation until at least the anniversary date of the previous attack, and not a single case among an aggregate of 168 nonpellagrin residents, all of whom had been under observation at least one year and, further, that following modifications in the diet of two groups of pellagrous insane of the Georgia State Sanitarium, also an endemic focus of long standing, not one of the 72 patients constituting these two groups developed any evidence of a return of the disease. They concluded that pellagra may be prevented by an appropriate diet without other alteration in hygiene or environment (including water supply).

These findings have since been confirmed by other workers. White,[9] studying an outbreak of pellagra among Armenian refugees at Port Said in 1916-1917, concludes, among other things, that "pellagra was eradicated from the (refugee) camp by correcting the faulty dietary, all other conditions remaining the same." Similarly, Stannus [10] reports that, following improvement in the dietary, pellagra disappeared from among the inmates of Central Prison, Nyasaland, where, "excepting the change in diet, all other conditions remained the same." And Wheeler,[11] working at Spartanburg, S. C., found that "one supplemental meal of fresh meat, milk, vegetables, fruit, bread (either wheat bread or corn bread, and butter was adequate to relieve the symptoms and to prevent recurrence in cases of pellagra of moderate severity in patients continuing in the environment in which the disease had originally developed or had previously recurred."

It may be added that the results of the further studies (unpublished) of prevention carried on by the workers of the Public Health Service during a considerable additional period and extended to include a larger number of pellagrous insane and a third orphanage in which the disease had prevailed extensively, are in harmony with, and fully confirm, the results of the first year's study reported on in 1915. Without exception, following changes in diet, other conditions remaining the same, including the admission of fresh cases from without, both recurrences and new cases ceased to develop. One would seem warranted in concluding, therefore, not only that diet controls the course of the immediate attack, but also that the clinical recovery thus brought about continues and no new cases develop so long as **a** proper diet is maintained.

Before this conclusion can be accepted as valid, however, it will be necessary to determine the significance of certain observations which seem, in a measure at least, to negative such a conclusion. These observations deal with cases which, in a general way, fall into one of three categories.

Embraced in the first of these categories are those relatively very rare cases occurring in well-to-do persons. Here the favorable economic status is assumed to indicate not only that a "good" diet was available but also that it was consumed and, therefore, it is reasoned, pellagra occurred in spite of a "good" diet. While, under the circumstances, the assumption that a "good" diet was available is, in general, a reasonable one, it does not follow; and, since it is the crucial point, it clearly is not permissible to assume that the diet actually consumed was "good" and adequate for the needs of the particular individual concerned. Quite aside from the serious difficulty (if not impossibility) of deciding in a particular instance, on a mere qualitative statement, whether the available ration is actually adequate, such an assumption ignores individual likes and dislikes with respect to certain foods or dishes which may operate markedly to modify the make-up of the individual diet.[12]

In the second category are the cases in individuals who are alleged to have consumed a "good" diet, either because a statement of the diet of the household of which the individual was a member was interpreted by the observer as adequate, or because the official ration of the dietary group (institution or camp) to which the individual belonged was believed to be satisfactory. Evidently here, too, the possibility of individual eccentricity of taste operating as a factor determining the make-up of the diet consumed is ignored. Nor is the vitally important possibility of error in the statement of the composition of the household diet or of a wide divergence between the official ration table and the ration as it reaches the individual sufficiently considered.

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[6] Cerri: Cited by Roussel (Footnote 1), p. 466.

[7] Strambio: Cited by Sambon, L. W.: Progress Report on the Investigation of Pellagra, J. Trop. Med. & Hyg., 1910.

[8] Goldberger, Waring and Willets: Pub. Health Rep. **30:** 3117-3131 (Oct. 22) 1915.

[9] White: Report on an Outbreak of Pellagra Amongst Armenian Refugees at Port Said. 1916-1917, Cairo, Egypt, 1919.

[10] Stannus: Tr. Roy. Soc. Trop. Med. & Hyg., 1920, p. 16.

[11] Wheeler, G. A.: Treatment and Prevention of Pellagra by a Daily Supplemental Meal, J. A. M. A. **78:** 957 (April 1) 1922.

[12] Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: Pub. Health Rep. **35:** 2709 (Nov. 12) 1920. Roberts, S. R.: Types and Treatment of Pellagra, J. A. M. A. **75:** 21 (July 3) 1920. Tanner, W. F., and Echols, G. L.: The Occurrence of Pellagra in Patients Apparently Receiving an Ample Diet, ibid. **76:** 1337 (May 14) 1921.

An interesting and instructive illustration of the serious error to which failure properly to consider and exclude such possibilities may lead and the perplexity to which it may give rise is to be found in Enright's[13] report of an outbreak of pellagra among some German prisoners of war in Egypt. After presenting the details of the outbreak, Enright concludes, in part:

> A critical analysis of the diet which these German pellagrins ate before capture and during their period of captivity prior to the onset of the eruption is sufficient to explode the food-deficiency theory as a predisposing factor. These diets were ample, both in quantity and quality, for any possible requirements, and were of such varied composition that it is perplexing to understand how they could be improved.

So far as I am aware, this report, by reason of the presentation of details that are almost invariably lacking in reports of individual cases, is among the most impressive instances in the literature of the apparent failure of diet to prevent pellagra. Yet the discussion[14] evoked by it, and the independent official investigation by Hammond-Searle and Stevenson,[4] developed facts which show that Enright's conclusion was not well founded, evidence being adduced which indicates that the diet actually consumed by some of the prisoners was not of the high quality (absolutely or relatively) that Enright had believed himself justified in assuming it to be.

We come, finally, to the cases of the third category, namely, those extremely rare and very interesting ones occurring in breast-fed infants. Here the explanation sought is why the breast milk, forming as it did a very large part if not the whole of the diet, failed to prevent the development of the disease. Voegtlin and Harris[15] have suggested the possibility that the mother's milk in such cases is deficient in vitamins and that this deficiency, may be the responsible factor. Although more recent observations indicate, as will presently be seen, that the known vitamins are not essential pellagra-preventive elements, it is not absolutely excluded, though (in the present state of knowledge) highly improbable, that some as yet unknown dietary factor, conceivably a vitamin, plays this rôle. In the light of present knowledge it seems more probable that these very exceptional cases develop primarily because of a defect in the protein (amino-acid) factor arising possibly from (*a*) too low a plane of intake of the milk proteins resulting from a scanty supply of the breast milk; (*b*) a defective utilization of the protein ingested, or (*c*) from some combination of these. In this connection mention may also be made, as a very remote possibility, that in these rare instances the protein mixture of the mother's milk may itself be faulty. Thus, none of the observations of the categories considered can be accepted as negativing the conclusion that neither recurrent nor new cases of pellagra develop so long as a diet adequate for the needs of the individual is maintained.

At this juncture, the question may be asked whether the disease can be prevented otherwise than by diet. The claim has been made (and by Sambon[15] disputed) that a considerable reduction in prevalence has resulted in Italy from the prophylactic measures based on the spoiled corn theory. Since these measures concern themselves fundamentally with diet, this calls for no discussion in the present connection. Nor, for obvious reasons, need we be detained by the suggestion based on the water theory of Alessandrini and Scala.[16]

Other than these there is but one claim of sufficient importance to warrant any consideration at this time. This is that pellagra may be prevented by improved sanitation, particularly with respect to the disposal of human wastes. The fact that the disease is frequently associated with bad sanitary conditions and, more particularly, the report[17] of an apparently successful experiment to control the spread of the disease at Spartan Mills, S. C., by replacing an insanitary system of surface privies with a water-carriage system of sewage disposal, would seem to support this view.

With respect to the association of the disease with bad sanitary conditions, we have in our own studies failed to find a consistent correlation between them; our results indicate that the observed association may be explained as an expression of the well recognized relation of the disease to the condition of poverty. As for the Spartan Mills experiment, we[18] have elsewhere reported that our observations in the same locality in 1917 and 1918 (three years after the experiment was begun) showed the disease to be at least as prevalent in this village with its excellent sewerage system as in some other nearby villages with but the crudest, most insanitary methods of sewage disposal, thus clearly proving the failure of an excellent water-carriage sewerage system perceptibly to control the prevalence of the disease. In this connection it may be remarked that, while additional evidence of the failure of improved sanitary conditions perceptibly to control the occurrence of the disease could be cited, we know of not a single instance of a reduction in pellagra incidence that can properly be credited to the influence of improved sanitation.

Thus, in the light of the foregoing discussion the conclusion would seem justified that pellagra may be completely prevented by diet without the intervention of any other factor, hygienic or environmental.

DIET IN CAUSATION

The idea that diet had a relation to the production of pellagra has, in one form or another, been held by the vast majority of the students of the disease, beginning with Casal himself. The evidence from time to time adduced in support of the shifting theories of this relationship was all of it indirect until 1915. In that year, Goldberger and Wheeler[18] reported the experimental production of pellagra in the human subject as the result of feeding with a diet resembling that which in previous observations they had found to be associated with a high incidence of the disease. The subjects were all healthy, white adult male convicts who volunteered for the experiment: the controls were the other residents of the penitentiary, 120 in all, of whom forty-seven were under observation throughout the experimental period. While all of the controls remained free of any recognizable evidence of the disease, not less than six of the volunteers developed manifestations recognized by experienced consultants as those of pellagra.

In marked contrast with the outcome of this feeding experiment are the results of the attempts made by a number of observers to communicate the disease from the sick to the well by the inoculation of blood, bodily discharges and the like. These attempts have in all reported instances failed;[19] nor is there any other evidence of an unequivocal character in support of the idea that the disease may be induced by any means other than diet. It appears, therefore, that in causation, just as in treatment and prevention, the evidence points to diet as the controlling factor.

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[13] Enright, J. I.: Lancet **1**: 998 (May 8) 1920.
[14] Lancet **2**, 1920.
[15] Voegtlin and Harris, Bull. 116, Hyg. Lab., U. S. P. H. S., 1921.
[16] Alessandrini and Scala: Contributo nuovo alla etiologia e patogenesi della pellagra, Roma, 1914.
[17] Siler, J. F.; Garrison, P. E., and MacNeal, W. J.: Pellagra and Sewage Disposal, Arch. Int. Med. **19**: 683-694 (May) 1917.
[18] Goldberger and Wheeler: Bull. 120, Hyg. Lab., U. S. P. H. S., 1920.

ESSENTIAL CONTROLLING DIETARY FACTOR

The question now naturally arises as to what the essential dietary factor or factors are to which diet owes its power. Several important contributions bearing on this question have been made. The older (Marzari, Lusana and Frua, Calmarza), while in many instances interesting and suggestive, are, as might be expected, unconvincing and must be passed over; of the more recent, only those most pertinent can be considered.

In 1912, Funk provisionally included pellagra in a group of "deficiency diseases," all of which, he stated, could be prevented and cured by the addition to the diet of certain preventive substances called by him vitamins. More recently, Wilson,[20] studying diets known to have been connected with pellagra and comparing them with those of known value in curing and preventing the disease, has been led to conclude that the etiologic factor is a deficiency of protein, best determined by estimating its biologic value by means of Thomas' ratings.

Wilson's main conclusion is in agreement with the indications afforded by the results of our own studies [21] of the last four or five years. Of particular interest in the present connection is our [22] recent observation of the failure of what seemed to be a liberal intake of minerals and known vitamins (including the antirachetic factor) to prevent the recurrence of pellagra in five persons, thus definitely excluding these elements as essential factors in relation to the disease. This observation suggests that, of the dietary essentials at present known (and assuming that all are known), the protein factor alone was concerned in the failure to prevent the disease in those cases and, thus, that the dominating rôle of diet in the prevention and causation of pellagra is referable, primarily, to the character of the protein supply. Since the distinctive clinical physiognomy of the disease precludes the assumption of any but specific etiology, in the sense elsewhere suggested,[22] and since protein is now regarded as merely a complex of amino-acids, different for different proteins, the dominating rôle of diet in the development of the disease would seem referable to a specific quality of the amino-acid make-up of the protein supply. Just what amino-acid, combination or (within certain limits) combinations of amino-acids are primarily concerned remains for future study to determine. It should perhaps be noted that, as already suggested, the possibility of an as yet unappreciated or an unknown factor (conceivably a vitamin), alone or in combination with the amino-acid factor, is not absolutely excluded.

CONCLUSIONS

Diet controls the course and development of the disease.

The relationship thus disclosed probably depends primarily on a specific quality of the amino-acid make-up of the protein supply.

OCCURRENCE AND SIGNIFICANCE OF SYSTOLIC MURMURS IN HEALTHY INDIVIDUALS *

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I have been unable to find in the literature a clear picture of the cardiac systolic murmur of the so-called functional type. There is confusion concerning what constitutes a functional murmur, and its significance. Necessarily, the actual interpretation of such a murmur and the conclusions to be drawn from its presence are obscure and vague.

Wilson [1] speaks of a very common murmur. This occurs in the pulmonic area, is systolic in time, and is usually not transmitted. To this murmur he gives the name of accidental instead of functional. He asserts that such a murmur is common in normal persons. Furthermore, he asserts that it is difficult to tell from the character of this murmur or, in fact, of any murmur whether or not it is due to a valve lesion. The relation of posture to the murmur is important. Often it appears only in the recumbent position. By way of explanation, Wilson offers the suggestion that such murmurs may be due to slight degrees of pressure or torsion on the vessels of the heart caused by the alteration of the position of the heart in the chest.

Mackenzie [2] speaks of the difficulty of distinguishing between organic and functional murmurs. He feels that a systolic murmur at the apex not transmitted may be functional to the same extent that one in the pulmonic area may be functional. A murmur in a person in robust health may often safely be called functional. It may even be a normal sign. That a murmur of appreciable intensity can occur in a perfectly normal heart is opposed to the ideas of many physicians. This Mackenzie freely admits. He holds, however, that the view that a heart with a murmur is necessarily not a normal heart has done much harm, more particularly in life insurance examinations and in examinations for fitness for military service.

The foregoing opinions simply serve to emphasize the uncertainty in regard to the origin and interpretation of the type of systolic murmur commonly called functional. We really know little of the causation of murmurs, and there is little justification to hold that all murmurs indicate organic abnormalities of the heart simply because some have been found to be associated with a pathologic condition of the heart.

In the examination of Harvard students before participation in athletic competition, there was an unusual opportunity to observe cases of murmurs of questionable significance. Above all, it was important that these murmurs be properly interpreted, since a really serious murmur, not regarded as such, might cause a good deal of damage to the student. It was increasingly noted that what perhaps two or three years before was considered an organic murmur in a boy must actually be considered functional. Often a murmur noted in the examination of a freshman was found to disappear two or three years later. The constant recurrence of this led to much less significance being attached to such murmurs, and a much more liberal interpretation of them as functional.

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[19] Buniva, cited by Roussel (Footnote 1). De Rolandis, ibid. Calmarza: Memoria sobre le pellagra, Madrid, 1870, p. 82. McCafferty: Gulf State J. Med. & Surg., 1909, pp. 228-236. Goldberger, Joseph: Pub. Health Rep. **31:** 3159-3173 (Nov. 17) 1916.

[20] Wilson, W. H.: J. Hyg. **20:** 1-59 (July) 1921.

[21] Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Diet of Nonpellagrous and of Pellagrous Households, J. A. M. A. **71:** 944-949 (Sept. 21) 1918; Pub. Health Rep. **35:** 648-713 (March 19) 1920.

[22] Goldberger and Tanner: Pub. Health Rep. **37:** 462-486 (March 3) 1922.

* From the Department of Hygiene, Harvard University.

[1] Wilson, F. N.: Diagnosis of Chronic Heart Disease, in Nelson's Modern Medicine **4:** 423.

[2] Mackenzie, James: Diseases of the Heart, Oxford Press Medical Publications, p. 326.

For some time it had been the impression in the Department of Hygiene at Harvard College that many so-called organic murmurs were functional. There has been an increasing tendency to discard the explanation of an organic basis for the frequent murmur, particularly in the pulmonic area. With the hope of clarifying some of the existing confusion, special observations were made. The latter investigation involved, in the first place, a fairly positive decision of what murmurs were functional and what were organic. After that decision was made, two questions had to be answered. Is a man who had a murmur regarded as nonorganic as physically effective as a man with no murmur? And what chance is there of doing harm by treating men with such murmurs as if they were perfectly normal?

In the examination of eighty-four men entering athletic competition in 1919-1920, about 10 per cent. were found to have a murmur interpreted as functional. This murmur was commonly heard in the pulmonic area, was not transmitted, and was usually increased in the recumbent position. It was also occasionally heard at the apex, and sometimes in both places, and less commonly all over the precordia. The murmur was the sole abnormal finding by percussion, auscultation and in the history. It is believed that this murmur would be generally regarded as nonorganic. The men with this murmur were classified separately. All men were subjected to the following tests. The heart sounds were ausculted with the subject in an erect position with the breath exhaled for perhaps twenty seconds. The same was done with the subject in a recumbent position. The 10 per cent. mentioned above, or eight men who already had such murmurs, showed a definite increase in the volume of sound by reason of this procedure. Twenty-five, or 30 per cent., of the eighty-four men were found to have no murmurs of any sort under these conditions. The remaining fifty-one men, about 60 per cent. of the men examined, showed a definite murmur, systolic in time, in the pulmonic area. This made fifty-nine men, or 70 per cent. of those examined in this manner, who had a systolic murmur. No apical or precordial murmurs could be produced by this method, the pulmonic area being the only place where any could be heard. In all cases this artificially produced murmur was loudest in the recumbent position.

With these results in mind, the same observations were carried out in 1920 and 1921 with the candidates for all the athletic teams in the university. This included track and cross-country, baseball, hockey, football, basketball, crew, soccer, lacrosse, wrestling, tennis, fencing, swimming and squash racket teams, comprising in all 506 men. This number was exclusive of six men who had a marked systolic murmur at the apex, which was transmitted to the axilla, and who, with other signs and a suggestive history, were regarded as having a probable organic valvular lesion. These men at once were excluded from athletic competition.

Here again, fifty-three, or about 10 per cent., of these men had murmurs which have been described above as functional. In forty of these cases the murmur was increased by the procedure given above. In 284, or 56 per cent., a systolic murmur was produced where none could be demonstrated before, 276 in the pulmonic area and eight at the apex. None of these murmurs were transmitted. This made 316 men, or 62 per cent., who showed some change in the heart signs as a result of this experiment, and a total of 337 out of 506, or nearly 67 per cent., of apparently normal men in whom a murmur could be demonstrated.

Apparently this simple procedure produced a murmur where none had been heard before in otherwise sound men. This would seem to indicate the relative unimportance of such murmurs, when appearing under ordinary conditions of medical examination, since in many cases they could be produced at will.

It should be said that often the records indicate that the same murmur is both heard and interpreted differently by different examiners. Variability in interpretation applies particularly to this type of murmur unless it is observed for some time. In these observations, however, the same man was able to observe all of the cases, and in this manner at least to establish a fixed basis for comparison. It is, of course, difficult to describe the intensity of a murmur. However, no murmurs of such feeble intensity that they were at all questionable were included. Only those murmurs were included which were easily heard and readily demonstrated to other physicians.

It was found that many of these men had been told that they had weak hearts and that they should indulge in no vigorous exercise, and that the tendency, as Mackenzie says, had been in many cases to exaggerate the significance of these murmurs. Often the result was that such men arrived in college with inadequate muscular development, and in many cases with very little physical stamina. This picture, taken in conjunction with other minor signs of imperfect function, such as an unstable blood pressure, rapid pulse, or a slight trace of albumin in the urine, tended to exaggerate the importance of the murmur. The impression of the examiners was that all these signs went to make up a picture of which the heart murmur was merely a component part rather than a cause. With this idea in mind, such men were allowed to exercise very much as they pleased under careful observation, reporting to the examiner every two or three weeks. It was somewhat surprising to find that often in a period of five to six months such men, after doing track work, wrestling, swimming, baseball and occasionally football, tended to be very much improved. In numerous cases the murmurs were appreciably diminished or had disappeared. Along with this there was a noticeable improvement in the general muscular development of the student and an increase of stability as denoted by his pulse, blood pressure, etc. Some men were found to have a louder murmur when tested after exercise at the time of the examination. They were also allowed to participate in competitive athletics of a fairly vigorous nature. A similar result was noticed in these cases. It was often found that a murmur which at first had been considered possibly organic, particularly in conjunction with other signs, was eventually considered functional. Experience tended to make these murmurs seem of less importance the more they were observed, and that the real benefit derived by these men from exercise—and from competitive exercise under moderate strain—made this tendency even stronger.

The practical conclusion of such observations has been that a man with a murmur interpreted in this liberal fashion as functional is allowed under observation to go into any sport that he chooses, crew, distance running and football not excluded. These men were subjected to various tests, which were particularly useful in the study of the condition termed "effort syndrome," with which many physicians renewed their acquaintance during the war. The heart is auscultated in a recumbent position, as well as the erect position, and after a few minutes' vigorous exercise. Any marked variability in action or rate of the heart, blood pressure, etc., or its symptoms is noted. If such a man shows an increased murmur after exercise, it is deemed necessary to keep him under observation for a month or six weeks at intervals of perhaps two weeks or more. If he does not, the murmur is disregarded beyond being a matter of record and being noted for comparison in his reexaminations during the season. Numerous instances have been found in which a murmur increased by exercise has been changed, after a month or more of vigorous athletics, so that it is not increased and sometimes changed enough so as to disappear. Whether or not this is due to simple increased muscular efficiency of the heart is difficult to say, though it seems possible. There has been so far no case in which harm has been done by this procedure, and no case in which a serious murmur has been found to develop. Most of these men in the questionable group show objective improvement in other ways beside the subsiding of the systolic murmur that they have shown. They show usually a tendency to stabilize blood pressure and to improve any nervous instability which they may have. Albuminuria, if present, may come or go, independently of what they do athletically. Subjectively, they invariably say that they feel much better than before they indulged in competitive exercise.

Whether or not the fact that this phenomenon occurs solely in the definite age group as represented by the college student is difficult to say. We can only say that the experiment here noted was confined entirely to such a group. What seems more important, however, is that this interpretation of a functional murmur has been evolved from the results of these simple experiments, and from the observations on men over two or three years before it was tried. It would seem that a man with a functional murmur could be considered as normal for all purposes of athletic competition. In other words, as far as doing himself damage was concerned, such a man might do as much as he was able, although his physical ability would not be that of a man who presented no such murmur.

It was noted that in some twenty-five men known to be remarkable athletes, no murmurs could be found by any procedure, experimental or otherwise. This would seem to put the so-called functional murmur in the class with functional albuminuria, as one of the criteria separating the nearly perfect physical specimen from what we are pleased to term the normal individual. It would not show that the so-called normal individual could suffer any great harm from undergoing the strain of ordinary athletic competition. The heart being a muscle like other muscles of the body, it may be that these few perfect individuals were possessed of better muscle tone there as well as in other portions of the body. In other words, these individuals were more efficient physically than those who had these functional murmurs. This would seem to put functional murmurs in the class of findings which may eventually help us to establish a standard of functional efficiency.

Physical examinations have not as yet satisfactorily explained why, of two men with nearly the same physique and no particular defects, one man can do much more than the other, particularly under strain. This was demonstrated during the war. It was difficult to tell beforehand who would "stand the gaff" and who would not.

Some sort of functional examination based on standards which will enable one to prophesy a man's efficiency would seem to be the next step in physical examinations. So far there seem to be few such standards established, and it may be possible that functional murmurs may furnish one of these standards.

CONCLUSIONS

These somewhat fragmentary observations would seem to show that:

1. The systolic murmur in the pulmonic area, even in an individual with unstable blood pressure and other signs which might disturb a physician, is a physiologic phenomenon which is yet to be explained.
2. Such murmurs need not bar men of the college age from strenuous exercise under some strain.
3. Exercise under these conditions has seemed to improve rather than harm the health of these men, and has served at the same time to demonstrate that they are not quite so efficient physically as those without demonstrable or producible murmurs.
4. The consideration of these murmurs may be a step toward determining in advance a man's functional efficiency in meeting competition not only in athletics but perhaps in life in general.

THE MEDICAL CERTIFICATE OF DEATH

A PROCEDURE TO MAKE THE STATEMENT OF CAUSE OF DEATH RELIABLE

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The director of the United States Bureau of the Census is constrained each year to introduce his report on mortality statistics with the admission that the country as a whole has very incomplete records. The invaluable figures and tables of the report concern only that part of the United States termed the registration area. This area has been uninterruptedly extending, and is still growing. In 1880, Massachussetts, New Jersey and the District of Columbia comprised the registration area, accounting for only 17 per cent. of the population, while in 1919 it comprised thirty-three states, the District of Columbia and eighteen cities, accounting for 81.1 per cent. of the population. In 1920, Nebraska was found eligible and included. But there are still fourteen states with such incomplete death registration that the federal statisticians do not consider their certificates worthy of recording.

UNRELIABILITY OF STATISTICS OF CAUSES OF DEATH

While this concerns all classes of citizens, and particularly those entrusted with making laws, there are inaccuracies in the mortality statistics for which the medical profession is responsible. In 1919 the Bureau of the Census found it necessary to classify 15,603 causes of death as ill-defined diseases, and in 1920, 15,505. On every one of these certificates a physician certifies his failure to define a fatal illness so that the statisticians may know what the disease or injury was.

Medical science lacks a common terminology. If typhoid fever were so called by all physicians, the statisticians would rapidly compile an accurate typhoid fever mortality; but typhoid fever is also called abdominal fever, typho-enteritis, enterica, typhogastric fever, and other undesirable names; diphtheria may lurk under such terms as acute exudative angina, malignant tonsillitis, croup and fibrinous laryngitis; and almost any malady may be shrouded in such terms as abdominal disease, atrophy, bilious catarrh, capillary congestion, colliquative fever, diathesis fever, visitation of God, and want of vitality. While almost every disease has more than one name, there are names by which it may unmistakably be identified by the statistician. The lack of uniform names for diseases and the physicians' indifference toward the certification of deaths are the principal obstacles to accurate statistics of causes of death.

The Bureau of the Census and state registrars are untiring in their efforts to overcome these difficulties. To every physician in the country the Bureau of the Census sends pamphlets calling attention to the fundamental importance of precise and complete statements in death certificates. "Relation of Physicians to Mortality Statistics" and "Physicians' Pocket Reference to the International List of Causes of Death" are two pamphlets undoubtedly well known to most physicians. The state registrars distribute manuals which explain the state vital statistic laws, and they usually include a list of unsatisfactory and nonacceptable terms. About two years ago the Bureau of the Census published the "Standard Nomenclature of Diseases and Pathological Conditions, Injuries, and Poisonings for the United States," to interest the medical profession in uniformity of names. This was a step in the right direction; but, obviously, a long time will elapse before any improvement from this source will be reflected on the cause of death statements.

THE ST. THOMAS SYSTEM OF DEATH CERTIFICATION

With these discouraging facts disclosed, it may appear utopian to assert that with the cooperation of the medical profession a procedure may be established which will effect an efficient registration of the causes of death. The principle of the system recommended is an authority to define reliable statements of cause of death, vested in the state registrars. The key to its application is a list of terms to be used as statements of the cause of death. The method of applying this system may be described more readily if, as an illustration, its introduction and operation in St. Thomas, Virgin Islands, is outlined.

Three of the Virgin Islands, St. Thomas, St. Croix and St. John, were added to the insular possessions of the United States in 1917. The President appointed an admiral in the Navy as governor, and a group of naval officers were assigned to fill the various administrative positions. Several medical officers were included in this staff. The government was to be administered according to laws made under the Danish rule in force at the time of the transfer, and such other laws as might be enacted by the native "colonial councils."

The law governing the registration of deaths was inadequate in its provision for a medical certificate of death. A bill to provide for the registration of births and deaths was therefore drafted and introduced in the colonial councils. It passed the council for St. Thomas and St. John without any changes in the provisions relative to the death registration, and became effective, Jan. 1, 1919. The fate of this bill in St. Croix will be referred to in another connection. The bill as passed in St. Thomas was patterned after the so-called "model bill," which has served as the prototype for vital statistic laws in many states in the registration area.

A change of fundamental importance concerning the medical certificate of death was made. The St. Thomas law provides that "only statements declared by the registrar to be reliable statements of cause of death shall be held sufficient for the issuance of a burial or removal permit." In the model bill the corresponding provision reads: "Indefinite and unsatisfactory terms, denoting only symptoms of disease or conditions resulting from disease, will not be held sufficient for the issuance of a burial or removal permit; and any certificate containing only such terms, as defined by the state registrar, shall be returned to the physician or person making the medical certificate for correction and more definite statement." Thus, the St. Thomas registrar was to inform the physician what terms to use, while the state registrar is charged to define such terms as may not be used as statements of cause of death.

Indefinite terms used in reporting deaths	Further information required for proper classification
Carbuncle	Was this anthrax or malignant pustule? Was it caused by diabetes?
Carcinoma	What organ or part of the body did the carcinoma affect?
Cardiac asthma......	Name the form of heart disease causing death.
Cardiac asthenia.....	These returns are generally equivalent to "heart failure," a return which should never be made nor accepted. See "Heart failure."
Cardiac debility......	
Cardiac failure......	
Cardiac weakness....	
Caries	State location and cause. Was it tuberculous?
Casualty	Give nature of accident.
Catarrh	An unsatisfactory statement. Give location and preferably make a proper statement of disease causing death.
Catarrh of bowel....	Was this diarrhea or enteritis?
Catarrh of lungs....	Was this acute or chronic bronchitis, bronchopneumonia, or pulmonary tuberculosis?
Catarrh of stomach...	Very indefinite and frequently secondary to other diseases. Name disease causing death.
Cellulitis	Give location and cause. Was it erysipelas? Was it puerperal or traumatic?
Cerebral coma.......	"Coma" is necessarily cerebral as resulting from interference with the functions of the brain, but the cause of it may vary widely. Was it from cerebral hemorrhage, Bright's disease, etc.? Was it due to violence? If so, give nature of accident.

Page from a manual for local registrars in one of the registration states, showing a part of the list of indefinite terms, held unsatisfactory as statements of cause of death.

The state registrars usually compile a list of indefinite and unsatisfactory terms, which they request physicians to avoid. Instruction to local registrars as to what procedure to follow in case these unsatisfactory terms were used is given. The accompanying page reproduced from a local registrars' manual will serve to illustrate this point.

This procedure, at its best, is imperfect. The list of unsatisfactory terms is never complete, and other terms equally ill defined will be used. This leads the local registrar at times to use his own judgment in passing upon the reliability of a medical certificate of death, and places the physician in the embarrassing position of having his ability to state the cause of death questioned by a layman. Instead of this, the rôle of the local registrar should be merely a checking of the physician's statement against a definite and authoritative standard.

The elaboration of a standard list of terms acceptable as statements of cause of death was the initial step in the task assigned the St. Thomas registrar. This list was edited as a nomenclature of diseases and conditions[1] in which the reliability of each title as a statement of cause of death was appraised. The style of this nomenclature is shown in the accompanying table.

The titles were obtained principally from the Bellevue Hospital Nomenclature of Diseases and Conditions. The roman numerals in the second column refer to a classification of the titles as to their reliability as statements of cause of death:

Class I. Reliable statement of cause of death without necropsy or other verification.

Class II. Reliable statement of cause of death when verified by necropsy.

Class III. Reliable statement of cause of death when verified by necropsy or operation.

Class IV. Reliable statement of cause of death when verified by necropsy or confirmatory laboratory tests.

Class V. Reliable statement of cause of death when verified by necropsy or demonstrations of the etiologic organism.

Class VI. Reliable statement of cause of death when supported by a statement of complications or other conditions adequate to cause death.

Class VII. Inadequate as statement of cause of death, and not to be used as such.

STYLE OF NOMENCLATURE OF DISEASES AND CONDITIONS, VIRGIN ISLANDS OF THE UNITED STATES

International Number*	Reliability as Statement of Cause of Death	
5	V	Malaria
7	I	Measles
13	VI	Mumps
31	V	Tuberculosis, chronic pulmonary
41	VII	Septicemia
57	IV	Diabetes mellitus
92	II	Embolism of pulmonary artery
101 (a)	I	Pneumonia, lobar
118	III	Hernia, ventral, strangulated
146	I	Septicemia, puerperium

* Third decennial revision, 1920.

Physicians and local registrars were advised that only nomenclature titles should be used in the medical certificate of death, and that no statement of the cause of death would be held reliable unless the supporting data or other verification as prescribed in the nomenclature were furnished. Exception would be made only when the physician was unable to obtain the data required, as in the case of relatives refusing necropsy; but in such a case the fact that the supportive evidence could not be obtained and the reason for it had to be stated.

The St. Thomas certificate of death conformed in all points of importance to the medical certificate of death of the "Standard Certificate of Death" edited by the Bureau of the Census; the questions appearing in this blank are here reproduced.

MEDICAL CERTIFICATE OF DEATH

16 Date of Death (month, day, and year) 19
17
I hereby certify, That I attended deceased from .... 19..,
to ...... 19.., that I last saw h.... alive on ...... 19.., and that
death occurred, on the date stated above, at ....m.
The Cause of Death* was as follows:
....
.........................(duration) ......yrs. ......mos. ......ds.
Contributory ....
(Secondary)
.........................(duration) ......yrs. ......mos. ......ds.
18 Where was disease contracted
if not place of death?.......................................
Did an operation precede death?...... Date of..................
Was there a necropsy?...
What test confirmed diagnosis?...............................
(Signed)..., M. D.
, 19 (Address)

* State the Disease Causing Death, or in deaths from Violent Causes, state (1) Means and Nature of Injury, and (2) whether Accidental, Suicide, or Homicidal. (See reverse side for additional space.)

Medical certificate of death of the "Standard Certificate of death" edited by the Bureau of the Census.

Among the titles in the table showing the style of nomenclature, "Measles," "pneumonia, lobar," and "septicemia, puerperium" belong to Class I, "reliable statement of cause of death without necropsy or other verification," and may be used as statements of cause of death without supportive data of any kind. "Embolism of pulmonary artery" is in Class II, "reliable statement of cause of death when verified by necropsy," and as a statement of cause of death must be verified by necropsy. An affirmative answer to the question, "Was there a necropsy?" would thus make the statement satisfactory. If a necropsy was not granted, a statement of this fact on the reverse side of the certificate where space was provided for such purpose would be required. A death from "hernia, ventral strangulated," a title of Class III, would require verification by necropsy or operation. The only entries required for verification by operation would be an affirmative answer to the question, "Did an operation precede death?" and the date of the operation. "Diabetes mellitus" is a title from Class IV, "reliable statement of cause of death when verified by necropsy or confirmatory laboratory tests." An entry after the question, "What test confirmed diagnosis?" showing the diagnostic urine findings or a necropsy would be required to support this title as a statement of cause of death. "Chronic pulmonary tuberculosis," a title in Class V, "reliable statement of cause of death when verified by necropsy or demonstration of the etiologic organism," would have to be supported by a necropsy or by a statement that *B. tuberculosis* was found in the sputum in answer to the question, "What tests confirmed diagnosis?" "Malaria," also a title of Class V, would have to be similarly verified by necropsy or finding of the causative plasmodium. "Mumps" as a statement of cause of death is in Class VI, "reliable statement of cause of death when supported by a statement of complications or other conditions adequate to cause death." It represents a number of diseases which rarely are fatal except through complications. The registrar therefore desires to know the complications or other conditions adequate to cause death. Ample space for such statement is provided under the heading of contributory (secondary) causes, and on the reverse side of the death certificate. What some physicians call septicemia offers a more complicated problem. The term belongs to Class VII, "inadequate statement of cause of death and not to be used as such." It would be necessary for the physician to investigate further to find the cause of the septicemia and the primary cause of death, and then give a statement of cause of death accordingly.

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[1] Hakansson, E. G.: Nomenclature of Diseases and Conditions, Virgin Islands of the United States, Government Printing Office, 1919.

This system worked satisfactorily. It had no loopholes for indefinite statements of the cause of death. With an occasional exception, the statements of cause of death were reliable as required in the nomenclature, the exceptions coming under the provision above mentioned, namely, that supportive data would be waived when the physician was unable to obtain them. The result of the first year, 1919, was perfect with 100 per cent. reliable statements of cause of death.[2]

In order to emphasize the necessity of precise instruction to physicians, the contemporary experience with death registration in St. Croix may be referred to. The article in the bill providing that "only statements declared by the registrar to be reliable statements of cause of death shall be held sufficient for the issuance of a burial or removal permit" did not receive the approval of the legislature of this island, but was changed to allow that the statement of cause of death may even be omitted if the word "natural" is entered. This practically tied the hands of the registrar relative to any control of the statement of cause of death. The only thing he could do was to engage the interest of the physicians and ask for their voluntary cooperation. The result was another example of the utter failure of such a procedure; 12.2 per cent. of the death certificates registered under this law in 1919 were worthless for the purposes of cause of death statistics, and had to be placed in the class of ill-defined diseases.

SIMILAR SYSTEM APPLICABLE IN THE UNITED STATES

If this description has conveyed an accurate picture of the St. Thomas system of death registration, it should be obvious that a similar system is applicable to any state or other unit of the United States. Its introduction involves (1) an amendment to the paragraph of the state vital statistic laws to the effect that the state registrar be empowered to declare what statements of cause of death shall be held sufficient for the issuance of burial permits, instead of the authority to define the terms not to be held sufficient for the issuance of burial permits, and (2) the elaboration of a list of acceptable statements of cause of death with appropriate instruction in regard to its use. Should the future progress in death registration follow along these lines, it is desirable that the list of reliable statements of cause of death be accomplished before any state law is amended as indicated above. The initiative recently taken by the Bureau of the Census in editing a standard medical nomenclature suggests that this federal agency may undertake the publishing of such a standard list of reliable statements of cause of death. The American Medical Association or the American Public Health Association may direct its interest in vital statistics into this channel. The availability of a list of this kind would be a forceful impetus to legislate for its use; and, in case the necessary authority should be granted by state legislatures, state registrars would undoubtedly be happy to adopt it instead of working out their own lists. One standard for the whole country could thus be expected. To hasten this event, the Bureau of the Census could possibly make the use of this standard list a condition for membership in the registration area.

The compilation of a satisfactory standard list of reliable statements of cause of death should meet no insurmountable obstacles. With the aid of such nomenclatures as those issued by the Royal College of Physicians of London, and Bellevue Hospital, New York, and the Standard Nomenclature of the Bureau of the Census, the best terms could readily be selected. The evaluation of these terms as statements of cause of death and the determination of the kind of supportive evidence needed for each would be connected with some difficulties; but with combined efforts of statisticians, clinicians and pathologists it could undoubtedly be worked out to meet with the approval of the medical profession. The number of titles in a list of this kind need not exceed 1,500, since only one name of each disease and injury that may cause death would have to be included. It could be published as a pocket sized booklet less than 1 cm. thick, a point of some importance.

Some readers may question whether a system of death certification prescribing the use of certain terms will ever be popular with the medical profession. This may occur particularly to the physicians who connected themselves with the medical corps of the government services during the World War, and who probably found the use of their nomenclatures a source of annoyance instead of help. These physicians undoubtedly missed the opportunity of seeing the work done in filing rooms and offices in which the statistics of the great medical work of the war were compiled, or failed for some other reason to appreciate the necessity of systematic medical records. To any one who has worked with records of morbidity and mortality or to those who have had to look for facts in statistics, the fundamental importance of accuracy and explicit terms in the primary records of disease and death is obvious. To them, and undoubtedly to others who have become interested, a list of acceptable statements of cause of death becomes an assistance instead of a burden, offering definite assurance that one's statements will have their full and correct value.

With accurate medical certificates, the statistician can furnish the true death rates for every disease and injury causing death, and the death rates of these by age, sex, race, month and other conditions, the value of which in preventive and curative medicine can hardly be overestimated. With ambiguous medical certificates of death, mortality statistics become not only worthless but misleading. The condition in the United States at present is somewhere between those two points.

If the assumption that the majority of physicians furnish reliable statements of cause of death is correct, it follows that the medical profession is being robbed, so to speak, of accurate statistics of the causes of death through the indifference of a minority of its members. It appears, then, that the rational policy of the majority would be to favor a system which would compel the indifferent minority to ascertain and state in definite terms the true cause of death whenever possible.

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[2] Hakansson, E. G.: Birth and Mortality Statistics of the Virgin Islands, Government Printing Office, 1920.

SUMMARY

1. The statements of causes of death in the United States are to a great extent ill defined and unreliable, a condition seriously impairing the value of statistics of the causes of death.

2. A system of death registration giving a hundred per cent. satisfactory medical certificates has been effected in St. Thomas, Virgin Islands of the United States.

3. The principles of this system are applicable in the United States, and could be introduced and successfully applied if the full and active cooperation of the medical profession were obtained.

THE VITAL CAPACITY OF "CARDIACS"

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Spirometry has been employed at variable intervals during the past seventy-five years as a means of rating abnormal conditions of the respiratory organs, but, owing to certain mechanical defects in the construction of the different spirometers, the results have not been very satisfactory. In recent years a new impetus has been given to the performance of tests of this kind by the invention of the piston-recorder and the various forms of bellow-plethysmographs. No doubt, these instruments serve as much more accurate means for recording the volume of the respiratory air than the old type of Hutchinson spirometer.

It is well known that dyspnea is one of the earliest symptoms of heart disease. Accordingly, it is regarded by physicians as a most important diagnostic sign of functional impairments of this organ; in fact, the degree of dyspnea, in relation to the general muscular efforts required to produce it, is frequently employed as a measure of the physical efficiency of the patient. In order to be able to demonstrate this relationship more clearly, repeated attempts have been made in the last few years to discover a more definite expression of the respiratory capacity of normal persons as a standard of comparison with the capacity of persons suffering from various organic and functional disorders of the heart and adjunct organs.

The experimental studies pertaining to this subject-matter are very numerous. It is not the purpose of this brief communication to enumerate them in abstract form, but merely to call attention to an error which has crept into this literature. It is frequently stated, and particularly in reviews of the papers of Peabody,[1] McClure and Peabody,[2] Wilson and Edwards,[3] Ulrich and Nathanson,[4] and others, that the vital capacity of "cardiacs" may be from 40 to 70 per cent. below the normal. The latter value is usually determined by calculation in accordance with the body surface of the person, although it may also be derived from the average figure obtained from a large number of spirometric tests made on persons of different height and weight.

As generally employed in discussions pertaining to functional disorders of the heart, the term "cardiac" really refers to any disease condition of this organ whether valvular or myocardial in its character. Thus, owing to the fact that a very general meaning is often given to this term, the reader may obtain the erroneous impression that all persons afflicted with organic or functional diseases of the heart possess a subnormal vital capacity. As may readily be gathered from the accompanying table containing the pertinent data regarding fifteen students with unmistakable evidence of heart disease, this inference is by no means correct.

THE VITAL CAPACITY OF "CARDIACS"

Case No.	Character of Lesion	Age, Years	Height, Cm.	Weight, Kg.	Av. Vital Capacity, C.c. Calculated	Av. Vital Capacity, C.c. Obtained	Difference Above or Below Calc. Value	Pulse Rate, Min.	Blood Pressure, Mm. Hg
1	Aortic regurgitation (severe); mitral stenosis and regurgitation (mild)	25	176	75	4,200	4,650	+450	85	142.0 (60.0)
2	Aortic regurgitation (severe)	24	170	60	3,800	3,525	−275	82	140.0 (70.0)
3	Mitral stenosis (severe)	28	180	69	4,700	4,850	+150	87	126.0
4	Mitral stenosis (moderate)	24	175	65	4,100	4,425	+325	84	125.0
5	Mitral stenosis (mild)	22	180	70	4,700	5,560	+860	78	125.0
6	Mitral stenosis, tachycardia, extrasystoles	25	166	68	3,700	4,725	+325	90	140.0
7	Mitral stenosis and regurgitation (moderate)	29	173	64	4,000	3,950	− 50	84	135.0
8	Mitral stenosis (moderate)	25	169	68	3,700	3,825	+125	82	130.0
9	Mitral stenosis (severe), aortic regurgitation (mild)	25	171	70	3,800	3,775	− 25	86	134.0
10	Mitral stenosis (severe), aortic regurgitation (moderate)	23	168	68	3,700	4,450	+750	80	130.0
11	Mitral stenosis (severe)	26	163	65	3,700	3,750	+ 50	86	134.0
12	Mitral stenosis (moderate)	25	170	68	3,800	3,850	+ 50	84	130.0
13	Aortic regurgitation (moderate)	23	168	70	3,700	3,710	+ 10	92	142.0
14	Aortic regurgitation (moderate), mitral stenosis (mild)	25	173	71	4,000	4,100	+100	87	135.0
15	Tachycardia, extrasystoles, slight murmurs.	22	179	77	4,400	4,525	+125	72	125.0

The spirometer used for these measurements has recently been devised by me[5] for the purpose of registering the tidal air as well as the inspiratory or expiratory quantities of air of the larger mammals. By means of a special valve, permitting a reversal of the recording mechanism, practically unlimited quantities of air may be made to pass in a continuous stream through this instrument.

It is evident that the vital capacities here recorded closely approach the calculated normal values, and in several instances actually exceed them. A glance at the columns containing the different values for the pulse rate and blood pressure will show that these lesions were all well compensated for, although care was taken not to select these cases in a manner to favor the results. Hence, it may be concluded that a marked decrease in the vital capacity actually signifies cardiac decompensation, and that the percentage indicating its reduction may be employed as a measure of the failure to compensate. The further assertion that this factor, embodying the vital capacity, portrays the condition of the patient more plastically than the blood pressure and pulse rate, may justly be questioned, although it must be granted that it constitutes an important objective record in the diagnosis and prognosis of practically all cardiac disorders. It is to be emphasized, therefore, that the vital capacity does not suffer a material change in those "cardiacs" whose compensation is adequate.

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[1] Peabody, F. W.: Clinical Studies on Respiration, Arch. Int. Med. **20**: 433 (Sept.) 1917.

[2] McClure, C. W., and Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, J. A. M. A. **69**: 1954 (Dec. 8) 1917.

[3] Wilson, M. G., and Edwards, D. J.: Vital Capacity of Lungs and Its Relation to Exercise Tolerance in Children with Heart Disease, Am. J. Dis. Child. **22**: 443 (Nov.) 1921.

[4] Ulrich, H. L., and Nathanson, M. H.: Minnesota Med. **4**: 721 (Dec.) 1921.

[5] Burton-Opitz, Russell: J. Lab. & Clin. Med., to be published.

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LEUKOCYTIC REACTIONS TO MORPHIN *

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The need for some agent or method to increase the number of leukocytes in effective circulation, and especially the polymorphonuclear neutrophils in certain infectious diseases and other conditions, has long stimulated research in this field. Results, however, have been negligible.

Gehrig,[1] in a general review of the question, lists several score of agents affecting the white blood cells, but the evidence in regard to their action seems to him to be contradictory. For example, morphin is cited as causing leukocytosis [2] and leukopenia,[3] and as having no effect on the leukocytes at all.[4] This conflicting testimony, as presented in Gehrig's review, is so unsatisfactory as to be worthless. A closer examination of the original papers themselves, however, tends to point otherwise. Achard and Loeper [3] give no figures or experimental data at all, but merely state that in their opinion morphin causes a leukopenia and a reduction in the number of polymorphonuclear neutrophils. In an article on quinin, Maurel [4] gives no data either, but simply infers that morphin has no effect on the leukocytes. On the other hand, Hericourt and Richet [4] present many figures showing that chloral and morphin in combination have no effect on the leukocyte count in rabbits, and then conclude that neither separately has any effect. In a study of the leukocytic effects of pyretics and antipyretics, Bohland [2] found that morphin caused a leukocytosis in man following the injection of 0.01 gm. His work was carefully controlled in regard to the diurnal variation under the conditions of his experiments, and a typical result showed an increase from a normal white blood cell count of 6,386 to 13,832 six hours after morphin, with a return to 7,805 nine hours after the drug was given. It would seem, therefore, that none of the work on the leukocytic effects of morphin as reviewed by Gehrig were worth discussion except Bohland's. The experiments of Cloetta [5] are not mentioned by Gehrig at all. In a study of experimental morphin tolerance, this investigator noted that an injection of 0.1 gm. of morphin in rabbits produced an initial leukopenia, followed by a leukocytosis developing most markedly from three to four hours after the injection. His results are confirmed in our work. In rabbits in which a tolerance to morphin had been established, Cloetta found the same leukocytic reaction to morphin as in normal animals. The leukopenia seemed to him to coincide with the period of deepest depression.

TABLE 1.—EFFECT OF SUBCUTANEOUS INJECTIONS OF MORPHIN SULPHATE ON THE LEUKOCYTIC AND DIFFERENTIAL COUNTS IN FOUR RABBITS

Hours After Drug	Average White Blood Count for 4 Rabbits	Per Cent. of Normal Leukocytes	Average per Cent. Polymorphonuclears	Per Cent. of Normal Polymorphonuclears	Average per Cent. Lymphocytes	Per Cent. of Normal Lymphocytes
0	6,710	100	62	100	34	100
½	6,180	91	72	116	24	70
1	5,420	80	74	119	21	61
2	7,250	107	76	122	21	61
4	10,480	155	76	122	21	61
6	16,370	243	78	125	19	55
24	6,800	101	61	99	33	97

Results are here presented for the effect of morphin on the leukocyte counts in rabbits, dogs and men. In four rabbits, a uniform dosage of 4 mg. of morphin sulphate per kilogram of body weight was used; in fifteen dogs, dosages varying from 1 to 10 mg. per kilogram of body weight, and in four men, the standard quarter grain, regardless of weight. The injections were all subcutaneous. Blood was drawn by a small syringe from the ear veins of the rabbits, and from the femoral artery in the dogs; it was transferred to a small, clean, sterile dish, and then drawn into the pipets for counting. The object of this procedure was to obtain circulating blood, as counts made on blood taken from ear pricks in animals are unreliable, not only because of inherent difficulty in getting real blood undiluted with excess of serum, but also because, as Ikeda [6] has shown, morphin reduces leukocytic emigration to the point of local injury. Blood was taken from the ear lobes and finger tips of the men. Two independent counts were made on the same sample from the animals, and in the men blood was drawn simultaneously from two points and counted independently.

TABLE 2.—EFFECT OF SUBCUTANEOUS INJECTIONS OF MORPHIN SULPHATE ON THE LEUKOCYTIC AND DIFFERENTIAL COUNTS IN FIFTEEN DOGS

Hours After Drug	Average White Blood Count for 15 Dogs	Per Cent. of Normal Leukocytes	Average per Cent. Polymorphonuclears	Per Cent. of Normal Polymorphonuclears	Average per Cent. Lymphocytes	Per Cent. of Normal Lymphocytes
0	8,700	100	80	100	16	100
½	7,600	87	80	100	16	100
1	11,500	132	85	106	11	68
2	12,600	144	87	108	11	68
4	12,300	141	86	107	11	68
6	11,900	136	85	106	12	75
8	10,900	125	84	104	14	87
18	10.100	116	82	102	15	93
24	9,300	106	82	102	14	87

The tables show the same general leukocytic reaction to morphin in rabbits, dogs and men, namely, a relatively slight leukopenia, lasting for about an hour after the drug, followed by a more pronounced leukocytosis maintained for ten hours or more, and returning to normal within twenty-four hours. The differential counts show a large relative increase in the number of polymorphonuclear neutrophils, with a diminution in the percentage of lymphocytes, and relatively insignifi-

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* From the Physiological Laboratory, University of Wisconsin.

[1] Gehrig: Ztschr. f. exper. Path. **17**: 161, 1915.

[2] Bohland: Centralbl. f. inn. Med. **20**: 361, 1899.

[3] Achard and Loeper: Compt. rend Soc. de biol. **53**: 217, 1901.

[4] Hericourt and Richet: Compt. rend. Soc. de biol. **45**: 187, 1893. Maurel: Compt. rend. Soc. de biol. **55**: 367, 1903.

[5] Cloetta: Arch. f. exper. Path. **50**: 476, 1903.

[6] Ikeda, Y.: J. Pharmacol. & Exper. Therap. **8**: 137 (March) 1916.

cant changes in the percentage of the other leukocytic elements. This indicates an absolute increase in the number of polymorphonuclear neutrophils, with the absolute number of lymphocytes in the circulating blood remaining the same. In two dogs, not included in the tabulated data, a second injection of morphin at the time when the leukocytosis was marked, about four hours after the first injection, resulted in a further increase in the total number of white blood cells within an hour or so without any noticeable previous leukopenia.

Dr. C. H. Bunting and his assistants in the Pathology Department of the University of Wisconsin confirmed the general findings in rabbits, and sought for a possible explanation of the reaction in definite stimulation of bone marrow, but failed to find any evidence for this. In the light of forthcoming work from this laboratory indicating the production of a transitory but real acidosis under morphin, with an accumulation of acetone bodies in the blood, it is suggested that the leukocytic response to morphin may be one phenomenon in the general response of the body to reduced oxidation, with its accompanying slight generalized inflammation, as a result of the action of the drug.

TABLE 3.—EFFECT OF SUBCUTANEOUS INJECTION OF MORPHIN SULPHATE ON THE LEUKOCYTIC AND DIFFERENTIAL COUNT IN FOUR MEN *

Subject: E. D., aged 33, weight 140, in good health

Hours After Drug	Leukocytes per C.Mm.	Per Cent. Polymorphonuclears	Per Cent. Lymphocytes	Per Cent. Transitionals	Per Cent. Eosinophils	Respiration per Minute
0	8,500	75	24	0	1	12
1	7,700	72	24	4	0	10
2	9,200	80	17	3	0	9
4	9,600	81	18	1	0	9
6	10,200	80	19	1	0	7
8	11,600	80	19	1	0	7
10	11,100	..	..	..	..	10
22	9,300	81	17	2	0	12

Subject: A. M. C., aged 33, weight 160, rhinitis

Hours After Drug	Leukocytes per C.Mm.	Per Cent. Polymorphonuclears	Per Cent. Lymphocytes	Per Cent. Transitionals	Respiration	Pulse
0	8,700	71	26	3	16	64
1	6,800	69	25	6	20	56
2	11,400	77	19	4	16	56
3	11,100	79	18	3	12	56
5	11,000	80	17	3	16	56
6	11,400	79	20	1	18	56
8	11,400	..	..	..	18	54
11	11,800	78	20	2	18	54
22	7,800	72	25	3	18	54

Subject: C. E. M., aged 24, weight 176, in excellent health

Hours After Drug	Leukocytes per C.Mm.	Per Cent. Polymorphonuclears	Per Cent. Lymphocytes	Per Cent. Transitionals	Per Cent. Eosinophils	Respiration	Pulse
0	6,200	68	26	3	3	24	72
1	5,000	72	21	4	3	20	68
2	6,800	74	20	4	2	16	60
4	7,400	81	16	2	1	16	60
7	9,200	80	16	2	2	16	68
9	9,400	80	17	1	2	20	76
12	8,800	82	16	1	1	20	76
24	5,600	79	18	1	2	24	76

Subject: W. E. H., aged 26, weight 181, severe cold, rhinitis, tonsillitis, bronchitis, coughing and headache

Hours After Drug	Leukocytes per C.Mm.	Per Cent. Polymorphonuclears	Per Cent. Lymphocytes	Per Cent. Transitionals	Per Cent. Eosinophils	Respiration	Pulse
0	13,600	70	26	3	1	20	76
1	13,800	73	23	4	0	18	76
2	16,400	77	19	4	0	16	72
5	17,000	79	17	4	0	12	60
10	16,200	80	16	3	1	20	80
22	9,800	79	17	4	0	20	88

* Subjects fasted and rested in bed during experiment, and for twelve hours before.

It is obvious that, in estimating the diagnostic value of a white blood cell count after the subcutaneous administration of morphin, allowance must be made for the effect of the drug on the count. Whether this reaction to morphin gives the drug added clinical value is hardly a question for a laboratory worker to discuss.

RETINITIS OF HYPERTENSION PLUS NEPHRITIS *

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The changes that take place in the ocular fundus of persons who have disease of the kidneys and high blood pressure have been so fully described by oculists and internists that a review of their general characteristics is unnecessary. Salient features of the pictures presented have been described as characteristic of all the known causative factors, stress being laid on the edema of the papilla, the star figure at the macula, and areas of exudate lying in proximity to the disk margin. When white spots of exudate or degenerative processes have been prominent features of the retinal picture, the term albuminuric retinitis has been employed to name the condition. If, in the absence of characteristic white spots, there were marked vascular changes, renal disturbance would be suspected and the cardiorenal status of the patient investigated. Complicated pictures are encountered, and confused ideas of the causes and course of the changes seen with the ophthalmoscope are expressed in textbooks and special articles. Much of this confusion has arisen through the difficulty in determining the presence of renal diseases and the variation in classifications of renal diseases.

The introduction of new and important knowledge regarding the cardiovascular system has again opened the discussion with regard to the relative influence of this factor in contradistinction to nephritis in the production of retinal lesions, and has tended to make the ophthalmologist uncertain in his interpretation of findings. Thus, according to Rochon-Duvigneaud,[1] "The diseased kidney is the cause of the retinal lesions . . . in consequence of deficient elimination, and the retention of urea or some substance intimately related to urea." Schieck and Volhard [2] quote the same author to the effect that: "The diseased kidney influences the retina through a definite form of insufficiency of elimination. There is concerned the retention of nitrogen or of a substance that is intimately connected with it and which is thrown into the retina; the cause is not a definite kidney disease, not the contraction, but the azotemia." After reviewing the theories of retinitis, they assert, contrary to Rochon-Duvigneaud's theory, "If we ask ourselves to which remote effect of kidney disease the retinal lesions stand in compulsory relation, we must say, not to toxic uremia, azotemia, and disturbance of kidney function, not to the remote effect of edema . . . not to the degree of albuminuria and presence of casts . . . not to the qualitative or quantitative change in the urinary secretion, but singly and alone to the most important remote symptoms of kidney disease, the origin of which is still entirely concealed in darkness, namely, to *the rise of blood pressure.*"

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* From the Section on Ophthalmology, Mayo Clinic.

* Read before the Section on Ophthalmology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Rochon-Duvigneaud: Albuminuric Retinitis, Ophth. Rev. **31**: 307-310, 1912.

[2] Schieck, F., and Volhard, F.: Netzhautveränderungen und Nierenleiden, Zentralbl. f. d. ges. Ophth. **5**: 465-470, 1921.

Albuminuric retinitis does not always indicate an incurable disease of the kidneys or of the cardiovascular system, as has been well demonstrated in the cases of war nephritis. Acute attacks of nephritis due to focal infection and with lesions of the retina have also been described. Considering the internist's difficulty in definitely recognizing and classifying the various types of nephritis, it would seem unwise to attempt to say that the occurrence of albuminuric retinitis indicates the presence of a particular type of nephritis, such as glomerular nephritis, and contracted kidney, or even to insist that nephritis is present at all in some cases. The essential features of the composite pictures that make up albuminuric retinitis, however, can be studied singly in connection with the general vascular system and the kidneys. The nature and course of the retinal disease can be conveyed to the internist more accurately through a careful description of the fundus than by any term that cannot be fully defined. The single features which in their entirety compose the retinal pictures have a definite significance, and the association of groups of features gives the best indication of the processes that are active in their production. Vascular changes are present in varying degree in all types of retinitis, and form the logical basis on which can be erected a useful classification without reference to the still unsettled classification of nephritis. The character and amount of change in the vessel walls can be studied as easily as any other single feature of the retina, and as the pathology of the vessels in several types of retinitis has been well described, it forms the groundwork for further studies of this condition. The working plan by which the studies are carried on at the Mayo Clinic has been described.[3] I now wish to present another group of cases in which nephritis occurs late, and as a secondary factor probably follows that uncertain condition known as essential hypertension.

The term retinitis of hypertension plus nephritis refers to a series of changes produced in the retinal vessels and ocular fundus by an increase in blood pressure, and other changes resulting from chronic nephritis, or accompanying chronic nephritis. The term is applied to the retinal picture, which is characterized by arterial walls thickened through proliferation of the middle coats, leading to contraction of the arteries, narrowing of their caliber, and the reflex arterial stripe, arteriovenous compression, increased caliber of the veins, and hemorrhages and edema in the retina. The reduction in caliber of the vessels is more uniform in this condition than in primary arteriosclerosis. The arteries are not beaded, and there is little or no tendency to the formation of perivascular plaques or to the proliferation of new vessels, although the thickening of the arterial walls which has been designated arteriocapillary fibrosis[4] advances after a time to sclerosis, which in many respects simulates primary sclerosis of the arteries. There appear in the fundus small white isolated spots or confluent plaques and cream colored layers of exudate which produce a rather bright luster. In addition to this picture, considerable edema of the nerve and retina, recent showers of hemorrhages, and cotton wool patches of exudate indicate that another agent has become active in the production of retinal lesions. An attack of acute nephritis is to be expected and, I believe, nearly always occurs, giving the ophthalmoscopic picture which I have described as the retinitis of acute nephritis.[5] It is to be found in persons of any age in whom high blood pressure, essential hypertension, has been constant for a sufficient length of time to bring about the thickening of the walls of the artery, and it is most commonly found in persons whose blood pressure has been known to be elevated for several months or years.

The pathology of this type of vascular degeneration has been described by Gull and Sutton,[4] but at the time their studies were made little was known of the influence of variations of blood pressure, and essential hypertension was entirely unknown. Whether the contraction of the small arteries is the factor which produces the high blood pressure or the high blood pressure causes the arteries to become thickened is an unsettled question. However, it seems to be clearly evident that the blood pressure is raised in essential hypertension long before the contraction of the retinal arteries is noticeable, for in a great many persons having an essential hypertension, with diastolic blood pressure of 160 or more and a systolic of more than 200, the retinal vessels show not a single sign of thickening or other change. Also, persons having primary chronic nephritis will have high blood pressure for years without retinal signs until a definite renal break and retinitis of acute nephritis occur. On the other hand, whenever visible contraction of the arteries is found with arteriovenous compression, the diastolic blood pressure is almost invariably elevated. It also is quite true that persons whose retinal arteries give evidence of the thickening that is seen in essential hypertension of long standing are found to have cardiac hypertrophy and not infrequently albuminuria, headache, dizziness and other symptoms of chronic nephritis, but the presence of nephritis in such cases is difficult to prove even by urinalysis, chemical blood examination, and tests for renal efficiency.

Allbutt[6] quotes the opinion of many observers both in this country and abroad to show that there is a generally recognized malady characterized by continued elevation of the diastolic blood pressure in persons who, during life, gave no evidence of having nephritis, and whose kidneys at necropsy did not show, either macroscopically or microscopically, changes of nephritis. He also refers to the fact that some persons with chronic hypertenson often have albuminuria without nephritis. The arteries in the limbs and in the brain of such persons, he believes, have become thickened as the direct result of the increased intravascular load they are called on to carry, and that this thickening or sclerosis is independent of atheroma, toxic inflammation, or senile decadence. The thickening may be only connective tissue proliferation binding the vascular elements more closely together, or there may be actual hypertrophy of the middle coats or intimal lining of the vessels. He asserts that the stress and strain on the walls of the vessels from mechanical pressure is sufficient to produce these vascular changes.

The apparent thickening of the walls of the retinal arteries must be accounted for in some other way than by mechanical strain if it is true that a marked increase of intravascular pressure in an artery, the brachial for instance, is unaccompanied by increased intra-ocular intravascular pressure.[7] The fact that persons between the ages of 30 and 40 years are often known to have blood pressures well above normal for months or a few years, without any noticeable change in the retinal arteries, would lead one to suspect that the intra-ocular intravascular pressure is regulated by mechanisms outside the globe; in normal persons whose blood pressure is temporarily elevated by violent physical exertion, the absence of any noticeable change in the vessels of the fundus indicates a blood pressure control that prevents congestion of the fundus due to overfilling of the fine terminal vessels.

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[3] Benedict, W. L.: Retinitis of Cardiovascular and of Renal Diseases, Am. J. Ophth. **4**: 495-499 (July) 1921; Retinitis of Acute Nephritis; Report of Six Cases, M. Clin. N. Am. **5**: 275-288 (Sept.) 1921.

[4] Gull, W. W., and Sutton, H. G.: On the Pathology of the Morbid State Commonly Called Chronic Bright's Disease with Contracted Kidney ("Arterio-capillary fibrosis"), Med. Chir. Tr. **55**: 272-326, 1872.

[5] Benedict, W. L. (Footnote 3, second reference).

[6] Allbutt, C.: Diseases of the Arteries Including Angina Pectoris, London, the Macmillan Company, **1**: 280-371, 1915.

That this controlling factor is active in all persons at all times is not by any means to be accepted. Evidence is found in the congestion of the retina during attacks of migraine, in the marked tortuosity of vessels, and increased caliber of both arteries and veins in persons with migraine or epilepsy, that the vessels are at times subject to marked differences in intravascular pressure that leave permanent changes in their appearance.[8] The controlling factor, a vasomotor function, probably held in abeyance, or inhibited during attacks of migraine or epilepsy, is restored with the passing of the attack, and the normal relationship between vascular tension and cardiac force exists. Permanent changes in the blood vessels, however, result from this temporary overfilling. The blood pressure of a hyperpietic, however, has no such transitory course, and while the processes that lead to vascular changes may differ in many respects from those that bring about the vascular changes seen in persons with epilepsy and migraine, nevertheless, the changes are there and bear a special relationship to the continued high pressure within their walls. It rises gradually and remains on a fairly high level for years, unless means are brought about to reduce it.

With the gradual elevation of blood pressure and adequate cardiac compensation, early changes in the retinal arteries may not be visible with the ophthalmoscope. This is particularly true of young persons who have previously enjoyed good health. They may complain of inability to use the eyes for close work as usual, some frontal headache, and tenderness of the globes on pressure, but no structural lesions can be found to which their symptoms may be attributed. On the other hand, rapid increase in blood pressure not infrequently leads to tremendous edema of the nerve and retina, with hemorrhage and white spots about the macula, producing choked disk, star figures in the macular region, and even detachment of the retina. Such rapid rises in blood pressure, malignant hypertension, does not properly fall within the classification which we have under consideration. These illustrations are given merely to show that, under some circumstances, rise in blood pressure in the systemic vessels is accompanied by such marked and characteristic changes in the retinal vascular system that a causal relationship is not to be denied.

Our knowledge of the microscopic appearance of retinal arteries that have undergone thickening has not been materially increased since the time of Gull and Sutton,[4] who described the pathologic conditions of blood vessels of persons whose arteries were thickened, some of whom gave neither clinical nor postmortem evidence of nephritis. They found that, in the arterioles measuring about 0.3 mm. in diameter, the lumen of the blood vessel was about twice as great as the thickness of the wall; that is, on observing the vessel through the microscope, the thickness of its two sides or walls was found to equal the size of the lumen. That the thickening was generalized over the body appears from their studies also; for they say, "The morbid appearances here described were chiefly studied in the minute arteries and the larger capillaries of the pia mater, but, as we have said, the same may be seen in the arterioles of the kidneys, and, we may now add, of the skin, of the stomach, of the spleen, heart, lungs, retina, and so forth."[4] They further conclude: "This alteration is due to a 'hyalin-fibroid' formation in the walls of the minute arteries, and in 'hyalin-granular' changes in the corresponding capillaries. This change occurs chiefly outside the muscular layer, but also in the tunica intima of some arterioles."

Gull and Sutton recognized and described arteriocapillary fibrosis, without knowledge of the changes in blood pressure as now understood, and laid the foundation for the clinical distinctions between arteriosclerosis of atheroma, decadence and hyperpiesis. It was nearly forty-five years later that Moore[9] described the ophthalmoscopic picture of retinitis of arteriosclerosis, and separated from the composite picture of retinitis of albuminuria the single features which, taken together, comprise that group.

In the sclerosis of hypertension, the proliferation of the intima seldom amounts to complete occlusion of the lumen of the vessel as it does in the atheromatous type of sclerosis. Mostly, the thickening of the walls due to hypertrophy outside the lamina elastica gives the tubelike appearance to the artery and accounts for the straightening out of the bends. There is more elasticity to an artery so thickened than there is to one of the atheromatous type, which accounts for the difference in the angle of the arteriovenous crossing. Proliferation of new vessels characteristic of atherosclerosis comes as a result of the closing off of the lumen of the artery and widening of smaller arterioles and capillaries, until they carry sufficient blood for nourishment of the parts of the retina impoverished by the shutting off of the regular source of supply. So, too, one sees few or no ischemic areas in the fundus in early hypertension sclerosis; the visual function is not seriously impaired so far as visual fields will show, and entire occlusion of the arterioles with formation of new arteries is very seldom seen. Furthermore, the white plaques around the second and third divisions of the arteries and in the retina around the disk and macular region are not a part of this picture except in late stages in which the sclerosis has become far advanced.

The retinal signs of hypertension sclerosis in the order of their appearance may be divided into two stages: 1. Narrowing of the arterial reflex stripe and increased tortuosity of the arteries, loss of transparency of the artery walls, giving what has been described as a copper color, indentation of the veins which are crossed closely by arteries. 2. Noticeable contraction of the arteries both in diameter and length (straightening out of curves and bends), deep indentation of the veins where arteries cross closely over them, disappearance of small arterioles, due to their contraction, appearance of minute white spots in the fundus scattered around the macular region without any particular reference to artery endings, and veins two or three times the diameter of the corresponding artery, and showing ampulla-form dilatation distal to the arteriovenous crossing.

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[7] Moore, R. F.: The Retinal Circulation in Arteriosclerosis, Tr. Ophth. Soc. U. Kingdom **36**: 319-331, 1916.

[8] Higgens, C.: The Scotoma of Migraine, Lancet **1**: 935-936, 1915. Hunt, J. R.: A Contribution to the Paralytic and Other Persistent Sequelae of Migraine, Am. J. M. Sc. **15**: 313-330, 1915. Moore, R. F. (Footnote 7). Rupert, M. P. S., & Wilson, E. E.: A Study of Migraine, Am. J. M. Sc. **157**: 361-366 (March) 1919.

[9] Moore, R. F.: The Retinitis of Arteriosclerosis, and Its Relation to Renal Retinitis and to Cerebral Vascular Diseases, Quart. J. M. **10**: 29-75, 1916-1917.

This constitutes the picture that is seen in persons who have progressive hypertension before any clinical or laboratory evidence of nephritis is found; these symptoms may continue for many years without any noticeable change in renal function, or, as has been stated by Gull and Sutton, with "kidneys healthy, whilst heart much hypertrophied and minute arteries and capillaries much thickened by 'hyalin-fibroid' substance."

To the picture of retinal vascular fibrosis may be added other changes that indicate the effect of renal disease; but the retinitis that occurs with insufficiency of renal activity gives no indication of the duration of disease of the kidneys before the onset of the retinitis. Insufficiency of renal action or retention of nitrogen products, although results of nephritis, probably do not in themselves produce the retinal changes. Just how much of the retinal picture is due to vascular changes and how much is due to nitrogen retention is not known. Indeed, in some cases it would seem that the vascular disorders alone produce the retinitis, while in others the retention products acting in the absence of vascular changes produce a retinitis characteristic of nephritis. Acute nephritis may occur in a person who has had essential hypertension for years and be independent of the course or effect of that hypertension and may produce a retinitis of acute nephritis, even as in a person whose retinas had previously been free from vascular change. The retinitis would be produced just as in a person whose blood pressure is not habitually elevated, though its course will be altered by chronic hypertension. More particularly is this true of persons whose arteries have become sclerosed through long continued hypertension. "To the arteriosclerosis of hyperpiesis, the kidneys, so far as yet known, stand in no correlation; except that generally speaking, the kidney is one of the organs whose arteries are affected early." [8]

It is a common clinical experience that persons who are subject to high blood pressure are prone to have attacks of nephritis and to stand them rather poorly. Because of the difficulty in making a satisfactory diagnosis of nephritis, it is often difficult to decide whether a given patient is suffering from essential hypertension or hypertension with nephritis. Curiously enough, the retinal arteries may show well advanced fibrosis, and chronic nephritis diagnosed from laboratory findings and clinical signs may be present, without changes in the retina, except those due to the hypertension, that is, retinitis of nephritis may be absent. It is well known, however, that a severe break in renal function in a person who has hypertension will produce marked changes in the fundus characteristic of acute nephritis in addition to the vascular fibrosis. The picture is a composite one. The earliest noticeable additional changes consist of edema and hyperemia of the disk and flame-shaped or lanceolate hemorrhages in the retina near the disk. Following this, edema of the retina and areas of soft "cotton wool" exudate appear. If the blood pressure suddenly becomes greatly elevated, as usually happens with a break in renal function, the hemorrhages, edema, and exudate will be correspondingly increased.

THE FUNDUS CHANGES IN NEPHRITIS*

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As supportive argument to the probability that, clinically, "cases of chronic nephritis begin as cases of 'essential hypertension.' " Moschcowitz [1] refers to the "complete identity even down to the minutest details between the lesion of chronic nephritis and those of albuminuric retinitis"; and, he says, "If arteriosclerosis, the albuminuric retinitis and nephritis are analyzed in their morphologic and genetic aspects, no one, I believe, can escape the conclusion that they are all manifestations of the one and same lesion, a primary productive inflammation affecting all the blood vessels from the capillaries to the aorta."

While we must admit the microscopic similarity in lesions of the kidney and eye, we must not forget that "regarding the anatomical changes affecting the eye in albuminuria, it is safe to say that there is but little inflammatory action involved; there is but little infiltration of leukocytes and increase of nuclei, and very little hyperplasia of connective tissue, such as we would expect to find in so chronic a condition if true inflammation were present." [2]

Parsons [3] states that the pathologic changes in the eye are essentially those of a passive edema. Cushing and Bordley [4] believe from their "clinical and experimental studies of choked disk, that the edema of the retina itself is due in large part, even in these cases of nephritis, to a backing of cerebrospinal fluid under increased tension into the investing meningeal sheath of the optic nerve," and that "the condition of so-called albuminuric neuroretinitis is, in large part at least, a local edema of mechanical origin."

It is generally accepted, I believe, that the chronic kidney shows considerable inflammatory pathology, even to the actual presence of the micro-organisms in the capillaries of the glomeruli.[5] So that, even in the similarity of the pathology, there is, nevertheless, a difference sufficient to preclude the acceptance of albuminuric neuroretinitis even as contributory proof that nephritis is of vascular origin, or that this vascular change is the result of a previous hypertension.

It cannot be substantiated that any of the changes are due to an "essential hypertension," or "that the most prominent factor in the production of retinitis of diseases of the vascular system and of nephritis is sclerosis of the retinal arteries." [6] The clinical facts which upset this theory are the infrequency with which the retinitis is found in these conditions, whether nephritis is present or not, and the fact that the various retinal changes do occur in the absence of retinal vascular sclerosis and hypertension.

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* From the Department of Ophthalmology, Long Island College Hospital.

* Read before the Section on Ophthalmology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on request.

1. Moschcowitz, E.: Clinical and Anatomical Relations in Chronic Nephritis, Arch. Int. Med. **26**: 259 (Sept.) 1920.
2. Weeks, J. E.: A Clinical Contribution to the Pathology of Albuminuric Retinitis, Arch. Ophth. **17**: 276, 1888.
3. Parsons: Pathology, New York, 1908, **4**.
4. Cushing, H., and Bordley, J., Jr.: Subtemporal Decompression in a Case of Chronic Nephritis with Uremia; with Especial Consideration of the Neuroretinal Lesion, Am. J. M. Sc. **136**, No. 4, Oct., 1908.
5. MacCallum: Textbook of Pathology, 1917, p. 262.
6. Benedict, W. L.: Retinitis of Cardiovascular and of Renal Diseases, Am. J. Ophth. **4**: 495 (July) 1921.

A. E. Bulson, Jr.,[7] has said, "The fundus lesions that may accompany persistent high blood pressure and the various types of nephritis are due to the presence of toxic substances in the blood. The character and the extent of the retinal lesions depend on the virulence of the toxic substances, the stage of the angiopathic disease, and the resistance offered by the vascular structures of the eye." If to this is added the conclusions of Cushing and Bordley,[4] Bulson's admirable statement is completed. There can be no question of the fact that increased intracranial pressure is capable of producing and does produce the changes found in albuminuric neuroretinitis, in whole or in part. It is also a fact that, in the uremic state, the intracranial pressure is increased.

I have had occasion, several times, to observe an albuminuric neuroretinitis develop and pass through its several stages. Under observation at this time is a case, a toxemia of pregnancy,[8] in which, from a normal fundus, there developed in less than a week papilledema, exudative plaques, hemorrhage, and retinal edema. This retinal edema was marked in a zone immediately surrounding the disk, from there fading off until the retinal periphery was apparently normal. In two weeks' time, this edema had cleared up from the periphery, leaving at this writing only a slight degree immediately around the disk. The disks still retain their swelling of about 1 diopter, and the typical star-shaped figure has appeared in the macula. In this case, kidney function was normal, and the blood showed no retention. Therefore, we cannot refer to it as being due to the retained products of poor elimination; to the kidney as an intermediary;[9] or to vascular sclerosis; but must lay its cause either to the direct action of the blood toxin on the nerve and retinal tissue, or the increased intracranial pressure of cerebral edema, or both.

Another case, also a toxemia of pregnancy,[8] but with a preexisting nephritis, showing marked blood retention and low kidney function, presented the same fundus picture, but with the addition of retinal vascular sclerosis. Shall we say this fundus was due to a retinal vascular sclerosis?

The prognosis as to life or sight, in these cases, is not bad because the producer of the blood stream toxin is known, even though the toxin itself remains a matter of unknown character.

I do not exclude these pregnancy cases, as has been the custom, although no such case appears in the tables submitted. I believe that in the pregnancies the study of the eye changes, which are exactly similar to those of the nephritides, affords us the reason for the albuminuric neuroretinitis of nephritis.

A study of our cases, either ambulatory or in the hospital, will prohibit the acceptance of hypertension, vascular sclerosis, cerebral edema, diseased kidney with poor elimination or the constituents of blood retention as the sole cause of the retinal changes in nephritis.

We see continually in our private, dispensary and hospital work, all of the changes characteristic of albuminuric neuroretinitis, in varying combinations. In the absence of nephritis, we do not hesitate to ascribe as a cause for these changes the three "T's" of Bell, the anemias, infectious diseases, or the sensitizing proteins.

In the accompanying tables, all figures represent the averages taken from repeated examinations, with the exception of Cases 4, 12, 25, 32, 41, 45, 46, 49, 56, 58, 61, 67, 77, 78, 79, in each of which only the result of one examination is noted.

The albumin is noted in grams per liter; casts, as to presence or absence of any of the various types; urea nitrogen, uric acid, creatinin, and sugar, in milligrams per hundred cubic centimeters of blood.

The ocular changes are grouped under six headings, which represent all of the pathology shown in these cases. The cases are further grouped in series according to combination of changes peculiar to each. (Table 1.)

Under "vascular sclerosis," none of the presumptive signs of retinal vascular sclerosis appearing alone are noted. Only the accepted positive signs are here recorded, and their presence, in any case, of whatever degree, is simply reported as having sclerosis present. Retinal hemorrhages are charted regardless of character or number. "Papilledema" is used instead of "optic neuritis" or "neuropapillitis," because edema was the condition present in these cases, as against the inflammatory state presupposed by the term "neuritis."

Under "retinal degeneration" has been grouped the retinal changes exclusive of those already noted. In Series I, there is represented the small spots of retinal change so frequently seen at the site of an old retinal hemorrhage, and here assumed to be the remains of hemorrhages. In Series J, the foregoing is referred to, also the plaques of exudate, and other degeneration seen in albuminuric neuroretinitis.

Notation has been made of the deaths as they occurred under observation in the hospital. No attempt has been made to follow up the other cases.

"Hypertension," as referred to in this paper, means high blood pressure regardless of type or cause. The term "albuminuric neuroretinitis" is used advisedly. I realize that it is not so much nondescriptive as misused.

In the compiling of percentages, a white cell count of 10,000 or more is considered a leukocytosis; in the blood chemistry findings, anything over the following figures is considered retention: urea nitrogen 15, uric acid 3.5, creatinin 2.5, sugar 111.

It is of interest to note, in studying Table 1, that as the eye signs progress, in series, the hypertension, likewise, becomes more consistent. In other words, as the eye signs increase in chronicity, vascular sclerosis and retinal degeneration representing the chronic state, 87 per cent. of retinal vascular sclerosis, and 100 per cent. of retinal degeneration are accompanied by hypertension.

The albuminuria is heaviest in the eyes showing acute activity. In the ten cases showing retinal edema, there is an average of 7.7 gm. per case. The twelve cases showing papilledema average 3.3 gm. Six cases having both retinal and papilledema average 5.8 gm. The remaining forty-two cases average only 1.9 gm. per case. In Series D, acute fundi, there is shown an average of 8.3 gm., as against 6.5 gm. in Series E, in which the ocular changes designate an acute condition superimposed upon a chronic.

Albumin is proportional to the amount of tubular damage. Tubular damage is frequent in the infectious diseases and in the toxemias of pregnancy. The tubular cells are possessed of great regenerative power, since these cells may undergo considerable damage without death of the cells, and further, that there may be complete relining of a damaged tube instead of the destruction which ultimately leads to obliteration of its glomerulus (MacCallum).

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[7] Bulson, A. E., Jr.: Abstract of Discussion on Slocum, George: A Study of Ophthalmoscopic Changes in Nephritis, J. A. M. A. **67**: 5 (July 1) 1916.

[8] Case reported in full before the Eye Section, N. Y. State Med. Soc., April, 1922.

[9] Knapp, A.: Medical Ophthalmology, Philadelphia, 1918, p. 416.

If the retinal edema or papilledema is due to the acute kidney condition, and the kidney recovers from its acute state, the eye recovers anatomically and functionally. But if, as is pretty well accepted, the acute kidney condition is due to a rather virulent blood stream toxin, infectious or not, it is evident that the kidney will not recover anatomically unless the offending agent in the blood is removed; so that the eye, also, will not recover anatomically, but will pass on into its chronic state, as does the kidney.

As a matter of fact, any blood toxin is capable of similarly injurying any human organ, and this separately or in combination of organs. If this toxin is not removed, nature sets up a defense in the form of reparatory processes which give to the particular organ its chronic pathology. Then a repetition of injury further damages the organ, usually by an acute exacerbation of the chronic condition, and this may go on until there is total anatomic and functional destruction of the organ. It is, at least, a more logical belief that vascular sclerosis is so produced, and not by persistent hypertension.[1] The probability of such a course of events has already been stated by MacCallum.[10]

TABLE 6.—FREQUENCY OF EYE SIGNS IN VARIOUS TYPES OF NEPHRITIS, AND OCCURRENCE OF SYMPTOMS IN VARIOUS EYE CHANGES *

	Frequency of Eye Signs in the Various Types of Nephritis					Occurrence of Symptoms in the Various Eye Changes										
	Chronic Glomerular	Acute Glomerular	Chronic Tubular	Arteriosclerotic	All Cases	Hypertension	High Pulse Pressure	Low Phenolsulphonephthalein Output	Albumin	Casts	Urea Nitrogen	Uric Acid	Creatinin	Sugar	Leukocytosis
Full veins	66	87	20	28	58	89	44	91	87	68	76	76	53	75	54
Vascular sclerosis	77	25	40	85	71	87	54	92	77	63	71	66	36	64	55
Retinal hemorrhage	41	25	0	14	32	92	50	94	84	80	84	77	50	68	69
Retinal edema	20	50	20	0	20	67	31	100	93	62	62	86	56	56	43
Papilledema	43	25	20	14	35	96	42	100	89	78	85	78	56	76	59
Retinal degeneration	32	0	0	14	22	100	50	100	88	77	88	60	66	64	61
Series A	33	16	33	16	7	50	66	40	66	66	33	25	0	16	66
Series B	60	20	0	20	6	100	60	60	80	60	60	60	20	80	60
Series C	44	0	11	44	22	80	50	84	66	50	55	46	11	47	55
Series D	60	40	0	0	6	60	20	66	100	60	60	100	60	80	60
Series E	60	40	0	0	6	60	40	100	80	40	60	100	60	80	20
Series F	75	0	0	25	5	100	75	100	75	50	75	75	50	50	50
Series G	80	0	0	16	7	100	64	100	64	64	64	75	32	100	40
Series H	40	40	20	0	6	100	20	100	100	80	100	80	60	80	60
Series I	88	0	0	11	11	88	66	80	77	77	88	80	33	66	66
Series J	96	0	0	6	21	96	42	100	96	84	90	78	66	66	66

* Figures represent percentages.

We know that retinal vascular sclerosis exists without hypertension. Twenty per cent. of the cases in Series C had no hypertension; possibly a greater percentage were we to have seen these cases earlier. Retinal hemorrhages exist without visible change in the vessel wall, as also do edema and exudate. Then why say that the retinal change is due to sclerosis of the retinal vessels? Change in the vessel wall may render the wall more permeable, but this does not make the wall the causative factor.

Retinal vascular sclerosis was present in 71 per cent. of all cases. Occurring alone, it was present in 22 per cent. Retinal hemorrhage, in this series, was always attended by other fundus change, and occurred in 32 per cent. of all cases, mainly attended by retinal vascular sclerosis, and, as in these cases of sclerosis, accompanied principally by hypertension, low phenolsulphonephthalein output, and nitrogen retention.

Edema of the retina, in 20 per cent. of the cases, existed mainly in the acute kidney condition, the most marked retention being uric acid, and the condition made notable by the relatively low percentage of hypertension. Papilledema, in 35 per cent. of the cases, was most frequently present in the chronic kidney lesion, and the high proportion of low phenolsulphonephthalein output and hypertension is commensurate with the poor function of the chronic kidney and the hypertension of increased intracranial pressure. Retinal degeneration, in its various forms, found in 22 per cent. of the cases, was most often seen in the chronic kidney lesion, accompanied principally by hypertension, low kidney function, and fairly high blood retention.

It is evident, in studying these cases by groups, that as the eye signs increase in severity, as has already been stated, the hypertension shows a proportionate increase; at the same time the blood retention shows an increase, and the kidney function, as indicated by the phenolsulphonephthalein output, a decrease.

In Series C, vascular sclerosis alone, indicating chronicity, while the larger number shows hypertension and low phenolsulphonephthalein output, there is relatively a low degree of blood retention. This may be taken to mean that in these cases nature has set up a very effectual defense. But when, as in Series E, an acute attack is superimposed on this chronic condition, while hypertension is lower, the kidney function is less; but the blood retention is increased. In the same fundus, less sclerosis, Series D, much the same picture is presented as in Series E, with the exception of better kidney function when there is less sclerosis.

Comparing Series G and H, we find that, in the papilledemas, there is considerably more retention when sclerosis is absent.

All cases in Series J are of the type commonly referred to as albuminuric retinitis, either in its exudative or degenerative form. This Series represents 21 per cent. of all cases. The star-shaped figure in the macula was present in Cases 65, 68, 70, 71, 72, 73, 74, 78.

The analysis of these cases compares favorably with similar studies already reported by other observers.

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[10] MacCallum: Textbook of Pathology, 1917, p. 336.

However, it will be of interest to compare two cases in this report. Case 19 (Tables 1 and 3), a man of 58 years, under observation for one month for a chronic tubular nephritis, became uremic and died. His phenolsulphonephthalein output never went above 22 per cent.; the highest blood retention was: urea nitrogen, 115.3; uric acid, 5.5; creatinin, 3.6; and sugar 100; the highest blood pressure was: systolic, 150; diastolic 90, yet the only ocular change was a mild retinal vascular sclerosis. Case 64 (Tables 1 and 5), on the other hand, showed an albuminuric neuroretinitis in the exudative stage, yet had absolutely no blood retention, and a phenolsulphonephthalein output of 39 per cent.

CONCLUSIONS

The eye is no index to kidney damage in the sense used by Moschcowitz.

Sclerosis of the retinal vessels represents the evidence of nature's defense, rather than a causative factor in the production of retinitis.

In the light of the words of Cushing and Bordley,[4] "It is a quibble to refer the edema back to some toxic agency," it is still my belief that some injurious substance in the blood stream, call it toxic or not, is the basic cause of any or all of the signs noted in the retinitis of nephritis.

In the cause of the kidney pathology, we have the cause of the eye change. The ocular pathology does not exist because of the kidney change any more than the nephritis is the result of the eye change.

184 Joralemon Street.

Health Conditions in Eastern Europe.—The first bulletin to be issued by the League of Nations Health Section, just received, gives authoritative information regarding the prevalence of epidemic disease in eastern Europe. In Constantinople, during November and December, there were thirty-seven cases of typhus, 168 cases of typhoid fever and thirty-one cases of smallpox. Data received from Russia indicate an increase of typhus, particularly marked in the northwestern and northern parts of the country. Similar important increases are noted in all governments in the Ural region and in Petrograd and Moscow relapsing fever is increasing markedly, particularly in the Ural region, where 3,493 cases were reported during the first two weeks of November. In the same region 2,200 cases of typhoid fever were reported in November, although some of these may be due to confusion with typhus. For the week ending December 3, 195 cases of typhus were reported in Moscow, seventy three in Petrograd and 590 cases in Perm. For the five weeks ending December 3 there were notified in Poland 1,441 cases of typhus, 1,172 cases of relapsing fever, 3,748 cases of typhoid fever, 1,997 cases of dysentery, 219 cases of smallpox and 4,342 cases of scarlet fever. In Czechoslovakia, typhus seems to be fairly well under control but influenza is reported to be spreading southeastward. The bulletin indicates by tables and maps the occurrence of scurvy, typhus, dysentery and relapsing fever and supplies such statistics as are available concerning the incidence of disease in the Red Army. The report also contains a census of the Russian population, which indicates a great decrease in various centers. Thus Petrograd is reported to have decreased from 2,319,000 in 1913 to 706,000 in 1920 and Moscow from 1,817,000 in 1913 to 1,028,000 in 1920.

SIGNIFICANCE OF PATHOLOGIC CHANGES IN FUNDUS

IN GENERAL ARTERIAL AND KIDNEY DISEASES *

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With the advent of the newer methods in the study of kidney and arterial diseases, it is of prime importance to be familiar with the pathologic changes in the fundus, and their microscopic appearances. The pathologic reports and studies on albuminuric neuroretinitis are numerous and very thorough, and leave little to be added from the purely pathologic standpoint. It is mainly their significance and their special relationship to pathologic conditions of the kidney that has prompted me to present this subject.

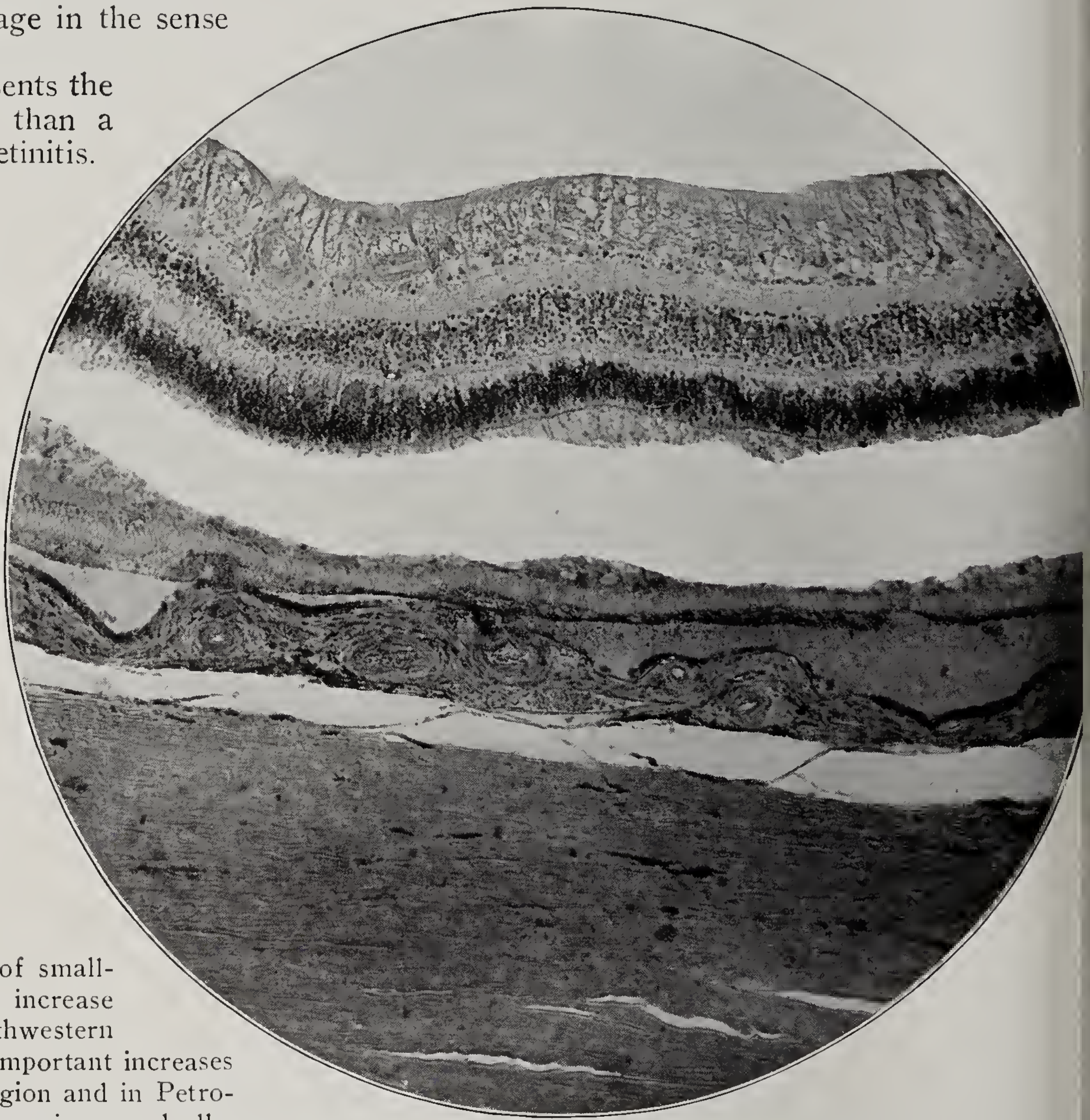

Fig. 1 (Case 1).—General capillary sclerosis, with contracted and practically structureless kidney. Retina: nerve fiber layer edematous; Müller's supporting fibers thickened; degeneration of ganglion cell layer; internuclear layer, commencing degeneration; albuminous exudate in internuclear layer; external limiting membrane broken and covered with exudate; pigment layer broken. Choroid: marked arteriosclerosis.

In my clinical experience I have found that the various classifications of kidney and arterial diseases have led to confusing diagnoses. Six years ago, while engaged in a study of the correlation of kidney to retinal diseases, I considered it of the utmost importance to have as a working basis a clinicopathologic classification which would be accepted by clinicians and pathologists generally. At about the same time, Drs. Levy and Larkin of the City Hospital, New York, were engaged in the study of nephritis based on the classification of the terms used by Volhard, Fahr and other Europeans. I was fortunately able to secure from them most of my eye material, with all the pathologic reports relating to the kidneys in the same cases. During this period we mutually, though intermittently, studied this subject with the hope that it might be productive of a nucleus for future studies. Drs. Levy and Larkin have shown in previous short reports, and in a more comprehensive report to be published shortly, that the various complexities in pathologic conditions of the kidney have their origin in one of the three structures of the kidney, namely, the glomerulus, the tubules or the vessels. They insist that the term interstitial nephritis is an untenable one, as connective tissue is the result of any pathologic change in the kidney, irrespective of its origin. They emphasize the fact that vascular changes in the kidney are either a primary or a secondary factor in the progress of its pathology. For example, the changes in the kidney may start in the glomeruli, the vessels and tubules being secondarily involved, and end as a structureless kidney; or the changes may start in the vessels and also end in a structureless kidney. Although the terminal pathologic condition is similar, the clinical symptoms and progress of the disease are entirely different.

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* Read before the Section on Ophthalmology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

Since it is well recognized that there are no pathologic changes in the fundus in certain types of kidney disease—as in tubular nephritis, so-called nephrosis—the ophthalmologist is mainly interested in such phases of kidney disease as have their origin in the glomerulus or vessels of the kidney.

In tubular nephritis, which is due to degeneration of the epithelium of the convoluted tubules, as in acute infectious diseases—scarlet fever, etc.—the fundus is normal, although in many instances the general symptomatology is characterized by massive edema.

The changes in the fundus described as albuminuric retinitis are confined to general vascular and arterial disease of the kidney. This is true whether the disease begins as a primary or as a secondary process following a glomerular nephritis. Capillary sclerosis (a primary arterial disease) is a general disease, the kidney and retina being involved as in any other organ of the body; in a certain number of these cases the kidney takes on true structural changes, designated by them as complex kidney. From a study of the material at hand, it is demonstrated that in the types of cases designated as capillary sclerosis, on the one hand, and, on the other hand, as capillary sclerosis with structural changes in the kidney, the retinal and choroidal arteries showed uniformly varying degrees of arteriosclerosis. They were under the impression that the cases designated as pure capillary sclerosis with no structural changes in the kidney would show only vascular changes in the retina and choroid and no concomitant ophthalmoscopic pathologic condition, as might be expected, such as whitish spots, retinal hemorrhages and papillitis. On the other hand, the cases designated by them as complex kidney would show structural changes in the retina and choroid, in addition to the vascular changes.

It was their impression that the hemorrhages, whitish spots and papillitis were the results of some toxic element produced by the structural changes in the kidney; but from a study of this material it has been demonstrated that the vascular changes were present in both types, and that clinically the retinal changes, whitish spots and papillitis were present irrespective of whether or not the kidney had taken on marked structural changes.

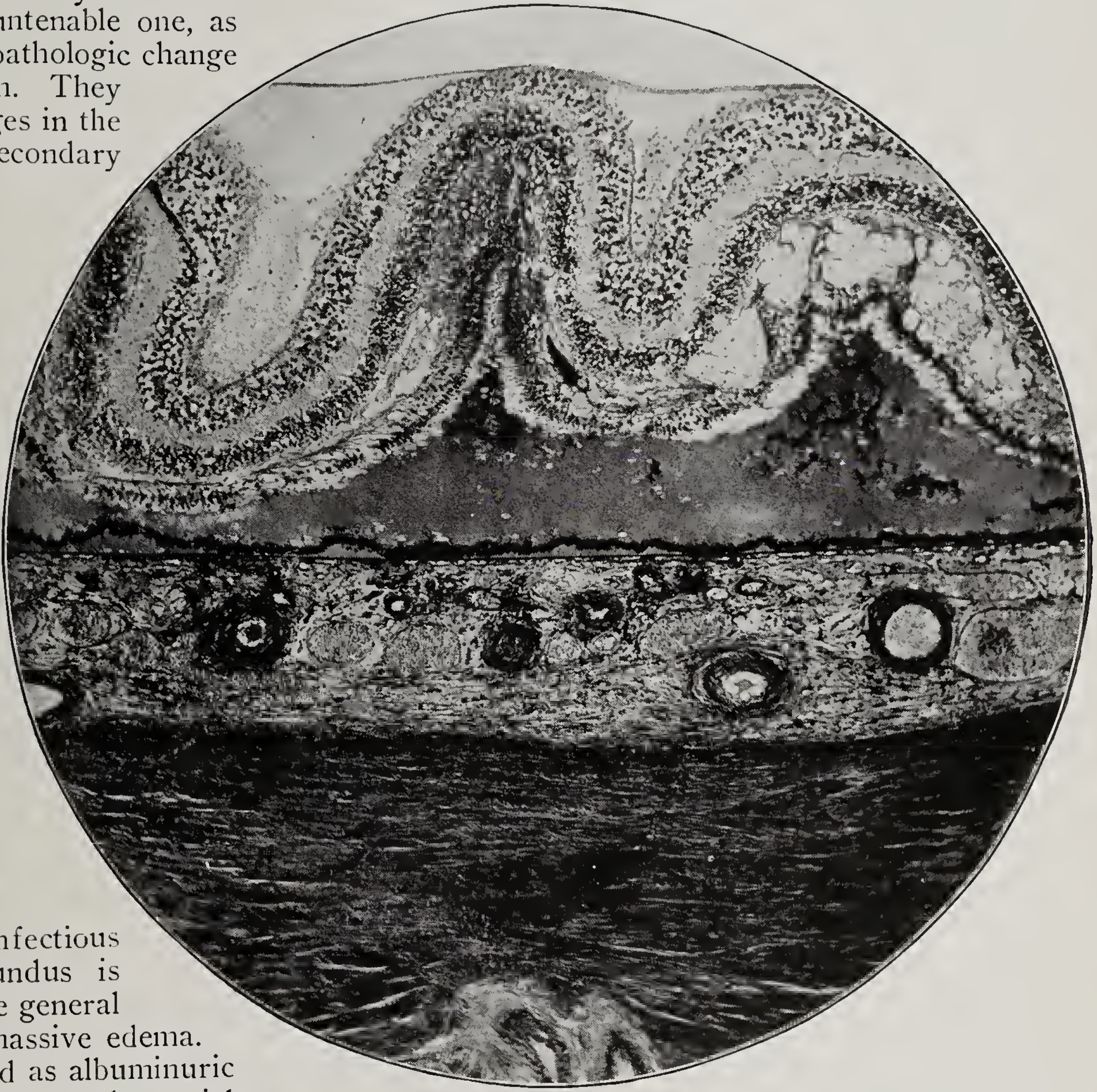

Fig. 4 (Case 3).—General capillary sclerosis with contracted and structureless kidney. Retina: all layers edematous; vacuoles in internuclear layer; subretinal exudate of cellular detritus and pigment. Choroid: vessels show varying degrees of stenosis of lumen due to thickening of walls of vessels. One vessel completely stenosed, owing to obliterating endarteritis; polymorphonuclears and round cells in stroma.

We believed that in certain types of cases of glomerular nephritis in which patients were suffering from uremia, the hemorrhages, whitish spots and papillitis were of toxic origin; still, after my examination of the material, I was surprised to find that nothing definitely pathologic could be found except the arterial changes, similar to the pure arteriosclerotic cases described above, and causing as a result whitish spots, hemorrhages and papillitis. It is possible that, in the course of glomerular nephritis, certain unknown factors produce arterial changes in the fundus. This seems plausible because I have observed clinically patients suffering with kidney disease in whom the changes in the fundus were those generally described as albuminuric neuroretinitis, and in whom there was no disturbance of apparent toxic origin from the kidneys, such as increase of urea nitrogen in the blood.

The various theories found in the literature suggesting that hypertension, cardiac hypertrophy and excess of urea nitrogen in the blood are factors in producing the pathologic changes in the fundus are still open to question. Levy and Larkin suppose that the hypertension in the glomerular cases undoubtedly follows the lesion in the kidney, and that it is questionable in capillary sclerosis whether the hypertension is primary or secondary. Nevertheless, from my microscopic eye examinations, the common factor noted in all these cases was the arterial change in the retina and choroid, and I am led to believe that a vascular wall disease is the basic factor in producing the various clinical fundus changes. The possibility of arteriosclerosis being the basic pathologic factor of albuminuric retinitis has been mentioned by such writers as Gull and Sutton, Carl Theodore, Michel, Hoffman and Weeks. Similarly, the same question applies to cardiac hypertrophy and to hypertension, whether of primary or of secondary origin.

SUMMARY OF FINDINGS

Case No.	Age	Urea Nitrogen	Blood Pressure	Cardiac Hypertrophy	Kidney Diagnosis	Ophthalmoscopic Findings	Microscopic Eye Findings	Pathologic Cause of Death
1	52	133	240	Marked	Capillary sclerosis; structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema: retina, arteriosclerosis, oblit. endarteritis, hemorr., albuminous exudates, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, polys., round cells	Cardiac and renal
2	50	65	260	Marked	Capillary sclerosis; structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, vacuoles, hemorrhages; choroid, round cells and polys., colloid excrescences, arteriosclerosis	Cardiac and renal
3	50	48	200	Marked	Capillary sclerosis; structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, oblit. endarteritis, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, round cells and polys.	Cardiac and renal
4	58	28	205	Marked	Capillary sclerosis; structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, hemorrhages, serofibrinous exudates, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, hemorrhages	Cardiac and renal
5	52	73	230	Marked	Capillary sclerosis; structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, hemorrhages, vacuoles, cytoid bodies; choroid, arteriosclerosis, oblit. endarteritis, polys., round cells, perivascular	Cardiac and renal
6	32	105	190	Moderate	End stage; glomerular nephritis; structureless	Moderate chorioretinal arteriosclerosis with few hemorrhages, whitish foci, no papilledema	No papilledema; retina, moderate arteriosclerosis, hemorrhages, serofibrinous exudates, vacuoles, cytoid bodies; choroid, moderate arteriosclerosis, round cells, polys.	Renal
7	32	158	220	Moderate	Capillary sclerosis; practically structureless; contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, vacuoles, cytoid bodies, subretinal exudate; choroid, arteriosclerosis, oblit. endarteritis, polys., round cells	Cardiac and renal
8	36	240	210	Moderate	Capillary sclerosis; practically structureless; contracted	Not noted	Papilledema, retina, arteriosclerosis, vacuoles, perivascular round cell infiltration; choroid, arteriosclerosis, oblit. endarteritis	Cardiac and renal
9	44	45	220	Mild but concentric enlargement	Capillary sclerosis; structure fairly well preserved, not contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, polys., perivascular round cell infiltration	Cardiac
10	40	17	190	Marked	Capillary sclerosis; structure fairly well preserved; not contracted	Moderate chorioretinal arterioscleosis	No papilledema; retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, round cells, polys.	Cardiac
11	56	Not noted	Not noted	Marked	Capillary sclerosis; structure fairly well preserved; not contracted (hypophysial tumor)	Moderate chorioretinal arteriosclerosis with bilateral secondary optic nerve atrophy	No papilledema; retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis, oblit. endarteritis, polys., round cells	Pituitary tumor
12	35	54	250	Marked	Capillary sclerosis; structure fairly well preserved; not contracted	Marked chorioretinal arteriosclerosis with numerous hemorrhages, whitish foci and papilledema	Papilledema, retina, arteriosclerosis, vacuoles, albuminous exudates; choroid, arteriosclerosis, oblit. endarteritis	Cardiac
13	50	50	Not noted	Marked	Capillary sclerosis; structure well preserved; not contracted	Not noted	No papilledema; retina, arteriosclerosis; choroid, arteriosclerosis	Cardiac
14	48	37	Not noted	Not noted	Capillary sclerosis; structure well preserved; not contracted	Not noted	Papilledema, retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis, polys., round cells	Cardiac
15	62	138	150	Moderate	Decrescent arteriosclerosis upon which is superimposed a glomular nephritis	Moderate chorioretinal arteriosclerosis	Papilledema; retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis, polys., round cells	Cardiac
16	47	27	110	Marked due to aortic insufficiency	Decrescent arteriosclerosis; structure well preserved; not contracted	Moderate chorioretinal arteriosclerosis	Papilledema; retina, arteriosclerosis, vacuoles; choroid, arteriosclerosis increase in connective tissue	Encephalitis
17	48	Not noted	Not noted	Normal	Decrescent arteriosclerosis (hypernephroma)	Moderate chorioretinal arteriosclerosis	Papilledema; retina, no arteriosclerosis, vacuoles; choroid, arteriosclerosis	Hypernephroma
18	58	13	230	Moderate	Decrescent arteriosclerosis; structure preserved; moderate contraction	Moderate chorioretinal arteriosclerosis with few hemorrhages and whitish foci	No papilledema; retina, arteriosclerosis; choroid, arteriosclerosis	Cardiac

From clinical data, the urea nitrogen is not the cause of the edema of the papilla, whitish spots or hemorrhages. On several occasions I have had laboratory reports showing a marked albuminuric neuroretinitis in patients with normal blood figures and proved kidney diseases.

This report embraces the study of eighteen cases, including mainly diseases of the kidney. Although this series of cases is too small for the establishment of any definite conclusions, still they may be of value to those who are interested in studying this very intricate problem. In each case one eye was removed from two to seven hours after death. The eyes were hardened in formaldehyd or Müller's fluid, embedded in celloidin, and then studied in serial sections, being stained with van Giesen's or Larkin's modification. Photomicrographs of each case are reproduced. Complete histories, including metabolic and laboratory reports, were studied in all the cases. I shall briefly mention only the salient factors in each case, which have an important bearing on the subject matter of this report.

REPORT OF CASES

Case 1 (Figs. 1 and 2).—B. S. (Prot. No. 3750), man, aged 52.

Microscopic Kidney Diagnosis.—Capillary sclerosis, contracted and practically structureless. Urea nitrogen, 133 mg. per hundred cubic centimers; blood pressure, 240; marked cardiac hypertrophy.

Ophthalmoscopic Findings.—Disk margin completely obliterated, covered with two fresh hemorrhages. Peripapillary edema, grayish whitish spots around papilla, several flamelike hemorrhages surround the papilla; a few glistening whitish spots encircling the macular, simulating the characteristic star figure. The veins are engorged and tortuous, and indicate venous compression at several points. Some arterial branches contracted, showing prominence of central light reflex.

Microscopic Eye Findings. — Optic nerve edematous; moderate arteriosclerosis of posterior ciliary and anterior ciliary arteries; papilla and surrounding area edematous. Retina: Nerve fiber layer and internuclear layers edematous, latter showing numerous vacuoles, mainly on temporal side of disk. Hemorrhages in all of its layers. Albuminous and serofibrinous exudates are seen in the nerve fiber layer, mainly in the macular area, producing a flat retinal detachment. Marked arteriosclerosis. Choroid: Moderate arteriosclerosis; a few capillaries are stenosed, indicating obliterating endarteritis; a few leukocytes and polymorphonuclears in veins, and a single area of perivascular round cell infiltration.

Case 3 (Fig. 4).—R. (Prot. No. 1259), Aged 50.

Microscopic Kidney Diagnosis.—Capillary sclerosis, contracted and structureless. Urea nitrogen, 48 mg. Blood pressure, 200; marked cardiac hypertrophy.

Ophthalmoscopic Findings.—Disk margin practically obliterated. Whitish circular, ill-defined foci around papilla; few circular and stellate hemorrhages in this area. Whitish foci; some glistening around the macula, simulating a stellate figure. Veins engorged and tortuous, and indented at places. Arteries apparently normal; a few secondary branches show prominence of the central light reflex.

Microscopic Eye Findings.—Septal tissue of the optic nerve hypertrophied. The central and posterior ciliary vessels are sclerosed. Papilla and surrounding retina moderately edematous. Retina: Cytoid bodies are present in the nerve fiber layer. The nerve fibers and supporting fibers show localized thickening and a cellular structure on surface. Subretinal exudate of cells and pigment, producing localized detachment of retina. Large vacuoles are present in the nuclear and internuclear layers near the papilla. Choroid: Veins dilated; moderate sclerosis and endarteritis of capillaries. A few foci of round cell infiltration are seen in the stroma.

Case 4 (Fig. 5).—S. W. (Prot. No. 4901), woman, aged 58.

Microscopic Kidney Diagnosis.—Capillary sclerosis, contracted and structureless. Urea nitrogen, 28 mg.; blood pressure 205; marked cardiac hypertrophy.

Ophthalmoscopic Findings.—Disk margin completely blurred; whitish foci and hemorrhages on disk and surrounding area. Macular area surrounded by whitish patches, pigment and a few circular hemorrhages. Veins engorged and tortuous and indented by arteries. Some of the secondary arterial branches contracted.

Microscopic Eye Findings.—Central arteries hypertrophied; papilla edematous and covered by several hemorrhages. Retina: Hemorrhages in all layers; serofibrinous exudate and vacuoles in the internuclear layer, near macula. Pigment layer broken in spots. The subretinal exudate contains cellular detritus, pigment and hemorrhages. Choroid: Slight increase in fibrous tissue; moderate arteriosclerosis of the larger vessels, and marked sclerosis of the capillaries, and obliterating endarteritis.

Case 6 (Fig. 7).—S. (Prot. No. 125), aged 32.

Microscopic Kidney Diagnosis.—End stage of glomerular nephritis; kidney structureless. Urea nitrogen, 105; blood pressure, 190; marked cardiac hypertrophy.

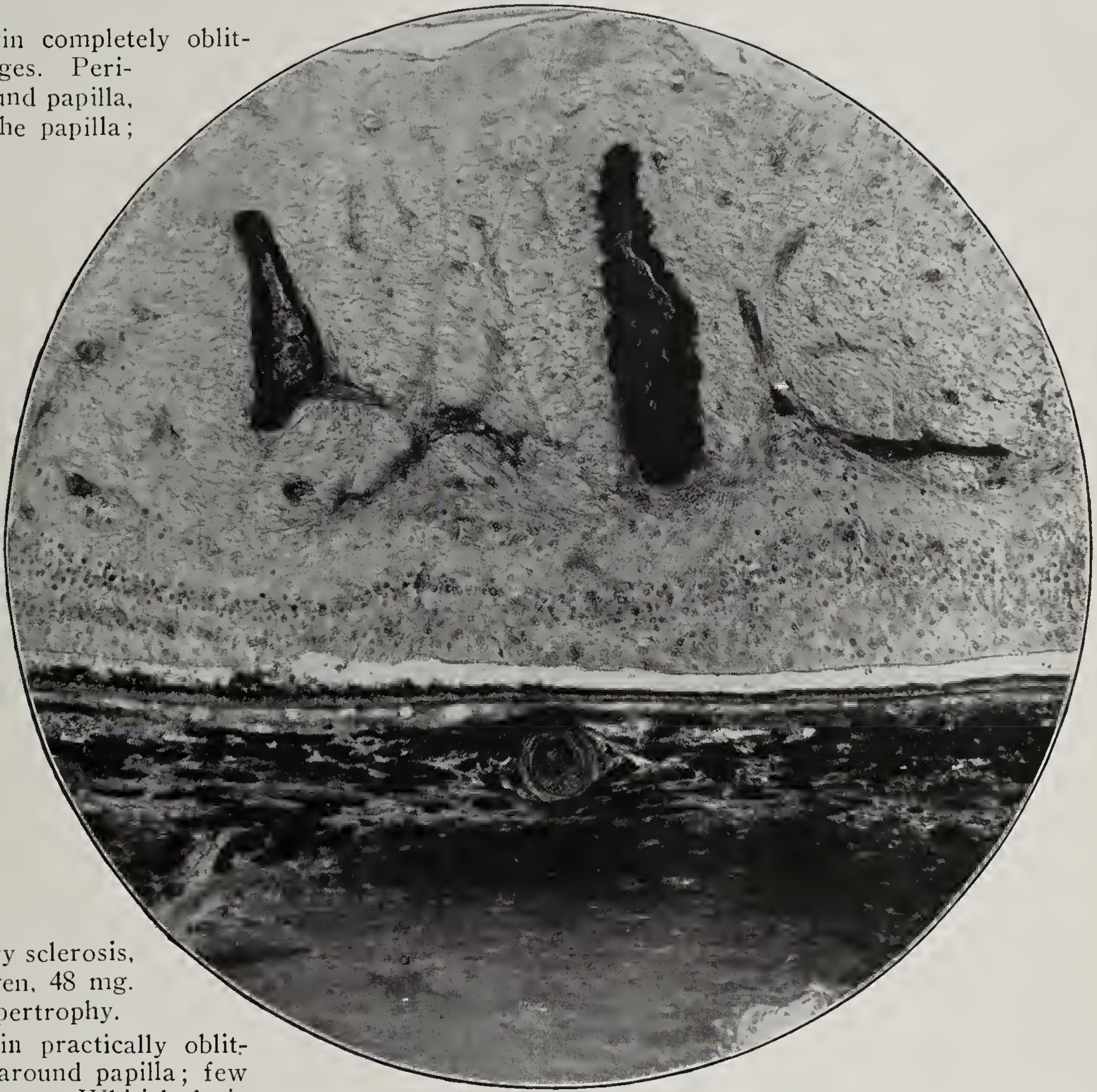

Fig. 5 (Case 4).—General capillary sclerosis with contracted and structureless kidney. Retina: edema and degeneration of all layers; supporting fibers thickened; sclerosis of vessels; pigment layer broken in places and heaping up of pigment. Choroid: one vessel shows practically complete stenosis of lumen, also increase of connective tissue.

Ophthalmoscopic Findings.—Disk margin normal; veins normal; smaller arterial branches contracted; a few whitish small dots with ill defined border around papilla; larger ones around the macula; two small hemorrhages above and near the disk. Later in the disease, glistening white dots appeared around the macula and the hemorrhages became absorbed.

Microscopic Eye Findings.—Central vessels normal; round cell infiltration on dural sheath; papilla normal. Retina: Few hemorrhages in all of its layers; cytoid bodies present; vacuoles and hemorrhages in the internuclear layer; pigment layer intact; moderate arteriosclerosis. Choroid: Veins contain polymorphonuclears and round cells; also few in stroma; capillaries show moderate arteriosclerosis.

Case 8 (Figs. 10 and 11).—F. S. (Prot. No. 3094), man, aged 36. Urea nitrogen, 240; blood pressure, 210; moderate cardiac hypertrophy.

Microscopic Kidney Diagnosis.—Capillary sclerosis; contracted, practically structureless.

Ophthalmoscopic Findings.—Disk normal; marked retinal arteriosclerosis of the smaller vessels.

Microscopic Eye Findings.—Central artery hypertrophied; papilla normal. Retina: Nerve fibers thickened; perivascular round cell infiltration around branch of central artery; slight edema of all its layers; hypertrophy of capillaries. Polymorphonuclears and round cells in the vessels. Choroid: Marked sclerosis of numerous capillaries and obliterating endarteritis; veins normal.

Case 18 (Fig. 23).—T. (Prot. No. 140), aged 58.

Microscopic Kidney Diagnosis.—Decrescent arteriosclerosis, going on to contraction. Structure preserved. Urea nitrogen, 13; blood pressure, 230; moderate cardiac hypertrophy.

Ophthalmoscopic Eye Findings.—Disk normal; few whitish spots around disk; two small hemorrhagic areas above disk; veins moderately engorged and tortuous, and show definite indentations at places where crossed by sclerosed arteries.

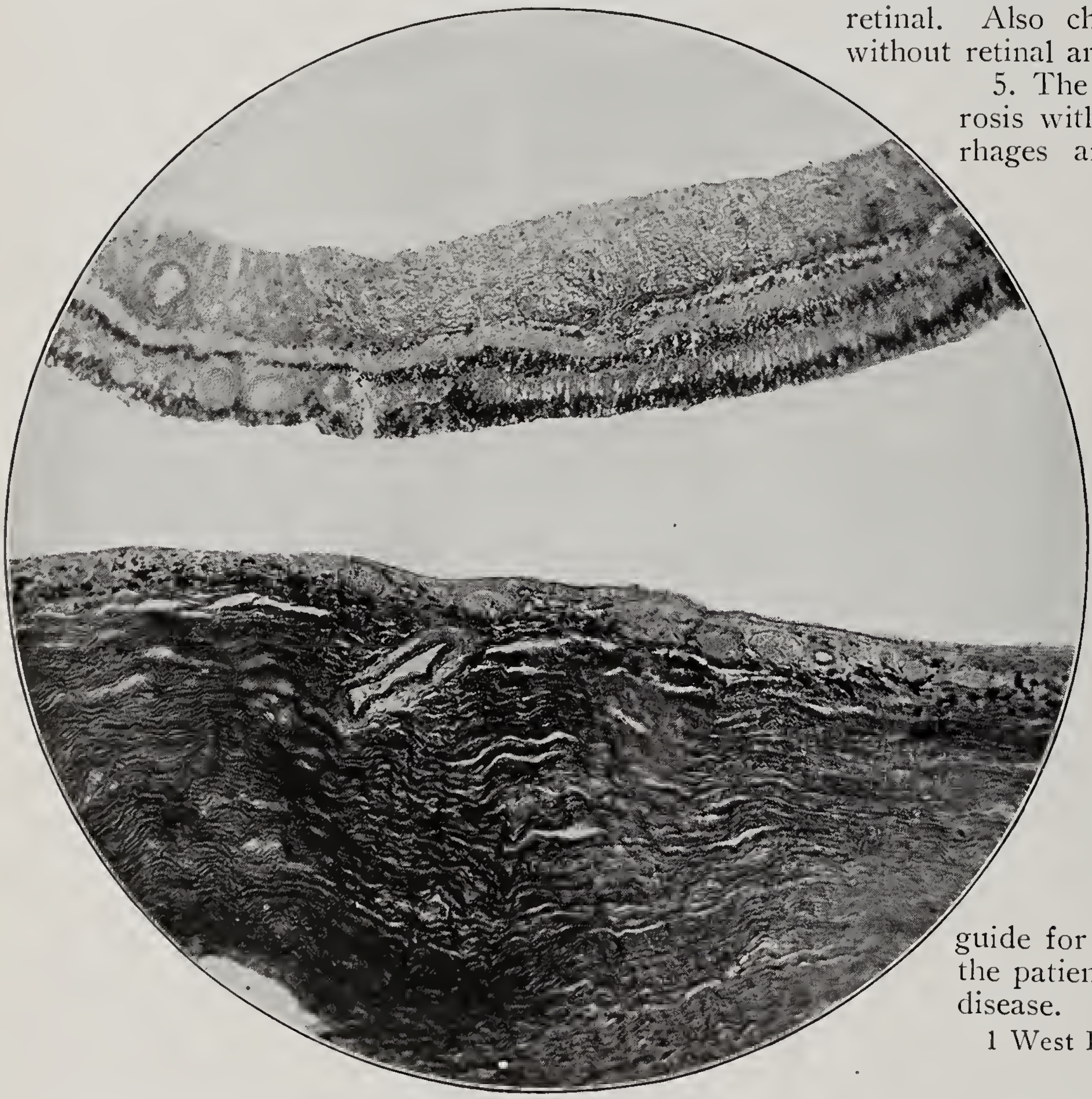

Fig. 7 (Case 6).—End stage of glomular nephritis. Retina: cytoid bodies; edema of nerve fiber and internuclear layers; thickening of nerve fibers; moderate arteriosclerosis. Choroid: moderate arteriosclerosis; few polymorphonuclears and round cells in vessels and stroma.

Microscopic Eye Findings.—The central artery shows arteriosclerosis; papilla normal; retinal arteries sclerosed. Choroid shows also marked sclerosis of capillaries, and obliterating endarteritis.

Varying degrees of arteriosclerosis were found in all of our microscopic eye and kidney material. There was no evidence of true inflammation in any of the microscopic eye material. The presence of the perivascular round cell infiltration, which occurred almost solely in the choroid, is, in my opinion, an evidence of replacement fibrosis.

CONCLUSIONS

1. A fundus diagnosis of chorioretinal arteriosclerosis, with or without edema of disk, hemorrhages, whitish foci, etc., is a more tenable term than albuminuric neuroretinitis, for the reason that a number of authorities concur in not finding any evidence of inflammation in microscopic studies of the fundus, in this type of cases. Also, albumin is not considered an etiologic factor, for obvious reasons.

2. The *basic* pathology for the fundus changes in this study is a primary chorioretinal arteriosclerosis. The edema of disk, hemorrhages, whitish foci, etc., result either solely from this pathology or in association with some unknown factor.

3. The degree of arteriosclerotic changes found in the microscopic eye material is not in direct proportion to the amount of pathologic change noted clinically in the fundus.

4. Ophthalmoscopically, no signs of retinal arterioclerosis were apparent in some cases, though microscopically evidence of arteriosclerosis was found. The choroidal arteriosclerosis was more marked than the retinal. Also choroidal arteriosclerosis was present without retinal arteriosclerosis.

5. The evidence of chorioretinal arteriosclerosis with definite edema of the disk, hemorrhages and whitish foci in the conditions designated by us as capillary sclerosis suggests that the kidney had already suffered marked contraction; on the other hand, the absence of the marked edema of the disk in these conditions is usually associated with a kidney which is the site of vascular changes alone.

6. In the decresent type of arteriosclerosis, the fundus frequently shows simply varying degrees of arteriosclerosis for a long period; in a small percentage of these cases, hemorrhages and glistening white spots appeared, rarely, edema of the disk.

7. At times it is difficult or impossible for the ophthalmologist to diagnose a kidney or arterial disease from the fundus changes without the cooperation of an internist.

8. An accurate knowledge of the fundus lesions provides a valuable guide for the diagnosis, prognosis and care of the patients suffering with kidney and arterial disease.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BENEDICT, BEHAN AND COHEN

Dr. George Slocum, Ann Arbor, Mich.: Dr. Behan's conclusion that hypertension is not the cause of either nephritis or the retinitis typically associated with nephritis is well supported by his careful analysis of his cases. The disturbances of the functional activities of the kidney are usually significant of the damage the kidney itself has suffered, but the associated retinal changes are not always an index of the extent of the injury to the kidney structures, nor do they indicate that the kidney lesions are the direct cause of the retinal lesions. That the etiology of the kidney disease is mainly the cause of the associated retinitis seems to be more than probable; nevertheless, a possible etiologic relation between the associated characteristic retinitis and the nitrogen retention and toxemia of advanced nephritis cannot be denied absolutely. The belief that the optic neuritis or neuroretinitis seen in nephritis is due to interference with the outflow of lymph or blood and generally dependent on increased intracranial pressure is a negation of the idea that the retinal changes of nephritis are due to the cause of the kidney disease. That papilledema is a result of increased intracranial pressure has been proved by Parker; but, recalling the many types and varieties of edema and swelling seen in other portions of the body, one may hesitate to accept the theory that all cases of swelling of the optic disk in nephritis are due to increased intracranial tension. I am, therefore, fully in accord with Dr. Behan's third conclusion, that the basic cause of the changes in the retina seen in nephritis are due to some injurious substance in the blood stream. My study of this problem showed that the changes in the fundus vary not only with the type of the disease, but in different stages of the same type. The early changes are not typical, although they may be suggestive. Cases presenting in both eyes edema, distinct vascular involvement, inflammatory appearance of the disks, recent hemorrhages and yellowish white spots, the remains of old hemorrhages, are very likely cases of nephritis. When advanced vascular changes, more marked inflammatory symptoms, hemorrhages and macular exudates are found in both eyes, a diagnosis of parenchymatous or mixed nephritis with a grave prognosis may be expected. When vascular changes of a sclerotic type predominate, the edema and inflammatory symptoms are less marked, hemorrhages are smaller and linear or lanceolate in form, often whitish dots are present in the macula, and there is a peculiar loss of macular detail. General examination frequently reveals high blood pressure, little or no albumin in the urine, fairly good elimination—chronic interstitial or vascular nephritis. Macular exudates having a radiating arrangement indicate a relatively late stage of parenchymatous nephritis. When the two types are present in the same eye, the cases are difficult to tabulate and classify. The kidney lesions are often of so mixed a variety that the pathologist cannot easily say to which class they belong. Nephritis and albuminuria are general terms; "albuminuric retinitis" emphasizes a variable and inconstant symptom of nephritis; the expression "the fundus changes seen in nephritis" is preferable. All cases of nephritis are believed to be directly or indirectly toxic or infectious in origin. If the toxic agent first causes vascular disease, interstitial nephritis is liable to develop, and the appearance of the fundus is more like that of hypertension. If, later, toxic agents attack the parenchyma, the fundus may present retinal changes of parenchymatous nephritis. If the toxic agent first attacks the parenchyma, the fundus changes are more likely to be of the type so often found associated with chronic parenchymatous nephritis. If the toxic agent attacks the retina alone, monocular lesions, closely simulating the retinitis of nephritis, may be found. It is only when the cases are studied in relation to their etiology, the type of the pathologic changes present, and the stage of the disease, that a definite relation appears between the fundus changes seen in the different stages and types of nephritis and the pathologic changes taking place in the kidneys.

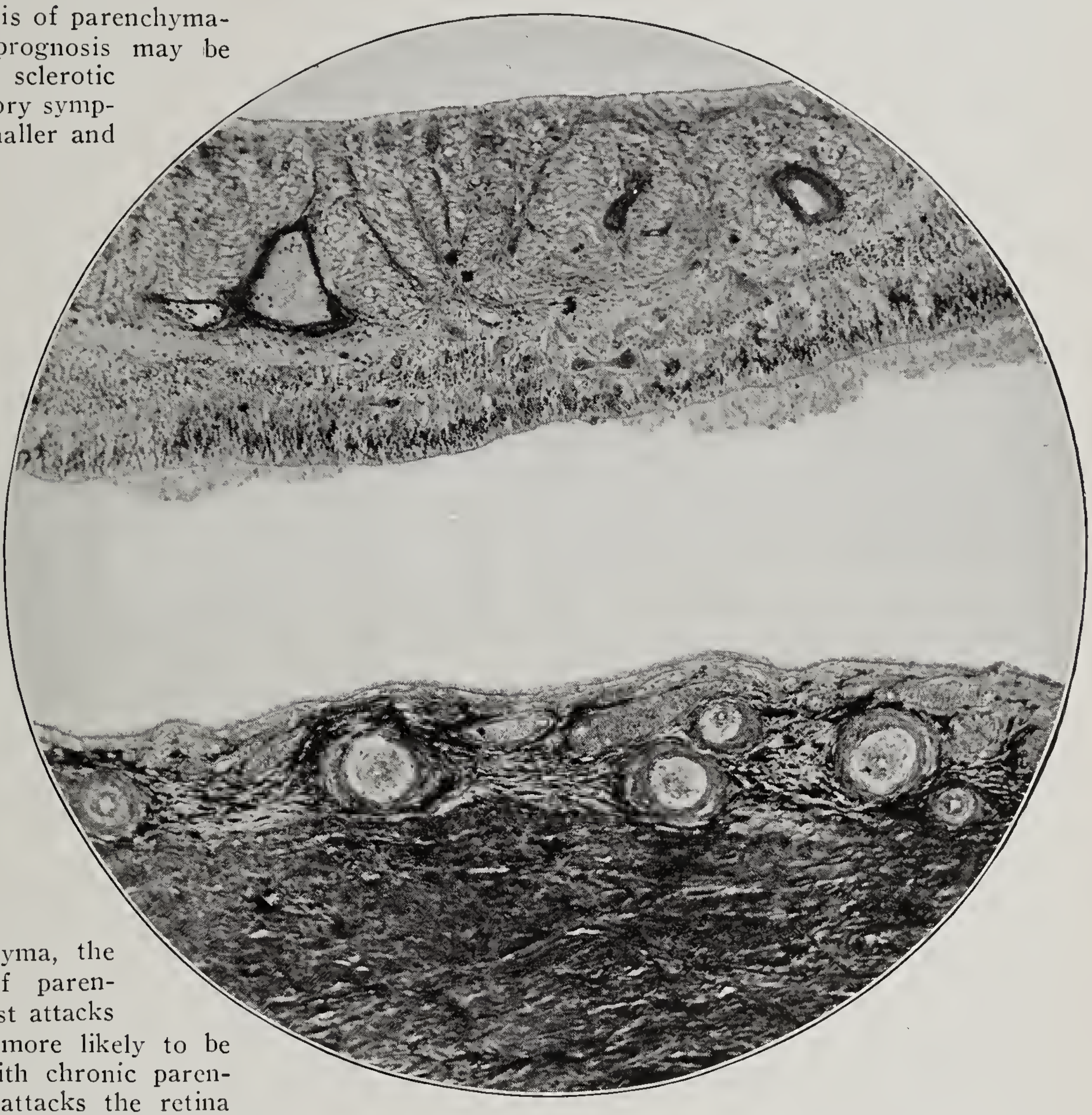

Fig. 10 (Case 8).—General capillary sclerosis with contracted and practically structureless kidney. Retina: all layers edematous; supporting fibers thickened; sclerosis of vessels, and perivascular round cell infiltration. Choroid: vascular walls thickened; one vessel shows complete obliteration of lumen.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: Dr. Cohen's findings bear out the generally accepted theory that so-called albuminuric retinitis is a local manifestation of a general arteriosclerosis. Late investigation of Bright's disease does not show anything contrary to the theory that chronic nephritis should be considered a disease of the cardiovascular system. There is no clearly defined demarcation of the so-called types of chronic nephritis for all forms are a diffuse process involving epithelial, interstitial and glomerular tissue. Although there may be a variation in the ophthalmoscopic picture presented in any of the so-called types of chronic nephritis, every case is the effect of toxic substances in the blood which are brought into intimate contact with the vascular system of the fundus of the eye and induce endovascular and parenchymatous changes in the choroid and retina. The destructive effect of circulating poisons that act on the vessels of the kidneys and retina need not be ascribed to "selective action," but to the anatomic fact that both structures are supplied by terminal vessels, and the evils of obstructed circulation cannot be averted by collaterals. The fundus alterations are very largely a question of degree or stage of progress rather than a question of destructive type of retinal alteration to conform to a standard form of kidney pathology. While fundus lesions may occur in any form of nephritis, they are more frequent in chronic nephritis. The lesions generally are confined to the retina, although there may be involvement of the choroid—a diffuse chorioretinitis. The fact that no pathologic change may be noted in the fundus, whereas the microscopic material shows arteriosclerosis change, merely indicates a difference in the degree of resistance in the vascular walls. The exudation and hemorrhage that occur are not the result of obstruction in the vessels, but of a weakening of the walls by the presence of poisonous substances in the blood. Dr. Cohen's conclusions that edema of the disk, hemorrhage and whitish foci in the retina suggest that the kidney already has suffered marked contraction would seem to be conclusive, and yet similar fundus lesions occur in acute nephritis accompanied by vascular degeneration from some toxic substance in the blood stream and not accompanied by marked contraction of kidney structure. On the contrary, edema, hemorrhage and exudates need not necessarily indicate that there is no contraction of kidney structure. We are dealing with disease of the cardiovascular system, and the fundus alterations are merely an evidence of a toxin in the blood stream, the degree depending on the character and virulence of the toxin and the resisting power of the tissues. The chorioretinitis of pregnancy often shows proportionately more disturbances in the eyes than in the kidneys; and even though permanent damage to vision may result, the mortality from this type of vasculorenal disturbance is less than in any other form of nephritis. Similarly, a comparatively insignificant ophthalmoscopic picture may accompany extensive kidney involvement associated with marked myocardial disease. The term albuminuric retinitis is a misnomer. The term nephritic retinitis is more appropriate; or, because these eye manifestations are a part of a general arteriosclerosis a better term would be arteriosclerotic retinitis. I concur that at times it is difficult or impossible to diagnose a kidney or arterial disease from the fundus changes without the cooperation of an internist. Numerous writers have mentioned the similarity of appearances of nephritic retinitis to the retinitis of syphilis and to choked disks from intracranial lesions. Therefore, in making a differential diagnosis, the fundus lesions must be considered in connection with all other evidence obtainable. In fact, the ophthalmologist is justified in always calling to his aid a competent internist not only to determine the etiologic factors and the extent of the disease process, but to apply remedial measures more intelligently.

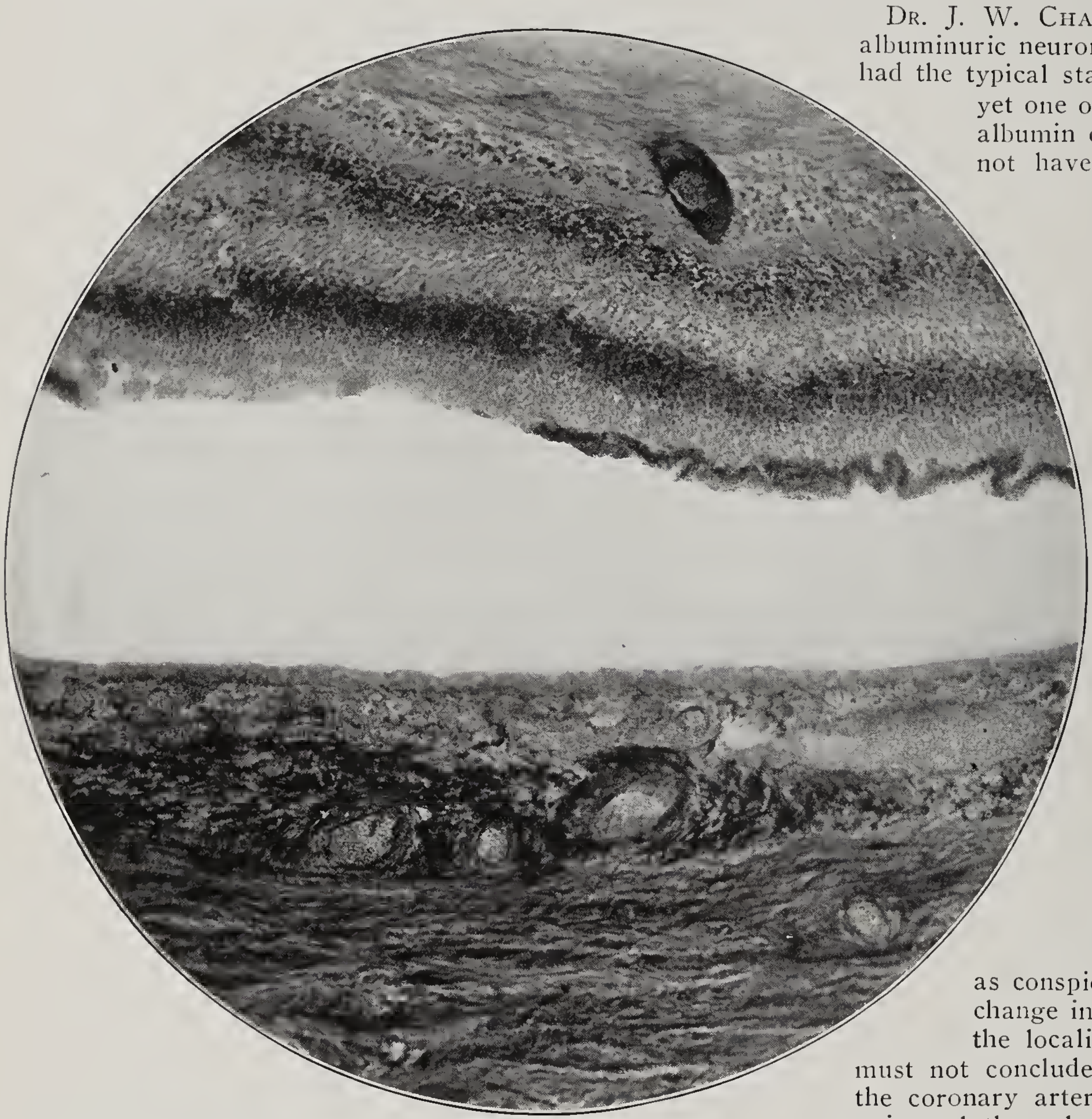

Fig. 23 (Case 18). -Decrescent arteriosclerosis, going on to contraction of kidney. Retina: moderate sclerosis of vessel walls. Choroid: moderate sclerosis of vessel walls.

Dr. Allen Greenwood, Boston: The subject of albuminuric retinitis, or retinitis of arteriosclerosis, is an extremely complex one. I have ceased to use the term "retinitis." I prefer to use "fundic changes." Dr. Benedict has described clearly those cases of hypertension in which the fundus picture is suggestive of nephritis, and yet the most careful examination by the internist shows no evidence of kidney disease. I think we all believe, however, that all cases of hypertension of any kind are due to some vascular changes produced by some abnormal condition in the body, or of body metabolism. In some cases the fundus changes apparently are not due to arteriosclerosis. I refer particularly to cases of trench nephritis in which I never found any change in the vascular system of the eye. They were cases of acute, transitory nephritis, in which the picture was similar to the so-called albuminuric retinitis of the edematous type, particularly the hemorrhages and swollen disks, which often disappeared after two or three days, leaving no sign of any fundus changes. They were cases of so-called albuminuric retinitis in which the conditions probably were not due to arteriosclerosis or to arterial changes. Practically all the changes in the eye, except the few instances mentioned, are due to some fibrosis of the vessels or to an actual arteriosclerosis. But we must take into consideration the possibilities of the toxic element as well as the arteriosclerotic element, the latter being, in my opinion, the result of some toxic influence. One reason I am giving up the use of the term "retinitis" is that the vessel lesions are not confined to the retina. The vessels of the choroid may be more sclerosed than those in the retina.

Dr. J. W. Charles, St. Louis: The very first case of albuminuric neuroretinitis I saw was in a girl, about 20, who had the typical star figure in both retinas, with papilledema, yet one of our best internists could never find either albumin or sugar in the urine and she certainly did not have vascular changes in the retinal vessels. Nothing else pathologic was ever found. She married, and had two children without any kidney disturbance. Is it not possible that this was a case of pure toxemia, perhaps from a disturbance of her endocrines? In 1918, a woman, aged 58, weighing 270 pounds and about 5 feet tall, came to me with loss of sight in one eye in which I found a vitreous hemorrhage, and in the other eye marked strapping with hemorrhages and slight papilledema. She was very short of breath, and her lips became blue frequently. Her blood pressure was: systolic, 260; diastolic, 170; pulse, 90; albumin and hyaline and granular casts in the urine, and a marked myocarditis. I put her to bed and fed her thyroid. Her weight now is 170 and her blood pressure is: systolic, 175; diastolic, 100; pulse, 70; heart slightly enlarged; no albumin or casts in the urine. She seems to be in excellent condition. She still takes thyroid.

Dr. W. H. Wilder, Chicago: It has long been recognized that there must be a cardiovascular element that is quite as conspicuous in the production of nephritis as the change in the kidney itself. But we must not forget the localized feature of the vascular changes. We must not conclude that, because there is arteriosclerosis of the coronary arteries or retinal vessels, vascular change is universal throughout the body. Frequently distinct arteriosclerotic changes are present in the fundus of one eye, the other being almost normal. Changes in the retinal vessels do not imply changes in the kidneys or in the coronary arteries. When we meet such conditions we should call to our aid the internist. However, we must be the first to note these peculiar changes, which may be present in the retina and not to any degree in the kidneys or heart. There is a disposition among many physicians to confuse arteriosclerosis with hypertension, not recognizing the variations that exist between them. The persons whose vessels are perfectly elastic can have a plus tension or increased blood pressure up to 220 with perfect safety, but if his vessels are brittle, there is an element of great danger. We must recognize also the inexactness of our methods of testing blood pressure. Our methods of testing tension are not definite, but they are far more correct than the methods that have been devised for testing blood pressure. Furthermore, the character of the person whose blood pressure we are taking must be considered. The blood pressure may not be the same on the two sides. I have noticed the pressure to be different in one arm from the other, even as much as 100 points. This bears out the statement that there may be localized vascular changes. Whether in these cases the arteriosclerosis is due to the toxic elements in the blood, or whether the element of hypertension plays the rôle assigned to it, or whether it is purely an atheromatous change, is the question to be answered.

Dr. S. Lewis Ziegler, Philadelphia: These diverse conditions seem to call for a more general and fundamental etiology, and I think our observation of the underlying sympathetic system is at fault. This would possibly explain somewhat the relation the endocrines bear to this problem. If there is disturbance of the biochemistry, then we are at fault in concluding that the toxic elements are circulating in the blood stream entirely. They are not. They are in the lymph stream. If we could appreciate the fact that there is a localized disturbance of the minute lymphatics of the system it will help us to consider this question from another standpoint. The localized changes in the blood vessel walls are also due to perverted chemistry of the lymphatics. In other words, the manifestation is under nervous control, and the localized disturbance is manifested by perverted chemistry in the lymph secretion. This is often selective in character, but this problem of selective action is a question we cannot solve at the present moment.

Dr. E. V. L. Brown, Chicago: Dr. Cohen has rendered a distinct service by showing conclusively that the vessels in the choroid are changed in the same way as those in the retina. Duke Carl Theodar showed this to be the case about thirty years ago, but there has never been such good substantiation of his findings, as far as I know. In this connection there is great need of demonstrating, as Dr. Cohen has done, the vessel sclerosis; but there should be a keen search for each of the three pathologic features found in the retina —serous exudation, coagulation areas and hemorrhages. Another matter is the polymorphonuclear leukocytosis noted in so many of the cases. So far as I know, Haab is the only one to have found this, and I have seen it denied repeatedly. I think that Dr. Cohen should have given this more than only passing consideration.

Dr. W. L. Benedict, Rochester, Minn.: It is manifestly impossible to discuss all the phases of nephritis and its possible connection with changes in the fundus. The essential point is to determine what fundus changes mean, and what we can say to the man who refers the patient. Localization of the sclerosis must be considered in the light of the factors which cause the arteriosclerosis. We do not speak of retinitis of hypertension. Hypertension gives this appearance of diseased blood vessels or changed blood vessels without the other changes that should be present to constitute the picture of retinitis. It is only when we speak of these changes with added features that we speak of retinitis of hypertension plus nephritis. Long continued hypertension will cause arteriosclerosis. We know that if high blood pressure continues for a long time there will be changes in the blood vessels, known as secondary arteriosclerosis. The three factors of atheroma, hypertension and toxemia will cause the change in the vessels of the retina, and there will be sclerotic changes which lead to edema, exudates and hemorrhage, associated with added insult to the kidney, and retention of products from renal decompensation.

Dr. Joseph L. Behan, Brooklyn: In the so-called albuminuric retinitis, nephritis, sclerosis of the retinal vessels or of the choroidal vessels is a constant finding. In about 75 per cent. of kidney conditions the fundus shows vascular sclerosis alone or with retinal change, yet albuminuric retinitis is found only in 25 per cent. of cases of nephritis of all types. But sclerosis is not the causative factor. Clinically, we see many cases of systemic sclerosis in which we are unable to demonstrate retinal sclerosis; many cases of retinal sclerosis without systemic sclerosis or hypertension or any form of retinal disease. The frequency of occurrence of vascular sclerosis in nephritis is not sufficient reason for claiming that it is a primary productive factor.

Dr. Martin Cohen, New York: The difficulty in analyzing the significance of pathologic changes in the fundus to kidney and arterial disease is due to the confusion of various conceptions of kidney and blood vessel disease. From my observations, the greatest proportion of pathologic changes in the fundus are seen in arterial types of kidney disease. According to Drs. Levy and Larkin, there are three distinct types of arterial kidneys: (1) chronic glomerular nephritis; (2) capillary sclerosis—(*a*) a pure type; (*b*) a complex type showing structural changes, and (3) decrescent arterial sclerosis. A study of the fundus in these three types shows arterial changes of varying degree. In fact, it is the characteristic and definite factor common to all. Edema and other pathologic changes are noted in a high percentage of the cases, but by no means in every section. It seems logical, therefore, to conclude that the basic pathologic factor is an arterial change. Though the basic pathologic factor is arterial, it is difficult to understand the exciting or underlying factor causing the pathologic changes. I am strongly impressed with the fact that it is not the nitrogen retention, the hypertension, the toxic elements, nor cardiac hypertrophy which are responsible for the pathologic change in the fundus. However, the exciting factor is dependent on the basic pathology. This idea immediately suggests the difficulty in explaining such fundus changes as are noted in eclampsia and in certain cases of acute nephritis. By acute nephritis I mean an incipient nephritis, not an acute exacerbation of a chronic nephritis. They, of course, cannot be explained on a basic arterial pathology, but they result in a localized edema consequent to a sudden edema of the brain following an acute hypertension which has as its basis an acute glomerular process. The same applies to eclampsia in which a sudden rise of blood pressure causes cerebral edema.

A FURTHER NOTE ON RAPID DILATATION IN THE RADICAL TREATMENT OF LACRIMONASAL DISEASE *

S. LEWIS ZIEGLER, M.D.
PHILADELPHIA

The self-evident fact that the ophthalmologic pendulum has begun to swing from the more complicated extirpation of the lacrimal sac toward the simpler measures of curetting or probing the duct has encouraged me to add a further word in favor of "rapid dilatation" as the procedure of choice in the treatment of lacrimonasal lesions, the technic of which I presented before this section in this city, twelve years ago.[1]

A survey of the various methods employed for the correction of lacrimal lesions reveals the fact that only three measures possess pronounced fields of usefulness: (1) extirpation of the lacrimal sac; (2) dacryocystorhinostomy, and (3) enlargement of the lumen of the duct by (*a*) curettage, (*b*) progressive probing, or (*c*) rapid dilatation.

THREE USEFUL MEASURES

1. Extirpation of the sac is a procedure that gives radical relief from a troublesome mucopurulent discharge when properly executed, but too often there are serious failures. The complications of carious bone and pocketed abscesses cannot always be guarded against, and infection of the external wound may leave a troublesome ectropion. Annoying sequelae in the form of persistent lacrimation or moist eczema of the skin may be quite as disturbing to the patient as the original lesion. Ablation of the palpebral portion of the lacrimal gland may relieve the epiphora, but again we are confronted with the danger of xerosis corneae.

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* Read before the Section on Ophthalmology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Ziegler, S. L.: The Radical Treatment of Lacrimonasal Disease by Rapid Dilatation and Allied Measures, J. A. M. A. **54**: 2026 (June 18) 1910.

2. Dacryocystorhinostomy, whether performed by Toti's [2] technic or by the later endonasal or window resections of West,[3] Yankauer,[4] Mosher,[5] and Wiener and Sauer,[6] has by no means solved the problem. They all face reclosure of the canal from granulation at the nasal end and recurrence of the lacrimation at the ocular end. Mosher frankly states that "every form of intranasal operation on the lacrimal sac and the nasal duct is only a temporary success unless supplemented with frequent probing or the prolonged wearing of a style." The logical inference from this observation would naturally be, Why not perform rapid dilation in the first instance and thus avoid the endonasal resection, the probing and the style? Furthermore, why seek a *lateral* drain when nature has provided a *vertical* drain which simply needs enlargement by dilatation?

A note of warning should be sounded against the deliberate making of a false passage from the lacrimal canal into the nasal chamber, whether by window resection or by the misguided lacrimal dilator. Such measures are not only unphysiologic, but also possess the fatal defect of permitting the regurgitation of septic sinus secretions, or the still greater danger of allowing the forced expulsion of these secretions into the ocular culdesac by the act of blowing the nose, thus creating a serious menace to the corneal integrity.

To illustrate: About thirty years ago, I treated two patients with overpatulous ducts and septic nasal secretions who suffered from corneal perforation and emptying of the anterior chamber whenever they breathed by mouth for two nights in succession. Nocturnal occlusion of the mouth by adhesive strips gave temporary relief, but it was only by plastic reclosure of the ducts and radical intranasal treatment that recovery was brought about. I have seen one of these patients recently and the result has been permanent; but the too open duct was disastrous while it lasted.

3. Enlargement of the lumen of the duct, whether by (*a*) curettage, (*b*) progressive probing or (*c*) rapid dilatation, is the only true method of restoring the physiologic function of the lacrimal canal. Irrigation is an "allied measure" that I have practically abandoned since the adoption of larger dilators, because natural drainage is superior.

(*a*) Curettage has had its greatest vogue among French ophthalmic surgeons, numerous methods being discussed by Lagrange and Valude.[7] They credit Mandelstamm with having devised this procedure, the technic of which Tartuferri so ably perfected. The procedures employed by de Wecker, Despagnet, Valude, Guaita and others are also described. But they use curettage only when there is proliferation in the lumen of the duct. I have utilized curettage along the same conservative lines. The small spoon-shaped curet with serrated edges that I have used for many years has proved most satisfactory, when its need was indicated.

Curettage has recently been revived in this country by Thompson,[8] who has adopted this technic as his sole procedure. I do not believe that such wholesale destruction of the lining walls of the lacrimonasal canal can prove other than disastrous unless followed by rapid dilatation, as Green [9] has done, since this larger lumen would prevent the raw surfaces from coming into contact and forming union. There is still another danger, that of proliferation of the wounded surfaces in the presence of irritating nasal secretions, thereby forming abundant granulomas over a much larger area, and this neoformation in turn leading toward stricture.

The theory that dacryocystitis is due to the presence of a foreign body in all cases is not tenable. Such an etiology might exceptionally occur, but it would seldom affect both eyes. Villard, in a thorough investigation of the subject last year, found only three examples of this. Irritating nasal secretions are the causative factors in the great majority of cases and that is why free drainage is so necessary, and why radical intranasal treatment should be rigidly carried out.

Benedict's [10] statement that ethmoiditis may complicate dacryocystitis should also be carefully weighed. The roentgen ray would reveal increased density, and vacuum suction may save a radical operation; especially if combined with atropin to inhibit the secretion and an ergot preparation to reduce the congestion.

Thompson's suggestion that an application of 25 per cent. iodin be made to the lining membrane has therapeutic value. I have always used 1 per cent. liquor formaldehydi. Wiener in his paper suggested the application of 40 per cent. silver nitrate, but I think he must mean 40 grains (2.3 gm.) to the ounce, since 180 grains (12 gm.) would prove to be a cauterant.

(*b*) Progressive probing by Bowman's probes up to a No. 6 and by Theobald's in the higher numbers has always seemed a farce to me, because of the wholly inadequate results. In the first place, the caliber to be obtained by a maximum of a No. 6 (1.5 mm.) is not sufficient for drainage and these smaller probes are more liable to lacerate the rugae or to create a false passage by puncturing the lining membrane, their use thus resulting in phlegmon, proliferation or atrophy. In the second place, progressive probing is too slow a process and the frequent repetition of passing probes soon creates an irritability of the tissues that is difficult to overcome. In the third place, if the capillarity of the duct has been sacrificed at the upper end by Bowman's operation and in the midlumen by Stilling's operation, or in its whole extent by prolonged use of the larger probes, you have practically all the elements of a false passage and the patient may suffer its consequences if irritating nasal secretions are expelled into the eye in blowing the nose.

This phase of the subject has been exhaustively discussed by Villard [11] in a monograph of 200 pages, the summary and conclusion of which may be briefly outlined:

1. Absolute value: curative.

(*a*) Congenital dacryocystitis.

(*b*) Simple epiphora.

2. Relative value: temporary relief but not curative.

(*a*) One half of cases fail from permanent obstruction or hypersecretion; if from the latter, the lacrimal gland should be removed.

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[2] Toti: Ophth. Rev., Oct., 1909.

[3] West: Tr. Am. Ophth. Soc., 1910, p. 654; Berl. klin. Wchnschr., 1913, No. 20.

[4] Yankauer: Laryngoscope, 1912, p. 1331.

[5] Mosher, H. P.: Abstract of Discussion on Chamberlain, W. B.: The Endonasal Operation on the Lacrimal Sac, J. A. M. A. **69**: 17 (July 17) 1917.

[6] Wiener, Meyer, and Sauer, W. E.: A New Operation for the Relief of Dacryocystitis Through the Nasal Route, J. A. M. A. **75**: 868 (Sept. 25) 1920.

[7] Lagrange and Valude: Encycl. franç. d'Ophth. **9**: 3, 1910.

[8] Thompson, N. R.: The Rational Etiology and Satisfactory Treatment of Dacryocystitis, J. A. M. A. **71**: 1727 (Nov. 23) 1918.

[9] Green, J., Jr.: Treatment of Dacryocystitis by Curettage (Thompson), Tr. Sect. Ophth. A. M. A., 1919, p. 354; Am. J. Ophth. **2**: 723 (Oct.) 1919.

[10] Benedict: Discussion on Wiener and Sauer (Footnote 6).

[11] Villard: Value of Catheterization in the Treatment of Lacrimal Affections, Bull. et mém. Soc. franç. d'opht., 1921.

(*b*) Slight and recent dacryocystitis; improve temporarily, but relapse.

3. Negative value: not cured or improved, absolute failure.

(*a*) Chronic dacryocystitis; suppurative or mucocele; ectasia and stenosis. Irrigation; local treatment to lacrimal mucosa; cauterization or extirpation of sac, not a positive cure. Physiologic operation to restore function should be devised.

(*b*) Acute dacryocystitis is neither cured nor ameliorated by probing.

(*c*) Tuberculous dacryocystitis should have systemic or climatic treatment. If necessary, the sac should be cauterized or extirpated.

(*d*) Finally, in fistula, extirpation, cauterization and curettage should be performed.

4. Conclusion: Catheterization (alone) is of value, but is overrated. Extirpation of the sac will hold first place until a better procedure is devised.

As this summarized report was based on information collated through a questionnaire, it should fairly well represent the present status of opinion among French ophthalmologists. It does not favorably impress one with the value of small probes.

(*c*) Rapid dilatation for the radical relief of lacrimal obstruction arising from dacryocystitis and its attendant disorders has always been my procedure of choice. This obstruction may be located in the canaliculus above, in the valve of Hasner below, or in the bony canal between; but in the majority of cases there is interstitial thickening of the lining membrane throughout the whole length of the canal. The occlusion below, however, may be increased by pressure of the inferior turbinate on the nasal mouth of the duct. Whether the narrowed lumen is caused by catarrhal inflammation, suppuration, interstitial thickening, cicatricial stricture, or disease of the bone itself, the formation and maintenance of a patulous duct is the one essential thing required to restore the impaired physiologic function. Whenever the duct regains its free drainage, practically all other lesions within its lumen recover spontaneously. The larger the lumen, therefore, the more effective the treatment.

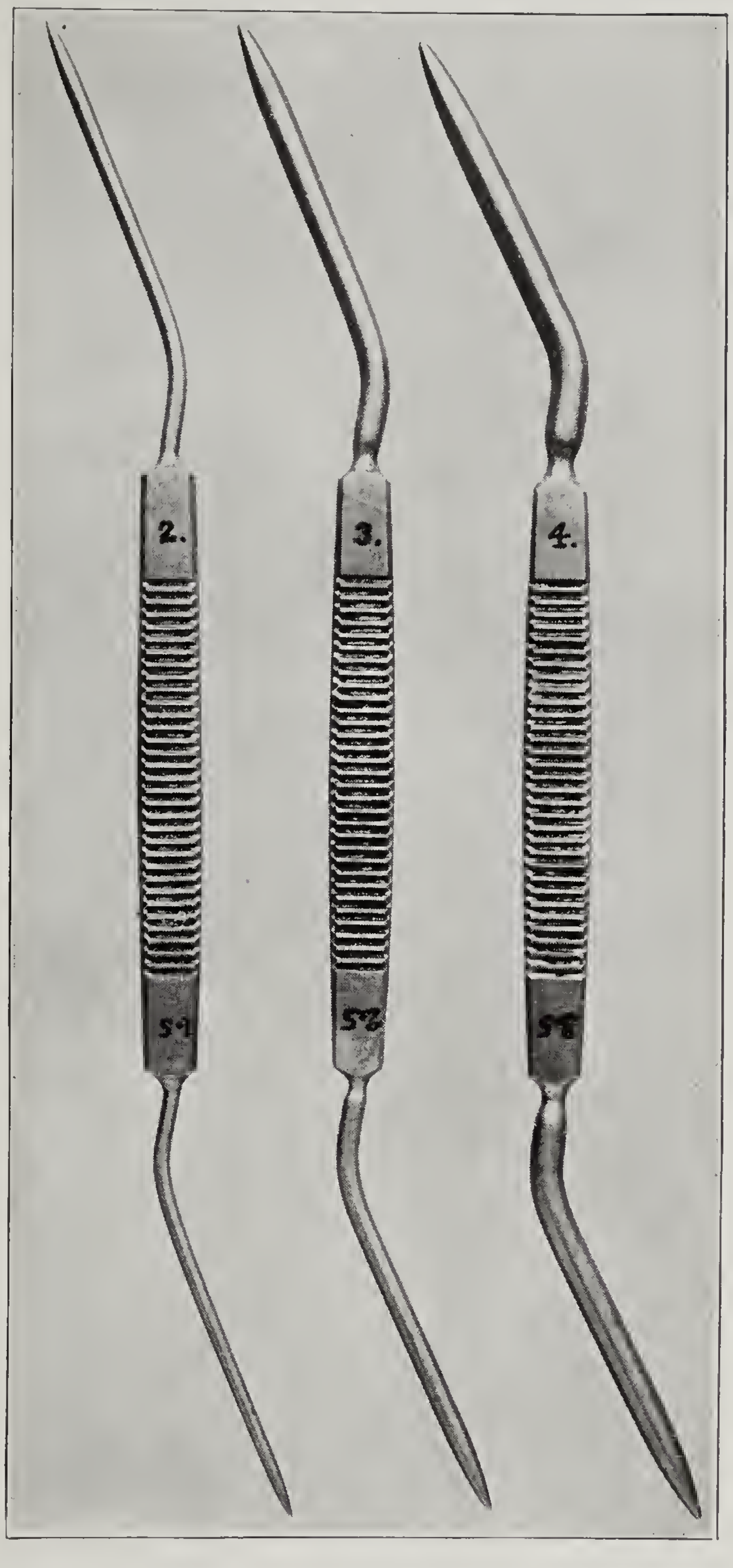
If, then, a large caliber is necessary, we should accomplish this by forcible dilatation, ad maximum; avoiding, however, incision of the punctum or canaliculus in order to preserve the capillarity of the duct. This should be done, preferably, at a single sitting and be classified as a definite operative procedure. If, however, for any reason whatsoever partial reclosure should occur, the dilatation should be repeated. My records show that less than 1 per cent. of my cases have required this repetition.

It is necessary, wherever possible, to preserve the capillarity of the duct in order to maintain downward siphonage of the tears and thus utilize nature's method of irrigation. This, in turn, prevents reversed capillarity with regurgitation of chemically irritating and septic sinus secretions from the floor of the nose.

IMPROVED LACRIMAL DILATOR

About ten years ago, I decided that my dilator would be more effective if I slightly increased its size in two dimensions. The length was increased 10 mm., making it 40 mm. long, so as to reach and stretch the valve of Hasner and press back the crowding inferior turbinate, and its caliber was increased by 1 mm., from 2.5 and 3 mm. to 3.5 and 4 mm. (from Nos. 10 and 12 to Nos. 14 and 16), so that a more liberal allowance for possible contraction might be made. The advantages of this change have been evident in many ways, chiefly in eliminating many of the "allied measures" that I discussed in my former paper: (1) curettage; (2) incision of punctum; (3) stricturotomy; (4) lead styles; (5) irrigation. I do not assert that I never resort to these measures now, but I do insist that with the attainment of the larger caliber I seldom have to use any of them.

In revising my model, I further decided to make up a set of dilators in three sizes, Nos. 6 and 8 (1.5 and 2 mm.), Nos. 10 and 12 (2.5 and 3 mm.) and Nos. 14 and 16 (3.5 and 4 mm.) that would cover every contingency of probing or rapid dilatation. I have discarded my needle probe and now use a No. 6 or 8 in the same way, since they correspond in size. As a rule, I have been using a No. 14 and occasionally a No. 16, to dilate in the majority of my cases. This is well within the conservative limits laid down by Theobald,[12] who stated that the dry bony canals examined by him aver-



Ziegler's lacrimal dilator: at left, No. 6 (1.5 mm.), No. 8 (2 mm.); in center, No. 10 (2.5 mm.), No. 12 (3 mm.); at right, No. 14 (3.5 mm.), No. 16 (4 mm.).

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[12] Theobald: Tr. Med. & Chir. Faculty of Maryland, 1877, p. 154.

aged 4.11 mm., while the moist mucoperiosteal canals in the cadaver calibrated from 4.47 mm. to 5.25 mm. One would naturally infer that the lacrimonasal canal in vivo is still more distensible; which I have found to be a fact.

Even in babies suffering from congenital atresia or dacryocystitis, I usually employ the No. 12 dilator, which passes easily because the bone is still flexible and the duct quite distensible. I have recently examined two patients, now young women, in whom dilatation was performed by me shortly after birth. The puncta had a normal appearance and the ducts were functioning properly.

The general shape of my dilator has not been changed. It is made of forged steel to avoid any danger of bending when force is applied, which is necessary when these larger sizes are used. Two sizes are joined together on a single bayonet handle, which prevents the eyebrow from interfering. The body of the dilator is a long cylinder, but the point is ovoid or bellied, with a sudden widening of the caliber just above the apex. This allows it to dilate the duct so rapidly that the tissues recede from the point and this in turn prevents the point from catching in the mucous lining of the canal. The body of the dilator never becomes wedged in the bony canal, as with the cones of Levis or Weber. It is not possible, therefore, to make a false passage, unless caries has developed a weak spot in the bone, and not then if the correct direction is maintained.

OPERATIVE TECHNIC

Anesthesia.—Cocain and epinephrin, or preferably butyn and procain, are employed. Nervous patients should have general anesthesia, as some pain will ensue.

First Stage.—The lower lid should be drawn down and out, with the left hand. Holding the small dilator (No. 6) vertically in the right hand the point is inserted in the punctum with slight force. A feeble "click" may be heard.

Second Stage.—Still holding the lid tense, the dilator is now lowered to horizontal and pushed slowly but firmly through the canaliculus until its point rests solidly against the bony wall of the sac. As it enters the sac, a second click may be heard.

Third Stage.—The small dilator (No. 6) is now withdrawn and the large dilator (No. 14) inserted by the same maneuvers used in the first and second stages, until firm bony resistance is felt.

Fourth Stage.—The lower lid is now released. The shaft of the dilator is raised to the vertical, half rotated on its long axis until the bayonet shoulder of No. 14 is turned backward. Grasping the shaft tightly and still hugging the bone, the point of the dilator describes a half curve back and down, and then slightly forward as it passes through the nasal duct into the nose. It is then grasped firmly and withdrawn. Both of these movements require considerable force.

As the lower tip of the dilator scrapes the nasal mucosa there may be nose bleed. There may also be a crackling sound from fracture of some thin bone, but it is unimportant, except that ecchymosis may follow. There may be a small rupture of the canal lining, which would permit emphysema if the patient should blow his nose; or edema if irrigation is attempted during the first week. Rupture of the punctum is frequent, but usually heals promptly.

AFTER-TREATMENT

The after-treatment includes simple flushing of the conjunctival culdesac with borated solution and epinephrin (1:16) together with a daily application of 1 grain (0.06 gm.) silver solution until the discharge ceases. Ecchymosis and emphysema can both be ignored.

The indications for rapid dilatation are those that I have described in my previous paper. I might add that when annoying epiphora follows extirpation of the sac, I have passed the dilator through the scar tissue, *secundum artem,* and made a new canal, in which a lead style was introduced in order to form an artificial but efficient tear duct, somewhat as in perforating the ear lobe for an earring.

CONCLUSION

As soon as lacrimonasal obstruction is diagnosed, rapid dilatation of the tear duct should be performed in order to secure a permanent patulous lumen with free drainage. The value of this procedure lies in the rapidity of dilatation, the avoidance of repeated probing and the retention of capillarity in the duct.

I cannot too strongly emphasize the nasal etiology of these cases and the consequent need for radical treatment of the nose. As sinus hypersecretion indicates hyperesthesia of the area over the septal tubercle, this should be carefully cauterized. All adhesions and other obstructions to free breathing should be removed. The nearer the nose approaches to normalcy, the less lacrimal treatment will be required.

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ABSTRACT OF DISCUSSION

DR. A. J. BEDELL, Albany, N. Y.: I have used this method constantly, but never on the lacrimal ducts of infants. The many advantages of this operation are well stated in the paper. Occasionally the emphysema and ecchymosis are so extreme that unless those in charge are told of the condition they are very likely to call one at the wrong time of day and worry unnecessarily. Some others, following rapid dilatation, return to the family physician or to some eye man who believes he can accelerate recovery by syringing, and I have seen some ill results from the effects of argyrol and protargol. The subject of nasal etiology I am sure is clinically too often forgotten. Many patients come because they have lacrimation or suppuration, and they feel that, if we do not immediately operate on the lacrimal sac or the lacrimal canal, we do not appreciate the disease. So I wish to emphasize the fact that often lacrimation and secondary sac infection are of nasal origin.

DR. JOHN A. DONOVAN, Butte, Mont.: With the operation and treatment advised I agree, but I have made false passages with the Ziegler probe, so I have returned to my original method, using Theobald's probes. A little cotton pad wet with 10 per cent cocain solution is applied; then the puncta are slightly dilated; 20 per cent. procain-epinephrin solution is injected; a No. 6 (preferably) Theobald probe, or may be only a No. 4, is passed. If anesthesia is not complete, more than 20 per cent. procain solution is injected very slowly into the sac; then, after waiting a while, one passes Nos. 8, 10 and 12 in rapid succession, increasing to 14 or even 16, till one feels a slight cracking of the bone. The use of No. 16 is very rarely necessary. The last one passed is left in place half an hour after it has first been pulled out about one-eighth inch to relieve pressure on the floor of the nose. I usually make a slit with the knife directed up and inward through the puncta; in fact, I always do this in chronic pus cases. I repeat the passage of a probe, a size smaller, at increasing intervals if the the first operation does not cure, and continue at intervals till the cure is permanent. I have never seen a very severe reaction from this except when the use of procain has to be repeated. All probes are passed within a period of not more than a few minutes.

Dr. George F. Keiper, Lafayette, Ind.: I can dilate these ducts considerably; but with the first cold, the tear ducts of some of these patients contract, and I am compelled to do the work all over again. I have resorted to all sorts of methods to keep them open, but yet they will stenose. I think that all patients with lacrimal duct stenosis should be warned that when they have the least sign of returning lacrimation they should return for further treatment. The point with reference to the nasal conditions present is well taken, for I am firmly of the belief that the origin of this trouble is in the nose, not in the eye end of the duct. I wish to direct further attention to the work of Shoeffer on the anatomy of the tear passages.

Dr. William Zentmayer, Philadelphia: It seems to me that so radical a procedure as Dr. Ziegler suggests should be limited to the most serious cases. I do not believe in giving a case of long standing chronic dacryocystitis any other treatment than extirpation of the sac. The mucous membrane in these cases is what the old surgeons used to call a "pyogenic" membrane. Simple drainage will not restore it to a normal condition. If one wishes to effect a cure, extirpation of the sac must be done. There is no need for the use of a dilator such as Dr. Ziegler uses in infants. The obstruction in most of these cases is caused by a fold of mucous membrane with retention of secretion. We disturb the anatomic relation when we use a probe of this size. A No. 1 probe will secure the same results. Indeed, simple syringing is sufficient in a majority of cases.

Dr. E. C. Ellett, Memphis, Tenn.: I would like to dissent from the use of this rapid dilatation method with a large probe in infants. The condition there is not at all analogous to the lacrimal obstruction in older persons. It is merely a failure of the detritus to disappear completely from the lacrimal canal. All one needs to do is to pass something through it once and it will be relieved. That is easily accomplished by a small probe.

Dr. W. R. Thompson, Fort Worth, Texas: Rapid dilatation in case of membranous or fibrous constriction above or below the bony canal in the absence of pus is scientific. Rapid dilatation for the cure of purulent dacryocystitis with stricture of any kind within the bony canal, unless by the passage of the probe the obstruction can be removed completely, is unscientific. My contention is that all obstructions or strictures within the bony canal should be removed and not dilated. Also all granulation in the sac or duct above and below the strictured area should be removed by curetting carefully and scrubbing before the application of tincture of iodin to the sac and duct. I cannot understand how much benefit could possibly come from the passage of any probe through an infected sac lined with granulation tissue and through a bony duct with a calcareous or cicatricial stricture. The fear that with the curet the lining of the duct is in eopardy is based on lack of consideration of the technic and of what takes place following the operation. To be sure, the lining, if such there be, overlying the strictured area is destroyed when the obstruction is removed with the curet, but it is also destroyed when a large probe is forced hrough a small duct and, in some instances, an area with no opening. With the curet in skilful hands the normal caliber of the bony duct can be restored without destroying ts lining save at the constricted point. This is accomplished by using first a very small curet, passing it gently step by tep until the obstruction is located. The manipulations are imited to this area, and when the opening grows too large o get further results the next larger size curet is used in he same manner, and so on until the lumen of the duct is estored. Not only can the gross pathologic condition be emoved by this method, but a distinct polish can be given by the guidance of the tactile sensations of the operator. There is but little swelling following this procedure because of the absence of soft tissue. A slight sanguineous discharge nto the nose for a day or two precedes the covering of this area by an extension of the lining membrane from above and below. I do not consider rapid dilatation indicated when the normal caliber has been obtained otherwise. In other words, I consider the duct as provided by nature sufficiently large to give ample drainage. I was told by an ophthalmologist that he had passed a moderate size probe through a lacrimal duct, following which sufficient hemorrhage into the orbit took place to destroy the sight. I can understand how such a complication could easily arise in any case of fracture, but it would not follow the proper use of the curet. I have yet to see a case of false passage or fracture follow its use.

Dr. Allen Greenwood, Boston: I wish to call your attention to the most admirable demonstration of Professor Schaefer before the International Congress on the development of the nasolacrimal duct. He showed that frequently the lower culdesac of the duct did not penetrate to the nasal cavity, and there would be a little membrane across. All that is needed in aiding the opening of the nasal lacrimal duct in children is to puncture that little membranous stricture at the bottom. I have never used rapid dilatation for any baby, infant or young child, as I have never found it necessary.

Dr. John Green, Jr., St. Louis: I believe that Dr. Thompson's method of curettage is beneficial in some cases. In my experience it has yielded more permanent results when supplemented by rapid dilatation. Rapid dilatation, or curettage supplemented by rapid dilatation, or curettage alone will yield good functional results in many cases. Let us not forget, however, that many lacrimal sacs are irremediably pathologic, and in such cases, even with drainage reestablished, it is a question whether pathogenic micro-organisms may not still make their way into the conjunctival sac. If one has to open the globe, it seems much safer not to trust to anything less than destruction or removal of the sac.

Dr. J. W. Charles, St. Louis: I agree with Dr. Ellett regarding rapid dilatation in infants. I believe that, as a rule, probe passing will be all that is necessary. One of my first patients was a boy of 19 who had what was supposed to be a congenital closure of the duct. I could get into the bony passage but not through it. After several days I used a dental burr and succeeded, by bearing down with all my strength, in crashing into the nose. After that I succeeded in passing a probe, and taught the patient to pass it, since he was going far away. He used a No. 6 Bowman probe until he recovered. In a year he wrote me that he was entirely well. I have since that time, in selected cases, taught patients to pass a probe in the same way. I would not advise it in every case.

Dr. S. Lewis Ziegler, Philadelphia: In regard to the criticisms made of radical or conservative treatment, I would characterize the procedure as "radical conservatism." Fear never conquers new territory. I have practiced this technic ever since I have practiced ophthalmology. I have not had complications, and I think that for this reason I am entitled to say it is a most conservative treatment. I may use the dilators in larger sizes than others do, but I think that that is the secret of my success. As to the question of dilating in infants, very often atresia complicates dacryocystitis, which is very serious. The anatomy is not disturbed. I simply stretch the canal, and Nature does the rest. There is no injury to that canal, and I do not feel any hesitation in using a No. 12 probe, although if you choose to use a smaller size, very well; but I know that the No. 12 is more successful. As to recovery from the purulent membrane, I think that it is comparable to the question of getting rid of the causation of sinus disturbance by cauterization of the septal tubercle. Many cases of sinus disturbance may be escaped by such intranasal treatment. I do not think that wholesale curettage is an advantage. There are a few cases in which it is required, but one can avoid curettage in many cases by increasing the size of the dilator from No. 12 to No. 14. In other words, Nature will take care of the lining mucosa of the duct, provided the underlying nasal lesion is corrected; but unless this is done, there will be a recurrence. The Theobald probe is the same size as my dilator. I do not see why it should not be used as well. The point of my dilator, I think, is better than Theobald's because it hangs free as it plows through the canal, while the tissues move back and away from the point. My dilator is cylindrical in form, and passes like cutting through cheese, while the old Lewis and Weber dilators are conical, and so block the bony canal. The same principle is observed in my knife needle. If the sides of the shank are parallel, one can make a sawing motion; but if they diverge, the shaft will stick in the cornea. I can recommend rapid dilatation as being the most satisfactory procedure in my surgical armamentarium.

DUODENAL DIVERTICULUM WITH ULCER ON OPPOSITE WALL

REPORT OF CASE *

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The literature concerning duodenal diverticulum has been so recently reviewed by E. C. Moore[1] that I will proceed at once with the history of the case.

REPORT OF CASE

History.—E. A. H., a white man, aged 31, married, a grain dealer, who entered the hospital, Feb. 16, 1922, complained chiefly of pain in the upper abdomen, "dull and dead" in character, coming irregularly and usually one hour after meals, but relieved by food and alkalis; also pain in the lower right quadrant. He stated that he suffered from constipation, headache, anorexia, insomnia, dizziness and nervousness, and had to take alkalis constantly. There was no family history of malignancy, tuberculosis or insanity. The mother, father, three brothers and three sisters were living and well. The patient used no alcoholic liquors or drugs. He smoked cigarets to excess. He had had the usual diseases of childhood, and influenza and pneumonia in 1918; he had suffered no injuries; the stomach symptoms first occurred in 1918, and he had been unable to work since. He was treated for this trouble by eight or ten physicians, and the gallbladder was removed without any improvement. The surgeon told him that no ulcer of the stomach could be found and that the appendix was normal at the time of operation.

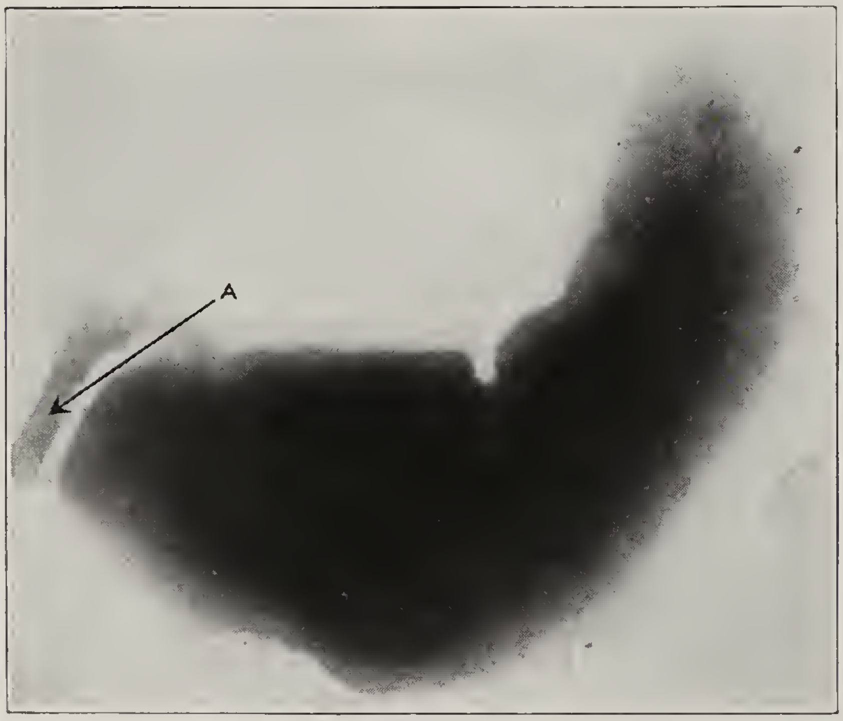

Fig. 1.—Prone position, exposure immediate: *A*, duodenal diverticulum.

Physical Examination.—The patient was ambulatory; the weight, 135 pounds (61 kg.); the height, 70¾ inches (180 cm.); he was apparently underweight; he had an intelligent appearance, with drawn expression. The head, neck and chest were normal. There was a 5-inch (12.5 cm.) cholecystectomy scar on the abdomen; there was marked tenderness over the right upper quadrant; splashing sounds were heard over the stomach; there was no rigidity and no palpable masses. Knee jerks were exaggerated; otherwise examination of the nervous system was negative. The blood pressure was: systolic, 128; diastolic, 78; pulse, 74. The gastro-enterology section reported that the patient had intermittent and aching pain under the xiphoid extending to the region of the gallbladder, usually coming on shortly after he lay down and worse when he lay on the left side, and then he had to lie on the back to get relief. The pain was relieved in four or five minutes by taking alkalis.

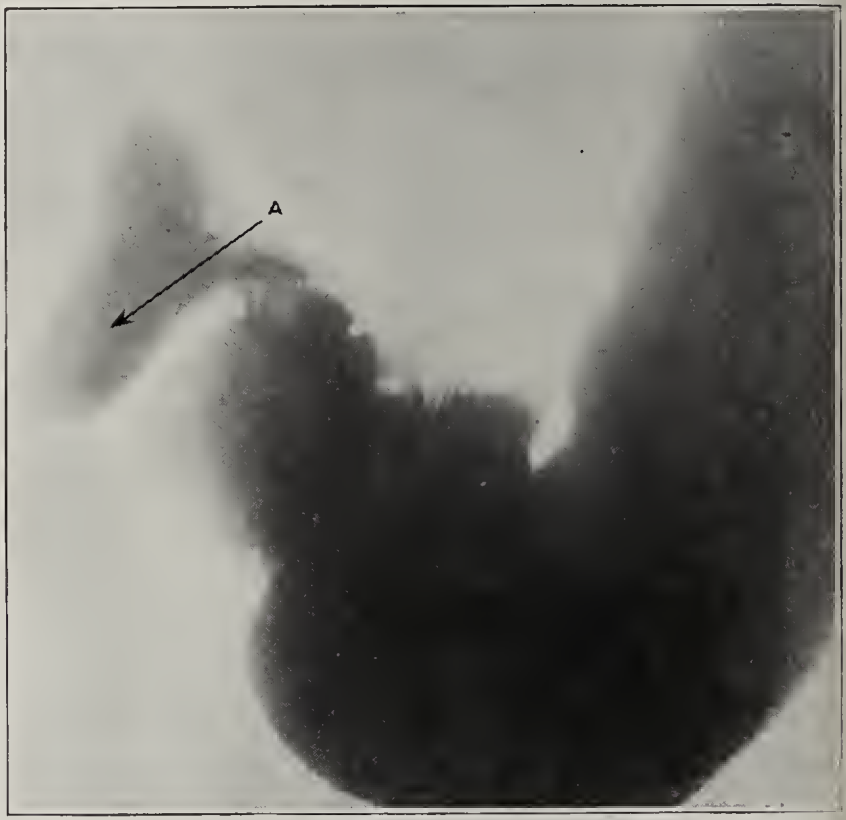

Fig. 2.—Appearance five minutes later: *A*, duodenal diverticulum.

Laboratory Reports.—Before entering the hospital, the patient had been examined by a physician at Omaha, who reported in December, 1921: "Gastric analysis (routine method): Quantity, 100 c.c.; total acidity, 35; free acidity, 20; loosely combined, 15; free hydrochloric acid, 10; no occult blood; no lactic acid. Microscopic: Few starch granules and yeast cells, occasional epithelial cells." An Omaha roentgenologist in December, 1921, reported "a rather large, slightly dilated stomach with rather marked increased peristaltic action, which empties rather slowly. At the end of the five-hour period practically one half of the gastric contents are retained within the stomach. The cecum and colon do not begin to fill at the end of five hours. The duodenal cap is missing at times and never normal; very nearly normal, however, at times. Cap may or may not have a pathologic condition. He has a slight, constant, prepyloric deformity at the upper portion of the stomach, just ahead of the pylorus. Roentgenographically, there is a pathologic condition of the upper right quadrant, probably prepyloric and possibly postpyloric from either within or without the gastric tract. At any rate, there is sufficient disturbance to interfere with gastric emptying."

At the hospital, the Wassermann reaction was negative. Examination of the stomach contents revealed: free hydrochloric acid, 50; combined, 12; total, 62; occult blood, negative; mucus, negative. Blood examination revealed: erythrocytes, 5,420,000; leukocytes, 9,800; hemoglobin, 95 per cent.; no parasites; small mononuclears, 19 per cent.; large mononuclears, 9 per cent.; eosinophils, 1 per cent.; neutrophils, 71 per cent. Examination of the feces was negative for pus, mucus, occult blood and parasites. The urine was normal.

Preoperative roentgen-ray examination of the chest revealed increased bronchial shadows in the left, upper pulmonary lobe. There were adhesions at the base of the left lung to the diaphragm. The stomach was moderately enlarged, somewhat elongated and slightly ptosed. There was increased gastric peristalsis. There was a small, constant, filling defect on the gastric lesser curvature near the pylorus. The stomach was much slower than normal in emptying time, about one fifth of a barium-buttermilk mixture being retained in the stomach seven hours after being taken. There was a long, constant, filling defect on the patient's right side of duodenal origin, when viewed directly from the front, as if an elongated duodenal ulcer on that side of duodenum, and a small, constant filling defect on the patient's left side of duodenal origin, showing a definite duodenal ulcer at that point. On "blocking off" of the duodenum by pressure of the left hand over the duodenojejunal junction and completely filling the duodenum by manual pressure of the right hand over the greater curvature of the stomach, these filling defects showed very plainly, and, when the patient was rotated so that his right side was next to the fluoroscopic screen and his duodenal origin was viewed laterally, a large diverticulum was seen to extend forward from the duodenal origin, and the filling defect first noticed on the patient's right side of duodenal origin was proved to be the overlapping shadow of this diverticulum. The duodenum curved directly backward from this point so that its descending portion was directly behind the diverticulum mentioned. A diagnosis was made of an anterior duodenal diverticulum about 7 cm. in length and about 2 cm. wide, and of duodenal ulcer on the upper left duodenal wall opposite the opening of the diverticulum. The appendix could not be filled at any time and was pathologically occluded.

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* From U. S. Veterans Hospital No. 35.

[1] Moore, E. C.: Duodenal Diverticula, Arch. Surg. **1**: 513 (Nov.) 1920

Operation.—February 27, under ether anesthesia, gastro-enterostomy, pyloroplasty and appendectomy were performed. The area of operation was cleansed with alcohol, ether and iodin. An upper right rectus incision was made through the skin, superficial fascia and rectus muscle. The abdomen was opened. Adhesions of the stomach, duodenum and colon were separated from the liver and the anterior abdominal wall. The posterior wall of the stomach was pushed through an opening made in the transverse mesocolon and sutured to its edge. One side of a Roosevelt clamp was applied to the posterior wall of the stomach, the other blade being applied to the jejunum about 4 inches (10 cm.) from the angle of Treitz. A three-row gastro-enterostomy was performed, chromic catgut being used as suture material. A hole was burned by the actual cautery through the base of a large duodenal ulcer, which was then invaginated, as was also the diverticulum of the duodenum. The cecum was pulled forward; the mesentery of the appendix was ligated and severed. The appendix was ligated, and removed by the actual cautery. The stump was invaginated by a double purse-string suture of catgut. The cecum was replaced. The peritoneum was closed by a running suture of plain No. 2, the muscle by plain No. 2, the sheath by chromic No. 2, and the skin by a running suture of linen.

Pathologic Report.—At some former operation this patient had the gallbladder removed. Following this, extensive adhesions were formed; the greater curvature of the stomach and the pylorus were bound to the chest wall, and the liver about 2 inches above its lower margin. There were vast adhesions between the omentum and colon on the anterior abdominal wall. A sharp kink was found in the duodenum 6 or 7 inches from the pyloric ring. A large indurated duodenal ulcer, which had evidently perforated at some previous time, was found about 1½ inches from the pyloric ring, on the duodenal side and the upper surface. Just opposite this ulcer, on the lower side of the duodenum, was a diverticulum, probably caused by the back-up in the duodenum due to the kink where it turned about the head of the pancreas. Photographs were made of this ulcer and pouch. The appendix was about 5 inches long, bound down at its lower end to the posterior abdominal wall, and contained an enterolith about the size of a small marble. This enterolith was extremely hard and was movable like a ball valve inside the appendix from its base to within 1 inch of its tip, where the appendix was acutely kinked.

Postoperative Roentgen-Ray Report.—The gastro-enterostomy opening was functioning well. The duodenum could be filled through the pylorus by moderate pressure accompanied by proper massage of the stomach; its duodenal origin was somewhat irregular, but normal in size. There was no appearance of any duodenal diverticulum at this examination. The stomach was somewhat slower than normal in emptying time. The appendix was not visualized at any time.

COMMENT

The patient's symptoms were immediately relieved by the operation, although it is too soon to forecast the ultimate result.

Next to diverticula of the stomach, those of the duodenum are the rarest; since the advent of the roentgen ray, however, this is now being reported rather frequently, although not so regularly found at operation. I have been able to find not more than three or four cases in which an ulcer of the duodenum was located opposite the mouth of the diverticulum, as in our case.

The staff roentgenologist believes that the reason the diverticulum in this case was not discovered in previous examinations was that the "blocking method," with the patient turned laterally, was not used.

I believe that the pain in this case was due to the filling of the diverticulum, and not to the duodenal ulcer, because under the fluoroscope the characteristic pain was brought on when the diverticulum was filled by manual pressure; it is possible, of course, that the barium-buttermilk stream first irritated the ulcer before being diverted into the diverticulum.

The ulcer was large, hard and indurated, and very probably existed at the time of the former operation; but it is difficult to conceive of the large enterolith forming in two years.

All coats of the duodenum were involved, and I believe it was a true wide-mouthed diverticulum of the duodenal vestibule, and not an ulcer diverticulum as described by Judd.

Congenital diverticula are most frequently on the pancreatic side of the duodenum and only a short distance from the pylorus, as in this case. Yet I am not prepared to say whether it was congenital or acquired.

Duodenal diverticula frequently cause gallbladder symptoms, and it is not surprising that a cholecystectomy was previously performed on this patient.

It is surprising, however, that the roentgen ray did not disclose the marked malposition of the stomach as found at operation. I believe that this malposition was the cause of the suspected ulceration of the lesser curvature.

How Long Does a Mosquito Retain Malaria Parasites?—In a preliminary study to determine the maximum length of time the plasmodium of malaria remains viable in infected mosquitoes, Bruce Mayne, U. S. Public Health Service, found the plasmodium in the salivary glands of five specimens of *A. punctipennis*, 68, 70, 71, 83 and 92 days, respectively, after infection. The mosquitoes had bitten a crescent carrier on a single occasion, and were kept at room temperature for 6 days, then kept in a container registering from 44 to 83 F. for the remainder of the experiment. Three mosquitoes, which were kept under conditions identical with the five just mentioned, failed to convey malaria plasmodia through biting 61, 66 and 67 days, after infection; but plasmodia proved viable by inoculation into a human host by the bite of a mosquito infected 55 days previous. The longest period of survival of uninfected anopheles kept under artificial conditions on a diet of split dates and water was 231 days. Eighty-five specimens of *A. punctipennis* kept without blood lived an average of 90.4 days. A single specimen of *Culex territans* lived 265 days at room temperature on a diet of fruit juices.

Clinical Notes, Suggestions, and New Instruments

THE CONTROL OF EARACHE THROUGH THE NASAL (SPHENOPALATINE, MECKEL'S) GANGLION *

Greenfield Sluder, M.D., St. Louis

The relief of earache through or by means of the nasal ganglion apparently falls into the category of those cases of ocular, mandibular and glossal pain that can be relieved in this way. No anatomic facts can be offered in explanation of these phenomena.

Earache is not an uncommon feature in the syndrome of nasal ganglion neuralgia, and may be an isolated manifestation. In these cases, examination of the ear is negative in every way. This fact has been mentioned often in the course of the description of that syndrome.[1]

Recently I have discovered that the pain of inflammatory disorders of the middle ear in patients who were not sufferers from nasal ganglion neuralgia could be stopped by cocainization of the nasal ganglion. To what extent or with what frequency this may prove true, I do not know at present. It appears, however, to be a phenomenon worthy of investigation. Its therapeutic value would seem obvious, were it a fact of reasonable frequency.

I have had nine cases of earache accompanied by more or less congestion of membrana tympani, one with obliteration of the landmarks without pouting, two middle ear abscesses with pouting, one general reddening of the membrane with tinnitus, and the others with congestion of the handle of the malleus (eustachian tube cases) that were relieved by cocainization of the nasal ganglion. In one of the abscesses, the relief was for only a few minutes. In this case, there was reason to think that only a very small part of the cocain was absorbed. In the other case, the relief was complete, but it did not at all prevent the pain of paracentesis. In the case of reddened membrane with tinnitus, the relief of pain and tinnitus was complete with one application, and they did not return. This was true of the case with the obliterated landmarks of the membrane, and the cases of slight irritation of the eustachian tube.

Goldschmidt-Osmund[2] has recorded some most interesting observations on headache relative to the sphenoid and nasal ganglion, one of which is the categorical statement that all syphilitic headache is controllable by cocainization of these parts. This is another phenomenon to be added to those without anatomic basis as explanation.

Two most interesting observations in this category have been made very recently. Bryan[3] reported a case in a man, aged 35, of herpes zoster of the rami zygomatici temporales and rami zygomatici facialis branches of the maxillary and nervus supra-orbitalis and nervus frontales branches of the ophthalmic nerve, with pain in the distribution of these nerves and deep in the eyeball. The patient said he thought his eye "would burst." The pain in the forehead was controlled by the application of one drop of saturated solution of cocain hydrochlorid through the ostium of the sphenoid. The pain in the eye was uninfluenced by this. Application to the sphenopalatine foramen region relieved the pain in the eye. The pain in the temple remained, explicable probably because the application to the sphenopalatine foramen anesthetized only the vidian side of the ganglion and did not influence the maxillary nerve, which coincides with the argument that the control of the severe pain described as inside the eye by cocainization of the nasal ganglion is accomplished through or by means of the sympathetic nerves.

The second observation was reported by Guggenheim,[4] who records a case of a woman, aged 75, who had an acute, intense earache with throbbing, accompanied by great pain in the mastoid and tragus and upper part of the external canal, and marked tenderness to touch. The drum and canal were normal on inspection. One-half grain of codein every three hours failed to relieve the pain. No rhinitis or paranasal cell disease was recognizable. Application of 5 per cent. solution of cocain hydrochlorid to the nasal ganglion region stopped all pain, and the tenderness to touch in the canal and tragus. The application was made twice, after which the pain did not return.

3542 Washington Avenue.

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* Read before the American Laryngological Association, May 3, 1922.

[1] Sluder, Greenfield: Headaches and Eye Disorders of Nasal Origin, St. Louis, C. V. Mosby Company, 1918.

[2] Goldschmidt-Osmund, Bruno: Arch. f. Laryngol., 1921, No. 34.

[3] Bryan, W. M. C.: Paper read before Laryngological Section of St. Louis Medical Society, April 20, 1922.

[4] Guggenheim, L. K.: Paper read before Laryngological Section of St. Louis Medical Society, April 20, 1922.

APPLICATION OF MALLORY'S CONNECTIVE TISSUE STAIN TO FORMALDEHYD-PRESERVED TISSUES *

Leslie B. Arey, Ph.D., Chicago

No differential stain is more fundamentally important than Mallory's acid fuchsin anilin blue orange G method, which differentiates brilliantly collagenous fibers and reticulum from muscle fibers, neuroglia and other elements. Its use, however, is limited to tissues which have been fixed in Zenker's solution, although somewhat inferior results are obtained after mercuric chlorid preservation. As most routine clinical material is received in formaldehyd solution, this fixation requirement seriously restricts the usefulness of the method; to be sure, Mallory originally gave a modification for formaldehyd material which was said to produce fair results, although best suited to the central nervous system; this involves prolonged treatment with picric acid, followed by ammonium bichromate and incubation; it is not mentioned in his "Pathological Technique."

Several years ago it became necessary for me to differentiate muscle and connective tissue in material obtained from sources when formaldehyd preservation only was expedient. By good fortune I learned from Prof. Carl G. Hartman of the University of Texas that he had used Mallory's stain successfully under like conditions by first mordanting the tissue in chromic acid. Acting on this suggestion, a procedure has been developed which gives reliable and brilliant results, in most cases little if any inferior to those obtained after Zenker fixation.

The several steps are:

1. Preserve in formaldehyd solution.
2. Prepare sections in the ordinary manner.
3. Mordant sections in 1 per cent. aqueous chromic acid from forty-eight to seventy-two hours.
4. Wash in water.
5. Stain in 0.5 per cent. aqueous acid fuchsin from five to twenty minutes.
6. Wash quickly in water.
7. Fix stain in 1 per cent. aqueous phosphomolybdic acid from one to five minutes.
8. Wash in water two minutes.
9. Counterstain in the anilin blue orange G mixture from five to twenty minutes; the sections should be somewhat overstained. The composition of this solution is:

Anilin blue (Grübler; water soluble).......	0.5 gm.
Orange G (Grübler)......................	2.0 gm.
Oxalic acid	2.0 gm.
Water	100.0 c.c.

10. Dehydrate rapidly. The excess of anilin blue is removed largely in the lower alcohols; the degree of differentiation should be controlled by microscopic inspection.
11. Clear and mount.

The minimal period for mordanting in chromic acid is about forty-eight hours; shorter treatment usually gives feeble and unsatisfactory differentiation. The tissue may be mordanted in toto following fixation, but this is not recommended, as a somewhat longer application of chromic acid is required and the tissue becomes exceedingly hard and difficult to section. A 0.5 per cent. solution of acid fuchsin is preferable to the 0.1 per cent. in the original formula. Attempts to develop a similar modification adapted to alcoholic specimens have failed completely.

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* From the Anatomical Laboratory, Northwestern University Medical School.

PROCEEDINGS OF THE ST. LOUIS SESSION

MINUTES OF THE SEVENTY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ST. LOUIS, MAY 22-26, 1922

(*Continued from page 1644*)

HOUSE OF DELEGATES

Second Meeting—Tuesday Morning, May 23

The House of Delegates met at 9:30 a. m., and was called to order by the Speaker.

Dr. J. C. Rockafellow, Iowa, Chairman, presented a supplementary report of the Committee on Credentials, stating that since the preliminary report was made, there had been sixty-two men admitted as delegates, whose credentials were found correct, making a total of 122 delegates. The committee recommended that these men be seated as delegates.

Dr. Thomas S. Cullen, Maryland, moved that the report be adopted. Seconded and carried.

Roll call being the next order, the Secretary stated that he had in his hands a record of more than a quorum present, and the roll would be made up from the attendance slips, if agreeable to the House.

The Speaker stated that if there was no objection, it would be so ordered. Hearing no objection, it was so ordered.

The minutes of the previous meeting were read and approved.

Periodic Medical Examinations

Dr. Victor C. Vaughan, District of Columbia, Chairman of the Council on Health and Public Instruction, presented the following for the Council, which was referred to the Reference Committee on Hygiene and Public Health:

Whereas, The need and value of periodic medical examination of persons supposedly in health are increasingly appreciated by the public, it is recommended by the Council on Health and Public Instruction that the House of Delegates authorize the Council to prepare suitable forms for such examinations and to publish them in The Journal of the American Medical Association; and that the county medical societies be encouraged to make public declaration that their members are prepared and ready to conduct such examinations, it being understood that the indigent only shall be examined free of charge and that all others are expected to pay for such examinations.

Report of Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the report of the Reference Committee on Legislation and Public Relations, as follows:

Your Reference Committee on Legislation and Public Relations begs to report in part on the matters referred to the committee, as follows:

The committee held an extended session, as per announcement, and numerous Fellows interested in referred matters were present.

CENTRAL BUREAU FOR CONSIDERATION OF LEGISLATION

The committee recognizes in the several reports of officers, and in the report of the Council on Health and Public Instruction, a consensus of opinion that a central bureau should be established for the consideration of all legislative matters pertaining to medicine or the practice of medicine, and of the public health, relieving the Council on Health and Public Instruction of these duties, which must be carried out in view of the extension of the functions of the Council in the matter of public education, and it is recommended:

1. That the trustees be memorialized to establish a bureau of this character, under whatever name, with such wholetime assistance as may be necessary, the duties of which shall pertain to legislative matters and medicolegal problems in which the whole medical profession may be interested, and which shall be to (*a*) coordinate the activities of the several constituent state associations, (*b*) ascertain and crystallize the opinions of the medical profession and the said constituent state associations, and (*c*) represent the American Medical Association.

In this connection, your committee desires to point to the desirability of the national organization reflecting the will of the great bulk of the medical profession, and that the bureau contemplated and these recommendations should act in matters of general policy, following instructions of the House of Delegates, or in emergencies following expression of opinion from the proper authorities of the several constituent state associations.

In this connection, further, it is recognized that the details of organization and operation of the contemplated bureau may not be decided upon at this time. The discussion of this problem in the report of the Council on Health and Public Instruction is referred to.

RESOLUTION ON NARCOTIC ADDICTION

2. The resolutions introduced by Dr. R. L. Green of Illinois have been recommended for adoption, after elimination of the last three paragraphs, the resolution now reading as follows:

Resolved, That the House of Delegates of the American Medical Association approve House resolutions number 258 (House of Representatives, Washington, D. C.), providing for a select committee of fifteen to inquire into the subject of narcotic conditions in the United States, the personnel of the Congressional committee to include all physicians who are now members of the House of Representatives.

RESOLUTION ON SHEPPARD-TOWNER LAW

3. The resolution introduced by Dr. Charles E. Humiston of Illinois, pertaining to the Sheppard-Towner law, is recommended for adoption, following the elimination of the second, fifth and last paragraphs, the resolution remaining as follows:

Whereas, The Sheppard-Towner law is a product of political expediency and is not in the interest of the public welfare, and

Whereas, The Sheppard-Towner law is an imported socialistic scheme unsuited to our form of government, and

Whereas, The Sheppard-Towner law unjustly and inequitably taxes the people of some of the states for the benefit of the people of other states for purposes which are lawful charges only upon the people of the said other states, and

Whereas, The Sheppard-Towner law does not become operative in the various states until the states themselves have passed enabling legislation, therefore be it

Resolved, That the American Medical Association disapprove the Sheppard-Towner law as a type of undesirable legislation which should be discouraged.

RESOLUTION ON VOLSTEAD ACT

4. The resolutions introduced by Dr. J. D. Brook of Michigan, pertaining to the conditions associated with the enforcement of the Volstead law, with slight modifications, the resolutions to read as follows, are recommended for adoption:

Whereas, The medical profession has been subjected to criticism and unfavorable comment because of present conditions associated with the enforcement of the Volstead law, and

Whereas, The results of a referendum conducted by The Journal of the American Medical Association, covering 54,000 physicians, indicates that 51 per cent. of physicians consider whisky "necessary" in the practice of medicine, and

Whereas, The dosage, method, frequency and duration of administration of this drug in any given case is a problem of scientific therapeutics and is not to be determined by legal or arbitrary dictum, and

Whereas, The experience of physicians, as reported in The Journal, indicates that the present method of control, limitation of quantity and frequency of administration, licensure and supply of a satisfactory product constitutes a serious interference with the practice of medicine by those physicians who are convinced of the value of alcohol in medical practice, therefore be it

Resolved, That the House of Delegates of the American Medical Association, in convention assembled, representing a membership of over 89,000 physicians, appeals to the Secretary of the Treasury and to the Congress of the United States for relief from the present unsatisfactory conditions, and recommends that provisions be made for supplying bonded whisky, *for medicinal use only*, at a fixed retail price to be established by the government.

The subject matter of the resolution introduced by Dr. Randolph Winslow of Maryland, petitioning the House of Delegates of the American Medical Association to use its best endeavors toward the repeal of the Volstead Act, so far as it applies to physicians and the practice of medicine, is believed by the committee to be adequately covered by the above recited resolutions.

RESOLUTION ON VOCATIONAL TRAINING OF DISABLED SOLDIERS

5. The committee recommends the adoption, as read, of the resolutions introduced by Dr. R. E. Schlueter of Missouri, protesting against the approval by the United States government of chiropractic as a proper vocational training for disabled ex-service men.

Whereas, The St. Louis Medical Society on May 16, 1922, by Memorial and Resolutions vigorously protested against the approval by the U. S. government of the School of Chiropractic as a means of vocational training for disabled ex-service men, and

Whereas, It appears that more than 250 ex-service men from all parts of the country, seventy of whom represented the Ninth District, composing the states of Missouri, Iowa, Kansas and Nebraska, are now enrolled in one Chiropractic School in this District with the sanction and approval of the U. S. government; therefore, be it

Resolved, That the House of Delegates of the American Medical Association, in annual session assembled representing over 89,000 legally qualified physicians, adequately trained in the arts and sciences (the only foundation for the recognition, control and prevention of disease), approves the sentiments expressed in the Memorial and Resolutions adopted by the St. Louis Medical Society, which have been submitted to this House, and hereby directs that the proper officers of the American Medical Association memorialize and petition the Federal government, particularly those officers charged with the responsibility for the rehabilitation of disabled ex-service men, and to take such action in the interest of the welfare of all the people, and also for the protection of those who honestly desire to administer to the sick, to the end that the ex-soldiers seeking vocational training, which will fit them for ministering to the sick and aiding in the recognition, control and prevention of disease, shall, at least, meet the requirements and shall receive such adequate training as is defined in the classification of medical schools of the American Medical Association, known as Class A, or acceptable medical schools—a standard which is approved by all right-thinking people moved by a desire for public welfare.

Respectfully submitted.

J. H. J. Upham, Chairman,
Holman Taylor,
W. R. Steiner,
A. W. Hornbogen,
C. E. Humiston.

The report was considered section by section, and on several motions, duly seconded and carried, the separate sections were adopted.

On motion, duly seconded and carried, the report was adopted as a whole.

Report of Reference Committee on Hygiene and Public Health

Dr. John D. McLean, Pennsylvania, Chairman, presented the report of the Reference Committee on Hygiene and Public Health, as follows:

1. The committee recommends an official expression of appreciation and thanks to Mr. Harold Bayne for his investigation and report on and endorsement of vivisection for research; and to Miss Gertrude Lane for the publication of the same in the *Woman's Home Companion.* The committee recommends that the House of Delegates forward such expression of appreciation to Mr. Bayne and to Miss Lane.

Dr. McLean moved that this section of the report be adopted. Seconded and carried.

2. The committee urges the endorsement of the "Open Door" policy on the part of all institutions carrying on vivisection for research, i. e., free and open admission of properly endorsed and responsible officers of humane societies, for the purpose of observation of such research work.

Dr. McLean moved the adoption of this section of the report, which was seconded and carried.

3. The committee also endorses the movement for establishing a legislative and legal bureau.

Dr. McLean moved the adoption of this section of the report, which was seconded and carried.

J. D. McLean, Chairman,
A. T. McCormack,
J. A. Pettit,
J. W. Vanderslice,
H. M. Brown.

Dr. McLean moved that the report of the committee be adopted as a whole. Seconded and carried.

Report of Reference Committee on Reports of Officers

Dr. Rock Sleyster, Wisconsin, Chairman, presented the report of the Reference Committee on Reports of Officers, as follows:

To read a committee report which reviews something like 100 pages of officers' reports within a reasonable time limit requires a brevity which we trust will not be interpreted as a lack of appreciation of the splendid work represented. In this brief preamble we wish to express to each of these officers the appreciation of the House of Delegates for continued faithful performance of duty, and the efforts their reports represent. We shall consider only major subjects, and these without any elaboration or repetition of reports as published.

SECRETARY'S REPORT

(*a*) Your committee approves the practice of making hotel reservations for members of the House of Delegates.

(*b*) With regard to the Secretary's recommendation for a rewriting of the model constitution for state organizations, we recommend that this be referred to the Judicial Council with request that they report back to the next House of Delegates any changes they deem advisable.

(*c*) Your committee approves making the *Bulletin* the official journal of the House of Delegates, and recommends that it be edited by the Secretary of the Association and the Field Secretary acting in conjunction with the Speaker of the House, and that it be an open forum for the expression of opinion.

BOARD OF TRUSTEES

(*a*) Your committee approves the Spanish-American edition of The Journal.

(*b*) The section of the Board's report on the therapeutic use of alcohol is approved by your committee. No recommendations are made because such as are necessary will be reported by that committee of the House to which has been referred the several resolutions introduced pertaining to the subject.

(*c*) Your committee approves the section recommending a reduction in annual dues, and recommends its reference to the Committee on Constitution and By-Laws for adoption.

(*d*) Your committee approves the recommendations of the Board of Trustees that a survey be made of existing pay clinics, diagnostic clinics and group practice, to be conducted jointly by the Judicial Council and the Council on Medical Education and Hospitals. We recommend that their reports and recommendations be submitted to the next annual meeting of the House.

(*e*) We approve of the recommendation of the Board of Trustees relative to the Public Health activities of the American Red Cross, and their advice that the House of Delegates take appropriate action to convince those in authority that the public health activities of this organization are no longer necessary, and if continued are likely to promote community irresponsibility and helplessness in regard to its own welfare.

(*f*) Your committee further strongly recommends that the Board of Trustees take such action as will make this recommendation effective at the earliest possible moment.

(*g*) We approve legal defense indemnity in malpractice suits, and the Board of Trustees is requested to report a concrete plan to the next annual session.

(*h*) The remainder of the report is approved.

SPEAKER

(*a*) We approve the Speaker's recommendation that the Council on Health and Public Instruction be enlarged to ten members, not less than five of whom shall be active practitioners.

(*b*) We heartily approve his suggestion of enlarging the work of this Council, and recommend that the Board of Trustees be requested to appropriate for the Council on Health and Public Instruction a sufficient amount to permit the Council to carry on its specific duties and enlarge its activities in the field of public instruction.

(*c*) We cannot approve the recommendation for appointment of an advisory committee for the Council on Health and Public Instruction, as the committee would be under our recommendations enlarged to ten members.

(*d*) We approve the recommendation for a revision of the Principles of Ethics.

(e) Your committee approves the Speaker's recommendation for a survey of the nursing institutions, and recommends its reference to the Council on Medical Education and Hospitals. They, if they deem its advisable, may submit this to a subcommittee. We recommend that a report be received from this Council on the subject at the next annual session.

(f) Your committee can see no present need of regular semiannual sessions of the House of Delegates.

(g) We approve the recommendation of the establishment of a Legislative Bureau. This has been previously approved under the report of the Board of Trustees.

THE PRESIDENT

Regarding the President's recommendation that the United States be divided into several districts, in view of the enormous scope and great importance of this question, your committee recommends that the House direct the appointment by the President of a special committee to consider this matter and to report to the House of Delegates its recommendations and plan for putting them into effect. It is recommended that this report be submitted to the next House of Delegates.

Rock Sleyster, Chairman,
James F. Rooney,
L. H. McKinnie,
J. D. Brook,
H. G. Stetson.

The report was considered section by section, and on several motions, duly seconded and carried, the separate sections were adopted.

On motion, duly seconded and carried, the report was adopted as a whole.

Report of Special Committee to Draft Resolutions on Death of Dr. J. N. McCormack

Dr. E. Eliot Harris, New York, Chairman, presented the following report of the special committee to draft resolutions on the death of Dr. Joseph N. McCormack:

Dr. Joseph Nathaniel McCormack of Louisville, Ky., died at his home in that city, May 4, 1922. He had reached the age of 75 years. He was a man of ceaseless activity, and died in the harness. He was for many years devoted to the aims and purposes of the American Medical Association, and was an indefatigable worker. His most conspicuous constructive abors in the Association were as Chairman of the Committee on Reorganization, to which committee the medical profession of America is indebted for the present complete organization and achievements of the Association.

The work of organization carried him into every state, from the lakes to the gulf and from the Atlantic to the Pacific, and has no parallel in the perfection of its results.

Dr. McCormack formulated and established a model law for the protection of the health and welfare of the people of his native state of Kentucky. Moreover, as its executive, he secured the enforcement of these laws, and perfected an organization in every county. For forty years he gave his ime and labor by day and by night to protecting the people rom disease, and promoting the organization and efficiency of the medical profession. His vision was clear, his ability was great, his ideals were high, and he accomplished a full ifetime of achievement.

He died full of years and of honors. His work remains, nd will go on in increasing circles in the years to come.

E. Eliot Harris, Chairman,
Holman Taylor,
D. E. Sullivan,
L. S. McMurtry.

After reading the report, Dr. Harris moved its adoption, hich was seconded by several and adopted unanimously by ising vote.

Report of Reference Committee on Medical Education

Dr. Joseph Rilus Eastman, Indiana, Chairman, presented ne report of the Reference Committee on Medical Education, s follows:

The Reference Committee on Medical Education heartily ommends the comprehensive and throughgoing character of ne report of the Council on Medical Education and Hospitals, and is in full accord with practically all of it.

With regard to the question as to whether more medical chools are needed, your committee believes that all existing medical schools of high grade should be encouraged to enlarge their facilities so as to care for larger numbers of medical students, not merely by increasing the number and size of buildings and by adding to physical equipment, but also by the addition of teachers in sufficient numbers, so that instruction could be furnished to the student body in small groups and that high standards may be maintained.

Your committee approves the suggestion that some of the smaller medical schools situated in large centers of population, and which can be brought up to higher standards, should be given financial aid as well as the larger schools.

Your committee further believes that those schools with a large population tributary to them, which have been obliged to limit their teaching to two preclinical years, should be enabled to establish the full four years of undergraduate instruction, wherever desirous to do so.

Your committee favors the establishment of new medical schools in a few states which are large enough to warrant it. Funds would be wisely expended in aiding such communities, if needed, to finance new medical schools.

It is further believed that the plan of some of the great foundations to require full-time clinical professorships is not wise and does not receive the support of the general profession. Your committee doubts the wisdom of making the adoption of such a plan a condition of endowment.

The tendency toward premature or over-rapid specialization is deplored. The practice of entering a special field without the proper preliminary general and special training should be checked. It is urged that medical schools so revise their curriculums as to provide a thorough training for the general practice of medicine, leaving courses in the specialties for the graduate medical school.

As a means to correct in part the faulty distribution of physicians, as between urban and rural districts, your committee subscribes to the plan of the Council for the establishment of hospitals in all communities having sufficient population in the surrounding territory to support them; these institutions are to be under the direct control of the medical profession. It, furthermore, regards the improvement of public highways as an additional aid in providing physicians for many districts which at present do not have them.

Your committee agrees with the views of the Council that the curriculums of medical schools should be reorganized so that the study of anatomy, pathology and the other fundamental sciences may be illustrative of clinical medicine and surgery, instead of treating those sciences as entirely separate from the latter. The committee believes, as does the Council, that the study of clinical cases should begin with the first year of medical training and be carried on concomitantly with the study of the fundamental sciences, so that each group will illustrate the other.

Your committee shares the view of the Council that there are certain obstacles in the development of a medical school as the medical department of a university. It has become clear that a medical school cannot be developed along the same comparatively narrow lines as the ordinary department of science in the university. Medicine has become one of the greatest functions of modern civilization, and has an intimate, every-day contact with every individual of the community, and the proper plan of organization must recognize this fact, and be sufficiently broad to maintain this relationship between the medical school, the medical profession and the community. The functions of medicine are performed by specially trained men and women—the medical profession. Any plan for the successful development of our medical schools must receive the active and enthusiastic cooperation of the medical profession. The medical school with its teachers and its associated agencies, hospitals, dispensaries, etc., cannot be developed simply as a university affair. It has definite and important functions to perform which are vital to the community, and a sound plan of organization must be one in which all of the agencies retain their normal place and perform their normal function. It is especially important that the teachers in the clinical departments retain their usual relationship to the medical profession.

Your committee endorses the recommendation of the Council that hospital internships be required by medical colleges and the state boards as an essential, respectively, for the degree of Doctor of Medicine and for the license to practice.

Your committee views with gratification the many advances which have been made in medical licensure, but at the same time wishes to call attention to the fact that in several states unduly large numbers of graduates of inferior medical schools and of pseudomedical cult colleges are being licensed.

In conclusion, your committee suggests that, inasmuch as the Council on Medical Education deals with all aspects of education, and inasmuch as the name of the Council is unduly long, the title be changed to read "The Council on Education and Hospitals of the American Medical Association."

Respectfully submitted.

Joseph Rilus Eastman, Chairman,
William F. Bacon,
F. B. Lund,
A. Parker Hitchens,
E. Eliot Harris.

It was moved and seconded that the report be adopted. Carried.

Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. John Edward Lane, Connecticut, Chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

The following change in Chapter XVII of the By-Laws is suggested by the Board of Trustees:

To this chapter, add:

Provided, however, that the Board of Trustees, by unanimous vote, may change the amount of the annual dues; and provided, further, that these dues shall not be less than $5 nor more than $6 per annum, and that any such change shall be announced in The Journal of the American Medical Association on or before November 1 of the year preceding that in which the change is to become effective.

In order to simplify the matter, your committee suggests the following substitute:

The annual Fellowship dues and the subscription price of The Journal of the American Medical Association shall be fixed by the Board of Trustees, and the same shall be payable in advance, on the first day of January of each year, provided that the annual dues shall not exceed $6, and provided that the amount of the same shall be announced in The Journal of the American Medical Association not later than November 1 of each year.

After reading the substitute amendment, Dr. Lane moved its adoption, which was seconded by Dr. H. B. Beirne, Illinois, and carried.

Dr. Lane read the following change in Chapter IX, Section 1, of the By-Laws, suggested by the Judicial Council:

This power shall extend to and include (1) all questions involving Fellowship in the Scientific Assembly or the obligations, rights and privileges of Fellowship.

Dr. Lane moved the adoption of this amendment, which was seconded by Dr. Randolph Winslow, Maryland, and carried.

Dr. Lane read the following change in Chapter IX, Section 1, of the By-Laws, which is also suggested by the Judicial Council:

Insert immediately preceding the final paragraph:

The Judicial Council shall have jurisdiction on all questions of ethics and in the interpretation of the laws of the organization.

Dr. Lane moved the adoption of this amendment, which was seconded by Dr. J. W. Bell, Minnesota, and carried.

Dr. Lane read the following change in Chapter IX, Section 1, of the By-Laws, as suggested by Dr. Chalmers:

Section 1, Line 3, by inserting after the word "final," the words "except that appeal may be made from their decision to the House of Delegates in which case the decision of this body shall be final."

And to Chapter X, add a new section, 5, as follows:

All activities and actions of standing and special committees and of all the various Councils of the Association shall be subject to the rules, regulations and orders of the House of Delegates.

Dr. Lane stated that the committee did not concur in the suggestion of Dr. Chalmers, and therefore moved that the proposed amendment be not adopted.

The motion was seconded by several delegates, and after discussion by Drs. Chalmers and M. L. Harris, the motion was put to a vote and declared carried.

Dr. Lane read the following:

The following change in Article 5, Section 2, of the Constitution is recommended by the Judicial Council as a substitute for the amendment at the Boston session:

The Trustees, the ex-President of the Association and the members of the several Councils shall be ex-officio members of the House of Delegates without the right to vote, provided that members of the Councils who are also elected delegates may exercise all of the rights of elected delegates.

Dr. Lane stated that the committee approves of the suggestion of the Judicial Council, and he moved the adoption of the substitute submitted. Seconded and carried.

Dr. Lane said that the following change in Article 5, Sections 2 and 3, is submitted by Dr. Mongan:

Sec. 2.—The House of Delegates is composed of delegates elected by the constituent associations. The Trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

Sec. 3.—The total voting membership of this House of Delegates shall not be in excess of 150, which shall be apportioned among the constituent associations in proportion to their actual active membership as hereinafter provided in the By-Laws.

(To lie over until next year.)

There was also an amendment introduced by Dr. George F. Keiper, Indiana, and offered as a substitute for the amendment to Section 2, Article 5, of the Constitution, but no report is made on this proposed substitute, because the House had already taken action amending this section.

Dr. Lane stated that the following amendment to Article 5, Sections 2 and 3, of the Constitution, is submitted by Dr. Upham. They are interrelated and dependent one on the other. Since they include an amendment to Section 3, they must lie over until next year:

Sec. 2.—Composition.—The House of Delegates is composed of delegates elected by the constituent associations and of delegates from the Medical Departments of the Army and Navy, and the Public Health Service, appointed by the Surgeon General of the respective departments, and of section delegates elected by the sections of the scientific assembly. The section delegates shall have the privilege of the floor, but only the right to vote on matters directly affecting the activities of the sections. The trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

Sec. 3. The total unrestricted voting membership of the House of Delegates shall not exceed 150. The Medical Departments of the Army and the Navy, and the United States Public Health Service shall each be entitled to one delegate, and the remainder shall be apportioned among the constituent associations in proportion to their actual membership as hereinafter provided in the By-Laws. The scientific sections shall each be entitled to one section delegate; should the right of the section delegates to vote be challenged on a question before the House, decision shall be made by a ruling of the Speaker, subject to the approval of the House.

The following amendment to Article 7 of the Constitution is submitted by Dr. Mongan:

That Article 7, of the Constitution, be amended by striking out all words after the word "Association." (To lie over until next year).

The following change to Chapter I, Section 2, of the By-Laws, is suggested by Dr. Mongan:

Sec. 2.—Term.—Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one half, as near as may be, shall be elected each year.

Dr. Lane moved for the committee that this section be not adopted. Seconded by Dr. Arthur T. McCormack, Kentucky, and carried.

The following change to Chapter I, Section 4, of the By-Laws is submitted by Dr. Mongan:

Regulation of Delegates.—Each delegate representing a constituent association, before being seated, shall deposit with the Committee on Credentials a certificate signed by the Secretary and under the seal of the constituent association, stating that he had been regularly elected by that constituent association.

Dr. Lane moved that this section be not adopted, which was seconded and carried.

The following amendment to Chapter VI, Section 1, of the By-Laws was submitted by Dr. R. L. Green:

Amend Section 1, of Chapter VI, by inserting after the word "Journal" in the fourteenth line, the following words: "Whose duty shall be restricted to the management of The Journal."

Dr. Lane moved for the committee that this amendment be not adopted. Seconded by Dr. Thomas S. Cullen, Maryland, and carried.

The following amendment to Chapter XI, Section 3, of the By-Laws is submitted by Dr. Van Zwalenburg:

Amend by inserting after the end of the first sentence:

Provided, however, that the county society in which he seeks membership shall have the same option to refuse him membership that it would have had if he had not previously been a member of a constituent society.

Your committee suggests the following substitute for the foregoing, to be inserted at the same point:

Provided that no evidence which would otherwise disqualify him for membership, arise.

Dr. Lane moved the adoption of the substitute, which was seconded and carried.

The following amendment to Article I, Chapter II, Section 4, of the Principles of Medical Ethics, is suggested by the Judicial Council:

> Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. That does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession, and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and specially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.
>
> It is unprofessional to promote radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

Dr. Lane moved the adoption of this amendment, which was seconded by Dr. J. W. Van Derslice, Illinois, and carried.

The following supplement to the Principles of Ethics of the American Medical Association is submitted by Dr. McClellan:

THE RELATION OF THE PUBLIC TO THE PROFESSION

> Section 1.—Any individual, or any institution, private or public, or corporation, or association, or group of individuals under whatever name, which shall solicit patients by circulars or advertisements to the general public, shall be considered to act contrary to the best interests of the profession and the public, and shall be deemed unworthy of the approval and support of the regular medical profession.
>
> Sec. 2.—Any individual, or any institution, private or public, or corporation or association, or group of individuals under whatever name, which has for its purpose to, or which actually does, unfairly advertise a small group of physicians to the detriment of the whole profession, shall be deemed unworthy of the approval and support of the regular medical profession.
>
> Sec. 3.—Any individual, or any institution, private or public, or corporation, or association, or group of individuals under whatever name, which shall solicit or collect funds under the guise of charity and then offer free medical treatment to persons able to pay for such medical services and thus pauperize such recipients of charity, and rob them of their self-reliance, shall be deemed unworthy of the approval and support of the regular medical profession.

Dr. Lane, for the reference committee, moved that these sections be not adopted. Seconded and carried.

J. E. Lane, Chairman,
B. L. Bryant,
J. H. Helmes,
J. A. Witherspoon.

Dr. Lane moved the adoption of the report as a whole. Seconded and carried.

New Business

Under new business, Dr. J. H. J. Upham, Ohio, called attention to the reference made by the Speaker, in his address yesterday morning, regarding the death of Dr. Dwight H. Murray, Syracuse, N. Y., a former speaker of the House of Delegates, and moved that the Speaker appoint a Memorial Committee to draw up appropriate resolutions in regard to the death of Dr. Murray. Seconded and carried.

The Speaker said he would appoint this committee later.

Dr. Claude A. Thompson, Oklahoma, presented the following preamble and resolution, and moved their adoption, which motion was seconded by Dr. Thomas C. Chalmers, New York:

> Whereas, Through many years of untiring and intelligent endeavor and work as organizer and reorganizer of the American Medical Profession, and as one of the profession's greatest exponents to the laity of the proper viewpoint of all matters medical, Dr. Joseph N. McCormack of Kentucky, now deceased, has for all time endeared himself to American physicians; therefore, be it
>
> *Resolved*, That the President of the American Medical Association be and hereby is requested to appoint a committee, himself being chairman, to devise and prepare a suitable memorial tablet in some metal, which tablet shall be placed in a prominent position in the headquarters of the American Medical Association in Chicago.

The resolution was referred to the Board of Trustees.

Dr. James F. Rooney, New York, offered the following amendment to Chapter III, Section 2, of the By-Laws to be changed to read:

> Special sessions of the House of Delegates shall be called by the Speaker on written request of twenty-five or more delegates, representing one third or more of the constituent associations or the majority of the Board of Trustees.

This amendment was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Dr. Walter L. Bierring, Iowa, delegate from the Section on the Practice of Medicine, presented the following, which was referred to the Reference Committee on Hygiene and Public Health:

> Whereas, The Section of Medical Licensure of the Congress of Medical Education, Licensure, Public Health and Hospitals, meeting in Chicago, March 6 to 10, 1922, adopted a resolution recommending the establishment of a national commission representing the Association of American Universities, National Educational Association, the Carnegie Foundation for the Advancement of Teaching, Federation of State Medical Boards, and the American Medical Association, for the purpose of collecting and disseminating all reliable data and information in regard to the methods of the various systems of drugless therapy; therefore, be it
>
> *Resolved*, That the House of Delegates of the American Medical Association express its approval of the above plan and designate two of its members as representatives of the American Medical Association at a conference to be called soon for the organization of the above named national committee.

Dr. Eugene Cary, Texas, presented the following communication, which was referred to the Reference Committee on Miscellaneous Business:

> The Women's Auxiliary of the State Medical Association of Texas respectfully requests the approval of the American Medical Association of a movement to organize a Women's Auxiliary to the American Medical Association. The object of this Auxiliary shall be: To extend the aims of the medical profession through the wives of the doctors to the various women's organizations, which look to the advancement in health and education; also to assist in entertainment at all Medical Conventions, and to promote acquaintanceship among doctors' families that closer professional fellowship may exist.
>
> Mrs. S. C. Red, President,
> Mrs. Edward Cary, Ex-President,
> Mrs. M. L. Graves, President Elect,
> Mrs. J. C. McReynolds, First Vice President,
> Mrs. S. C. Scott, Second Vice President,
> Mrs. Joe Gilbert, Third Vice President,
> Mrs. N. R. Dudgeon, Secretary,
> Mrs. N. L. D. Kirkham, Corresponding Secretary,
> Mrs. O. N. Judkins, Treasurer,
> Mrs. James Anderson, Publicity Secretary.

The Speaker appointed Dr. Thomas H. Halsted, Syracuse, N. Y.; Dr. Sidney K. Simon, New Orleans, and Dr. William Gerry Morgan, Washington, D. C., as a committee to draft resolutions on the death of Dr. Dwight H. Murray.

Dr. John W. Bell, Minnesota, presented the following preamble and resolution at the unanimous request of the Minnesota State Medical Association:

> Whereas, There exists an acute need of a lay or public health journal, authoritative in character—a connecting link between the profession and the public, dealing with preventive medicine, hygiene, sanitation and communicable diseases, in brief, to enlighten the public as to what scientific medicine is doing, also its efforts to protect the public against quacks, charlatans and ill-advised medical laws; therefore, be it
>
> *Resolved*, That the Board of Trustees be urged to take immediate steps to develop an efficient plan of lay publicity.

This resolution was referred to the Board of Trustees.

The Secretary stated that the President-Elect, in his address, proposed that the House of Delegates arrange for some form of Fellowship which might be held by physicians engaged in missionary work in foreign fields, and suggested that this general subject be referred to the Reference Committee on Amendments to the Constitution and By-Laws, and that the committee report its recommendations back to the House, for action.

Accordingly, it was moved that this be done. Seconded and carried.

Dr. R. E. Schlueter, Missouri, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, The United States Public Health Service activities have been materially increased by various Acts of Congress, owing to the care and treatment of the thousands of ex-service men and women of the World War; and by the increased requirements in rural sanitation; and by the increased requirements in research laboratory work; and by the increased requirements necessary for efficient immigration inspection; therefore, be it

Resolved, That the House of Delegates of the American Medical Association, in annual session assembled, endorse and hereby direct that the proper officers of the American Medical Association take in hand immediately, memorialize, and petition the federal government, particularly the Finance Committee of the Senate, the Interstate and Foreign Commerce Committee of the House, the President, the Secretary of the Treasury, the director of the Veterans' Bureau, and others who can be instrumental, to secure the enactment of Senate Bill No. 2764 introduced by Mr. Watson of Indiana, House Bill No. 9291 introduced by Mr. Dyer of Missouri, and House Bill No. 9775 introduced by Mr. Newton of Minnesota (known as the Watson-Dyer-Newton enactment); all to reorganize and promote the efficiency of the United States Public Health Service, in that they provide for an increase of personnel of that Service by 550 regular commissions; fifty of these to be dental officers, fifty sanitary engineers, and 450 medical officers, to be chosen from men who hold reserve commissions in the U. S. Public Health Service and who have had not less than three years' service in the Army, Navy or Public Health Service, a part of which time must have been served between April 6, 1917, and Nov. 11, 1918. These bills are personnel bills, and do not in any way change the duties of the United States Public Health Service, and do not require any increased appropriation, but simply supply that corps with the needed medical, dental and scientific personnel.

As there was no further business to come before the meeting at this time, the House took a recess until 2 p. m., Thursday, May 25.

Third Meeting—Thursday Afternoon, May 25

The House of Delegates reconvened at 2 p. m., and was called to order by the Speaker.

Supplementary Report of the Committee on Credentials

Dr. J. C. Rockafellow, Iowa, Chairman, stated that the Committee on Credentials had accepted the credentials of 138 delegates who were entitled to seats in the House of Delegates.

Dr. Horace M. Brown, Wisconsin, moved that the report be accepted. Seconded and carried.

The Secretary called the roll, and 126 responded.

The next order of business being the reading and adoption of the minutes of the previous meeting, Dr. Arthur T. McCormack, Kentucky, moved that the reading of the minutes be dispensed with. Seconded and carried.

Election of Officers

The election of officers being the next order, the Speaker reminded the delegates that nominating speeches were limited to two minutes, and he said that he was now ready to entertain nominations for President.

Dr. J. Curtis Lyter, Missouri, nominated Dr. Jabez N. Jackson, Missouri, for President.

Dr. C. Van Zwalenburg, California, nominated Dr. Ray Lyman Wilbur, California.

The nomination of Dr. Jackson was seconded by Dr. Donald Macrae, Iowa; Dr. Holman Taylor, Texas, and Dr. Joseph Rilus Eastman, Indiana.

The nomination of Dr. Wilbur was supported by Dr. Edward B. Heckel, Pennsylvania; Dr. Walter L. Bierring, Iowa, and Dr. Joseph A. Pettit, Oregon.

Dr. Arthur T. McCormack, Kentucky, moved that nominations be closed. Seconded and carried.

The Speaker appointed as tellers Drs. Arthur J. Bedell, New York; George F. Keiper, Indiana, and R. L. Green, Illinois. There were 123 votes cast, of which Dr. Wilbur received 69 and Dr. Jackson 54. As Dr. Wilbur received a majority of the votes cast, he was declared duly elected President.

Nominations for Vice President being in order, Dr. Arthur T. McCormack, Kentucky, nominated Dr. Willard Bartlett, Missouri. The nomination was seconded by Dr. R. E. Schlueter, Missouri.

Dr. W. K. Wilson, Michigan, moved that nominations be closed. Seconded and carried.

A rising vote was taken and Dr. Bartlett was declared unanimously elected Vice President.

Nominations for Secretary being in order, Dr. James F. Rooney, New York, nominated Dr. Alexander R. Craig, Illinois. The nomination was supported by Dr. Edward B. Heckel, Pennsylvania, and by Dr. Henry P. Linsz, West Virginia.

Dr. Heckel moved that nominations be closed. Seconded and carried.

A rising vote was taken and Dr. Craig was declared unanimously elected Secretary.

Dr. Frank Billings, Illinois, speaking for the Board of Trustees, placed in nomination for Treasurer for the approval of the House, Dr. Austin A. Hayden, Illinois.

Dr. J. W. Van Derslice, Illinois, moved that nominations be closed. Seconded and carried.

A rising vote was taken, and the nomination of Dr. Hayden was confirmed and he was declared elected.

The election of a Speaker being the next order of business, President de Schweinitz was called to the Chair.

Dr. W. J. Wilson, Michigan, nominated for Speaker of the House of Delegates Dr. Frederick C. Warnshuis, Michigan. The nomination was seconded by Dr. E. Eliot Harris, New York; Dr. Ben R. McClellan, Ohio, and by Dr. Thomas C. Chalmers, New York.

It was moved that nominations be closed. Seconded and carried.

Dr. James F. Rooney, New York, moved that the Speaker be elected by a rising vote. Seconded and carried.

A rising vote was taken, which resulted in the unanimous election of Dr. Warnshuis as Speaker.

Dr. Horace M. Brown, Wisconsin, nominated for Vice Speaker Dr. Rock Sleyster, Wisconsin. The nomination was seconded by Dr. E. Eliot Harris, New York; Dr. Edward B. Heckel, Pennsylvania; Dr. A. W. Hornbogen, Michigan; Dr. Edgar A. Hines, South Carolina; Dr. John Edward Lane, Connecticut.

Dr. Victor C. Vecki, California, moved that a rising vote be taken on the election of Dr. Sleyster. Seconded and carried.

A rising vote was taken, which resulted in the unanimous election of Dr. Sleyster.

The following Trustees were elected for a term of three years: Dr. A. R. Mitchell, Nebraska; Dr. D. Chester Brown, Connecticut, and Dr. Oscar Dowling, Louisiana.

The Speaker stated that the next in order was nominations for standing committees by the President and their confirmation by the House of Delegates.

President de Schweinitz placed in nomination as a member of the Judicial Council Dr. J. H. J. Upham, Ohio; on the Council on Health and Public Instruction, Dr. Walter B. Cannon, Massachusetts; on the Council on Medical Education and Hospitals, Dr. William Pepper, Pennsylvania; on the Council on Scientific Assembly, Dr. E. S. Judd, Minnesota.

Dr. J. W. Van Derslice, Illinois, moved that the nominations made by the President be confirmed. Seconded and carried.

The names of the applicants approved by the several sections for election as Associate Fellows were presented by the Secretary, and on motion, duly seconded and carried, the Secretary was authorized to cast the ballot of the House of Delegates for the election of those applicants against whom no objection is raised by the executive officers of the constituent associations within whose jurisdiction the applicants reside.

The Secretary then submitted the names of those who had been nominated by the several constituent associations for Affiliate Fellowship.

On motion, duly seconded and carried, the Secretary was authorized to cast the ballot of the House.

Place of 1923 Annual Session

Dr. Frank Billings, Illinois, stated that the Board of Trustees had received invitations from five cities in which to hold the annual session of the Association in 1923, namely, San Francisco, Atlantic City, Washington, New York and Chicago.

After considering all of these places, the Board of Trustees recommended that the House of Delegates make a choice between Atlantic City and San Francisco. Washington, D. C., was also placed in nomination from the floor. A ballot was taken which resulted in the selection of San Francisco as the next place of meeting. Dr. Joseph A. Pettit, Oregon, moved that the vote for San Francisco be made unanimous. Seconded and carried.

Resolutions of Thanks

Dr. Fred B. Lund, Massachusetts, moved that a vote of thanks be extended to the medical profession of St. Louis, their wives, to the Local Committee of Arrangements for their delightful entertainments, the press, and to all others who had in any way contributed toward making the meeting a success both socially and scientifically. Seconded by Dr. James F. Rooney, New York, and unanimously carried.

Dr. Lewis S. McMurtry, Kentucky, moved that a rising vote of thanks be extended to the Speaker for the tactful, courteous and efficient manner in which he had discharged the duties of his office. Seconded and carried unanimously.

Dr. Horace M. Brown, Wisconsin, moved that the House of Delegates authorize the Board of Trustees to name the date for the next meeting of the Association, to be held in San Francisco in 1923. Seconded and carried.

Report of Reference Committee on Sections and Section Work

Dr. John W. Bell, Minnesota, Chairman, presented the report of the Reference Committee on Sections and Section Work, as follows:

Your committee has reviewed with pleasure the short, but important, report of the Council on Scientific Assembly.

The arrangement and dovetailing of the many scientific subjects to be discussed at the scientific sessions is not only important, but also very difficult.

We fully agree with the entire report and feel that the Council on Scientific Assembly is wise in advising the Association to move slowly in the establishment of new sections. They have solved a difficult problem by establishing a "Section on Miscellaneous Topics." When given subjects presented in this section grow too large for it, then it will be time enough to consider the establishment of a new Section for a given subject or growing subjects.

Your committee favors the change of the title "The Section on Preventive Medicine and Public Health" to "The Section on Preventive and Industrial Medicine and Public Health," and in order to secure prompt action has already referred the matter to the Reference Committee on Amendments to the Constitution and By-Laws, asking it to report its recommendations at this meeting.

Your committee moves that the report of the Council on Scientific Assembly be accepted in toto.

THOMAS S. CULLEN, Chairman,
HENRY P. LINSZ,
JOHN W. BELL.

After reading the report, Dr. Bell moved its adoption, which motion was duly seconded and carried.

Supplementary Report of Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the following report of the Reference Committee on Legislation and Public Relations:

Your committee begs to submit the following supplementary report on the several subjects heretofore referred:

1. The resolution introduced by Dr. R. E. Schlueter of Missouri, approving Senate Bill No. 2764 and House Bill No. 9291, and House Bill No. 9775, pending in Congress and pertaining to the United States Public Health Service, is recommended for adoption as read.

2. The resolutions introduced by Dr. William Gerry Morgan of the District of Columbia, Dr. R. L. Green of Illinois, Dr. C. D. Selby of Ohio, Dr. Randolph Winslow of Maryland, and Dr. James F. Rooney of New York, all pertaining to "state medicine," have been considered separately and collectively, and the committee recommends that the resolution by Dr. Rooney, modified to read as follows, be passed by this House of Delegates as the best solution of the problem under consideration, the other resolutions not to be passed:

The American Medical Association hereby declares its opposition to all forms of "state medicine," because of the ultimate harm that would come thereby to the public weal through such form of medical practice. "State medicine" is hereby defined for the purpose of this resolution to be any form of medical treatment, provided, conducted, controlled or subsidized by the federal or any state government, or municipality, excepting such service as is provided by the Army, Navy or Public Health Service, and that which is necessary for the control of communicable diseases, the treatment of mental disease, the treatment of the indigent sick, and such other services as may be approved by and administered under the direction of or by a local county medical society, and are not disapproved by the state medical society of which it is a component part.

Respectfully submitteed.

J. H. J. UPHAM, Chairman.
HOLMAN TAYLOR,
W. R. STEINER,
A. W. HORNBOGEN,
C. E. HUMISTON.

The report was considered section by section, and on motion, duly seconded and carried, each separate section was adopted.

Dr. Upham then moved the adoption of the report as a whole, which motion was duly seconded and carried.

New Business

Dr. Horace M. Brown, Wisconsin, a member of the Reference Committee on Hygiene and Public Health, in the absence of its chairman, presented the report of the Committee, and asked unanimous consent, which was granted, to introduce as new business the following preamble and resolutions which were brought before and approved by the Committee:

RETIREMENT, DISABLED RESERVE OFFICERS

WHEREAS, The disabled emergency officers of the Army are not receiving the same treatment as the other five classes of disabled officers who served during the World War, in that they are denied the privileges of retirement for physical disability as allowed all other disabled officers, regular and emergency alike; and

WHEREAS, It is obviously unjust and discriminatory to deny one class of disabled officers the rights and privileges accorded all other classes; and

WHEREAS, There is pending in Congress now legislation to correct this discrimination; therefore, be it

Resolved, That the House of Delegates of the American Medical Association be requested to urge upon the House of Representatives the passage of the Bursum bill at the earliest possible date, to the end that the disabled emergency officers may receive the treatment to which they are entitled.

After reading the resolution, Dr. Brown moved its adoption.

Dr. James F. Rooney, New York, in seconding the motion, moved that the resolution be referred to the Reference Committee on Legislation and Public Relations, that the Committee be discharged, and the House proceed to an immediate vote. Seconded and carried.

The motion to adopt the resolution was voted on and declared carried.

Dr. Brown, in reporting further for the Reference Committee on Hygiene and Public Health, stated that a resolution was referred to the Committee relating to the retransfer of officers of the Public Health Service from the Veterans' Bureau Service back to the Public Health Service. This resolution was referred to the Reference Committee on Hygiene and Public Health, but for some reason went to another committee, which committee acted on it without getting the needed information.

The resolution is to the effect that the medical officers of the Public Health Service, who have been transferred to the control of the Veterans' Bureau, should be returned to the Public Health Service not only for the protection of the veterans, but also for themselves and for the protection of the medical profession against the incoming horde of chiropractors, naprapaths and other cults. After due consideration of this matter, the committee recommends that the resolution be adopted by the House of Delegates.

Accordingly, Dr. Brown so moved, which motion was duly seconded and carried.

With reference to the resolution offered by Dr. Walter L. Bierring, Iowa, the committee recommends its adoption. Seconded.

Dr. Charles E. Humiston, Illinois, moved to amend that the number of representatives from the American Medical Association be increased from two to five.

The amendment was seconded, accepted, and the original motion as amended was put and carried.

Regarding the resolution on periodic examinations, which was referred to the committee, the committee endorses the resolution and moves its adoption. Seconded and carried.

Dr. Brown moved the adoption of the report of the committee as a whole. Seconded and carried.

Supplementary Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. John Edward Lane, Connecticut, Chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

Your Reference Committee on Amendments to the Constitution and By-Laws submits the following supplementary report:

Dr. de Schweinitz, in his Presidential address to the House of Delegates, suggested that provision be made for according Associate Fellowship to American physicians engaged in missionary and similar work, located in foreign countries. To meet this proposal your committee recommends the following amendment to the By-Laws:

Interpolate after the fifth line of Section 6, Chapter XI, following the words "the United States," the phrase

American physicians located in foreign countries and engaged in medical missionary and similar educational and philanthropic labors.

so that the Section, as amended, shall read:

Associate Fellows.—The following may be elected in accordance with Section 5, Chapter IV, to Associate Fellowship: Physicians who are members of the chartered national medical societies of foreign countries adjacent to the United States; American physicians located in foreign countries and engaged in medical missionary and similar educational and philanthropic labors; dentists holding the degree of D.D.S.

continuing to the end of the section as it is now worded.

The committee further recommends that Section 5, Chapter IV shall be amended by adding after the words "foreign physicians," in the second line of the same, the words

and from American physicians engaged in missionary and similar labors in foreign countries.

so that the section as amended, shall read:

Associate Fellows.—Applications for Associate Fellowship from foreign physicians and from American physicians engaged in missionary and similar labors in foreign countries, must be approved by the Judicial Council;

and so on to the end of the section as at present worded.

The Reference Committee recommends the adoption of the amendment to Section 2, Chapter III, of the By-Laws presented by Dr. James F. Rooney, New York, at the meeting of the House of Delegates held on Tuesday, last, whereby this section shall read:

Special Sessions.—Special sessions of the House of Delegates shall be called by the Speaker, on written request of twenty-five or more delegates representing one third or more of the constituent associations; or on request of a majority of the Board of Trustees. When a special session is thus called,

and so on, to the end of the section as at present worded.

The recommendation of the Council of Scientific Assembly and the Reference Committee on Sections and Section Work, changing the name of the Section on Preventive Medicine and Public Health to that of "Section on Preventive and Industrial Medicine and Public Health" Chapter 14, Section I (12) is approved.

Your committee recommends that this Chapter 14, Section I (12) be changed to read.

12.—Preventive and Industrial Medicine and Public Health.

J. E. Lane,
B. L. Bryant,
J. H. Helmes,
J. A. Witherspoon.

The report was considered section by section, and on several motions, which were duly seconded and carried, the separate sections were adopted.

Dr. Lane then moved the adoption of the report as a whole. Seconded and carried.

Dr. Lane moved that the House of Delegates direct and empower the Secretary to edit, and codify, the amendments adopted at this session and coordinate them into the Constitution and By-Laws by making such changes in wording as shall in no way modify the sense of the amendments which have been adopted.

The Speaker said that if there was no objection, he would interpret the motion of Dr. Lane as the wish of the House.

Report of the Reference Committee on Reports of Officers

Dr. Rock Sleyster, Wisconsin, Chairman, presented the report of the Reference Committee on Reports of Officers, as follows:

Your Reference Committee on Reports of Officers, in concluding its report of Tuesday, merely wishes to approve progress by the Board of Trustees as reported in the matter of a lay medical journal. We are assured by the Board that this much needed publication should be a fact before the convening of the 1923 House.

We also wish to endorse unqualifiedly the Gorgas memorial, a tribute to a past President of this Association, and one of its most distinguished and loved members.

We wish to express to President de Schweinitz the appreciation of the House for his masterly address, the recommendations contained therein having been referred to other Reference Committees.

Respectfully submitted.

After reading the report, Dr. Sleyster moved its adoption, which motion was duly seconded and carried.

Report of Reference Committee on Miscellaneous Business

Dr. Southgate Leigh, Virginia, Chairman, presented the report of the Reference Committee on Miscellaneous Business, as follows:

In considering the proposition submitted by Dr. Edward Cary, Texas, at a previous meeting of the House, regarding the Women's Auxiliary of the State Medical Association of Texas, Dr. Cary appeared before the committee and explained the details of the suggested organization. He stated also that in Texas the Women's Auxiliary to the State Association had been of material aid to the profession.

The present plan does not appear to involve any financial or other obligation on the part of this Association.

The ladies are today organizing an auxiliary to the American Medical Association.

All that they are asking is that the House of Delegates approve the movement.

Your committee would suggest that such approval be given.

Dr. Leigh moved the adoption of this part of the report. Seconded and carried.

The committee recommends that the Council on Medical Education be requested to take under advisement the propriety of appointing a subcommittee on Medical Nomenclature, and that the Council be authorized, at its discretion, to appoint such a committee.

Dr. Leigh moved the adoption of this part of the report. Seconded and carried.

Dr. Leigh then moved the adoption of the report as a whole. Seconded and carried.

Memorial on Death of Dr. Dwight H. Murray

Dr. Thomas H. Halstead, New York, presented the following report in regard to the death of Dr. Murray:

Dr. Dwight Henderson Murray, Speaker of the House of Delegates of the American Medical Association, died at his home in Syracuse, N. Y., on Oct. 21, 1921. The day before his death, while in perfect health, he tripped and fell a few steps in his office building, and while being helped up by the janitor, remarked that he was not hurt much, but would probably feel the results the next day. Twenty-four hours later, without warning, and after getting out of his automobile in his garage, he went into collapse and died in a few minutes. The necropsy showed a rupture of the aorta beginning at the inner coat and extending downward until breaking through the external coat at the time of collapse. There was no evidence of disease, the injury causing the rupture and death. Dr. Murray was a member of the House of Delegates continuously since 1910, and Vice Speaker from 1916 to 1920, and was elected Speaker at the Boston meeting a year ago. He was also vice speaker of the House of Delegates of the Medical Society of the State of New York. He was at various times president of his local medical societies, and was the first chairman of the Section on Gastro-Enterology and Proctology of the American Medical Association. He was a former president of the American Proctological Association, which society he had much to do in organizing. He was clinical professor of proctology in the Medical Department of Syracuse University, from which college he graduated in medicine. At the time of his death he was 60 years old, and is survived by his wife, a son and a daughter. Dr. Murray was from the beginning of his medical career always interested actively both in the scientific side of medicine, as well as the various problems and policies that affect the economic side of medical men and their various organizations. He was not only a physician of both local and national reputation, but he was a citizen who took an active and intelligent interest in public affairs and always made himself felt.

He was a strong man of genial personality and eminent worth, a man of sterling integrity and high ideals. He will be greatly missed for years to come by his many medical associates and friends.

Thomas H. Halsted,
William Gerry Morgan,
Sidney K. Simon.

Dr. Halstead moved the adoption of the memorial by a rising vote, which was seconded by Dr. Horace M. Brown, Wisconsin, and adopted and carried unanimously.

The Speaker instructed the Secretary to send a copy of the memorial to Mrs. Murray.

President deSchweinitz appointed the following special committee to investigate and report on dividing the country into districts: Dr. L. H. McKinnis, Colorado; Dr. Rock Sleyster, Wisconsin, and Dr. John E. Lane, Connecticut.

Dr. B. R. Shurly, Michigan, delegate from the Section on Largyngology, Otology and Rhinology, asked unanimous consent, which was granted, to present the following resolution:

> Whereas, The Veterans' Bureau has ignored the contracts of hospitals, conducted lay inspections of same, placed incompetent lay district managers over competent medical men, who have interfered with the medical business and the medical care and proper examination of veterans for compensation, accepted the dictation of the American Legion and Welfare officers in the appointment and control of the medical officers for duty, established American Legion Hospitals and employed medical men without due consideration of their professional or executive capacity or proper remuneration; be it
>
> *Resolved*, That a committee of three be appointed by the President of the American Medical Association to consult with the Veterans' Bureau and establish justice, promote efficiency, conserve wastage of the people's money, protect the ex-soldier and ultimately aid in the establishment of scientific government hospitals and abolish political hospitals conducted by the American Legion.

Seconded.

The resolution was discussed by Major A. Parker Hitchens, U. S. Army, and at the close of his remarks Major Hitchens moved that the resolution be laid on the table. Seconded and carried.

Other Business

Dr. C. E. Morgan, Massachusetts, rose to a question of information, which he said he would like the Speaker to furnish in due time, not necessarily now. It is this: Is there any legal conflict between Article 1 of the Constitution entitled "Definition which appends the name of this corporation as the American Medical Association? It is a federacy of its constituent associations under Article 5, Section II, and Article 5, Section III. I do not expect the Speaker to furnish this information today, but I think it would relieve a great deal of doubt if he would give us a definition of federacy and whether or not these articles in the Constitution conflict legally with the fundamental object of this Association."

The Speaker said he would be glad to consider the subject and supply the information as soon as possible.

The Speaker extended to the delegates his sincere thanks for the kindnesses and courtesies they have shown him. He also extended his thanks to the various reference committees for the splendid work they had done in behalf of the House of Delegates.

As there was no further business to come before the meeting, the Speaker then declared the House of Delegates adjourned sine die.

ADDENDUM

(Add to report of Council on Health and Public Instruction, The Journal, *May 27, pages 1623-1627)*

REPORTS OF SUBCOMMITTEES OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Committee on Health Problems in Education

o the Council on Health and Public Instruction:

I submit herewith a brief report of the work of your subommittee on Health Problems in Education for the past ear. I have made report to the Council of the conference f the committees of the several state medical societies which vas held in Boston last June and also of the meeting of the oint committee held in Des Moines last July at the time of he meeting of the National Educational Association. At this neeting the committee representing the educational group vas taken over by the National Education Association. It ad previously been since its appointment in 1911 a creature f the National Council of Education. The public meeting t Des Moines was attended by the largest audience which he committee has ever had the privilege to address, numberng about 1,500 persons. At this meeting the movement to extend the joint activities of the teaching and medical profession by the appointment of committees from the state teachers associations to cooperate with similar committees from the state medical societies were strongly endorsed.

At the winter meeting of the educational group, held in February, 1922, the joint committee met at the Auditorium Hotel on the morning of February 28. I enclose herewith official report of this meeting prepared by Dr. Thomas D. Wood, the chairman of our joint committee. I should like in this connection to comment on three items of importance in connection with this:

First, Professor Owen of the Chicago Normal College said that he has been a member of a committee of the National Educational Association, which has been at work for some years on a plan to reorganize the whole scheme of secondary education in this country. He stated that largely as a result of the work of our joint committee, health and education for health had been made the first item in this reorganized program of education. If the joint committee had accomplished nothing else than this radical change of opinion on the part of the leading educators of the United States, it would have more than justified its existence.

Second, Professor Owen also stated (and this was emphasized by other members of the educational group) that the teachers of this country were ready to introduce into the schools a health program and to enthusiastically carry it out if only a consistent workable program can be presented. For this they look to the medical profession. This matter was deemed of such importance that it was voted to hold a special meeting of the joint committee in Pittsburgh at some date in April next, at which time two days are to be devoted to a consideration of this matter. It is hoped that it will be possible to organize a strong state committee made up of persons who can speak with authority from the various points of view involved in such a program, which committee will undertake to construct a comprehensive medical scheme for the education of schoolchildren along health lines from the kindergarten upward.

Third, I was much impressed by certain comments, especially those by Professor Hetherington of the National Educational Association group, concerning the attitude of suspicion entertained in some parts of the country by the public and among them the teachers concerning the medical profession. He was intensely interested in the plan to secure cooperation between the state teachers' associations and the state medical societies throughout the country, but believed that some difficulty will be experienced in some quarters because of this attitude of suspicion of the motives of the medical profession. It was his opinion, in which I heartily concur, that a movement to secure cooperative action between the teachers and physicians in the several states in a study of the health problems in education would offer an opportunity to bring about better understanding of the motives and purposes of the medical profession, and through the teachers of better understanding on the part of the public than any plan that he could conceive. I would recommend that this movement of the several state medical societies, which has led to the appointment of committees in forty-two states, be promoted in every possible way.

I would even venture to suggest that if strong committees of teachers are appointed in more of the states, arrangements might be made to hold a meeting of the state teachers' association and the state medical society in the same city and in the same period for one year in order that one joint session of the state teachers' association and the state medical society might be held to consider this question of common interest, namely, the health problems in education.

Respectfully submitted.

John M. Dodson,
Chairman.

April 13, 1922.

MINUTES OF THE ANNUAL MEETING OF THE JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION AT BREAKFAST CONFERENCE, AUDITORIUM HOTEL, CHICAGO

In attendance: Miss Katherine Devereaux Blake, Miss Ada Van Stone Harris, Mrs. Josephine Corliss Preston, Mrs. Ira Couch Wood, President Aley, Dr. Dodson, Dr. Green, Professor Hetherington, President Keyes, Superintendent Keating, President Owen, Commissioner Tigert, Dr. Winship and Dr. Wood.

The chairman presented a brief report on the program and progress of the committee.

The following reports were presented by members of the Joint Committee:

(*a*) Report by Mrs. Wood on Cooperation with Other Organizations.

(*b*) Report by Mrs. Wood on the progress of the subcommittee on the revision and reconstruction of the manuscript on "Health Improvement in Rural Schools." It is expected that this report will be completed, printed and ready for distribution at the National Education Association meeting at Boston in July.

(*c*) Report by Dr. Dodson on the organization in various states of joint committees on health problems in education of the state medical societies and the state teachers' associations. An encouraging beginning has been made in several states in the organization of these joint committeers.

Members of our parent national joint health committee were urged to do everything possible to promote in their own and in other states the organization of the corresponding joint committee.

(*d*) Report by Mrs. Wood (for Dr. Corwin, chairman) of the Committee on Ventilation of Schools.

Mrs. Wood read a carefully prepared, valuable report which was listened to with careful attention.

It was the sense of the joint committee that this report should be considered a report of progress; that the subcommittee should continue, under Mrs. Wood as acting chairman, the investigation of the important subject of school ventilation, and that the provisional report should be mimeographed and sent to the members of the committee, but that the material should not be put into print as the report of the committee.

The following motions were also adopted at the meeting:

1. That a resolution be transmitted to the Trustees of the Elizabeth McCormick Memorial Fund expressing appreciation by the Joint Health Committee of the generous support which has been given through the years to the program and work of our joint committee, and further appreciation of the splendid and effective service and cooperation which have been given by Mrs. Ira Couch Wood, director of the Elizabeth McCormick Memorial Fund, and valued member of our joint health committee.

2. Motion that the chairman appoint a committee of persons within and outside of our joint committee to prepare a comprehensive report for elementary schools on education for health.

3. Motion that a conference of our joint committee be held in Pittsburgh at some week-end (including Saturday and Sunday) not later than May 1, and that a stenographer be employed for that meeting. The purpose of this conference is to formulate a comprehensive plan of health education in the schools which may be ready for a report at the National Education Association meeting in July at Boston.

This recent meeting at Chicago surpassed all previous conferences of our committee in numbers attending, and in constructive interest manifested.

You are asked for suggestions regarding the general work of our committee and for information and advice in answer to the questions on the accompanying sheet.

The proposed working conference of our joint committee to be held in Pittsburgh in April is considered to be of the greatest importance to the program and the future work of our committee. Miss Harris has offered to make the local arrangements for our conference in Pittsburgh.

The payment of their expenses by those attending the conference will be further evidence of devotion to the work of our joint health committee. You are urged to attend the Pittsburgh conference if possible.

With cordial greetings to all members of our committee.

Thomas D. Wood, Chairman.

Committee on Cooperation of Women's Foundation for Health

To the Council on Health and Public Instruction:

In 1914 the committee of which I had the honor to be chairman, namely, the Women's and Children's Welfare Committee, issued the Babies Standard Score Card, two pamphlets entitled "How to Hold a Baby Health Conference" and "Save the Babies" pamphlet, together with a series of fifteen posters known as the Baby Welfare Posters. Later we secured records from reliable sources—over 10,000 in number—and from them Mr. F. S. Crum made up our Anthropometric Table.

My committee now wishes to present to you the following report based on a program emphasizing the positive phase of health for women and girls.

It now has a series of pamphlets, six in number, and posters on the presses of this Association under the name of "Official Series on Positive Health" and it is to be distributed by the Women's Foundation for Health. The Council on Health and Public Instruction has read, given constructive criticism and approved the manuscripts in the series.

The table of contents of the series is as follows:

TABLE OF CONTENTS

Chapter I.—The Newer Conception of Health. Part One. — Health Examinations. A. Interpretation of Medical Examination Card. B. Interpretation of Physical Examination Card. Detailed suggestions for Physicians, Nurses and Directors of Physical Education. Part Two—Individual Exercises.

Chapter II.—The Individual and the Community. Part One.—How Are You? Part Two.—A Look at Herself. Part Three.—Local Health Foundations. Part Four.—Feet, Posture, Shoes and Walking.—Bureau of Social Education, National Board of the Y. W. C. A., New York City.

Chapter III.—Nutrition in Relation to Health and Efficiency.—E. V. McCollum, Professor of Bio-Chemistry, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore.

Chapter IV.—Mental Health. Part One.—Living at Our Best.—William A. White, M.D., Superintendent St. Elizabeth's Hospital, Washington, D. C.

Part Two.—Bringing Up Children. A. Infancy and Childhood. B. Adolescence.—Jessie Taft, Ph.D., Director, Department of Child Study, Philadelphia.

Chapter V.—The Heritage of Life.—Walter B. Cannon, M.D., Harvard Medical School, Boston.

Chapter VI.—Recreation. Part One.—Recreation for Health Building. —E. C. Lindeman, Professor of Sociology, North Carolina College for Women, Greensboro, N. C. Part Two.—Recreation and Health.—Bureau Social Education, National Board of the Y. W. C. A., New York City.

The Official Series on Postive Health is issued in two forms, viz., Hand Book and Pamphlets. The Hand Book contains six chapters. The Pamphlets are six in number. Each pamphlet is a reprint of the corresponding chapter in the Hand Book. For example, Pamphlet V of the Series of the Pamphlets is the same as Chapter V in the Hand Book.

Each organization within the Women's Foundation for Health will use this official series as a common text and each organization will execute as much of the program as its organization is able to do.

The cooperating National Organization whose health activities are correlated are as follows: National League of Women Voters; American Association of University Women; National Association of Deans of Women; American Home Economic Association; Council of Jewish Women; General Federation of Women's Clubs; Medical Women's National Association; National Board of Young Women's Christian Associations; National Congress of Mothers and Parent-Teachers Associations; National Council of Women; National Federation of Business and Professional Women's Clubs; National League of Women Workers; National Women's Christian Temperance Union; National Women's Trade Union League; Women's Department: National Civic Federation.

Respectfully submitted.

Lenna L. Meanes, M.D., Chairman.

REGISTRATION AT ST. LOUIS

The total registration at the St. Louis session was 5,174. Below are given two summaries, one by sections and one by states:

REGISTRATION OF SECTIONS

Practice of Medicine	1,667
Surgery, General and Abdominal	1,171
Obstetrics, Gynecology and Abdominal Surgery	276
Ophthalmology	314
Laryngology, Otology and Rhinology	285
Diseases of Children	237
Pharmacology and Therapeutics	26
Pathology and Physiology	84
Stomatology	34
Nervous and Mental Diseases	128
Dermatology and Syphilology	112
Preventive and Industrial Medicine and Public Health	163
Urology	166
Orthopedic Surgery	91
Gastro-Enterology and Proctology	108
More than one section, or no section given	312
	5,174

REGISTRATION BY STATES

Alabama	22	Nevada	2
Arizona	4	New Hampshire	4
Arkansas	129	New Jersey	16
California	73	New Mexico	6
Colorado	69	New York	147
Connecticut	13	North Carolina	16
Delaware	1	North Dakota	6
Dist. of Columbia	22	Ohio	204
Florida	12	Oklahoma	168
Georgia	23	Oregon	20
Idaho	1	Pennsylvania	141
Illinois	1,033	Rhode Island	2
Indiana	236	South Carolina	10
Iowa	147	South Dakota	11
Kansas	211	Tennessee	123
Kentucky	136	Texas	167
Louisiana	74	Utah	7
Maine	3	Vermont	5
Maryland	26	Virginia	22
Massachusetts	48	Washington	18
Michigan	101	West Virginia	17
Minnesota	87	Wisconsin	80
Mississippi	36	Wyoming	5
Missouri	1,346	Miscellaneous	41
Montana	11		
Nebraska	72	Total	5,174

THE SCIENTIFIC ASSEMBLY

THE OPENING GENERAL MEETING

Tuesday Evening, May 23

The opening meeting of the Association was held at the Odeon Theater, and was called to order at 8:30 by the President, Dr. Hubert Work, Pueblo, Colo.

Rt. Rev. Daniel S. Tuttle delivered the invocation.

Addresses of Welcome

After announcements of entertainments by Dr. Robert E. Schlueter, chairman of the Local Committee of Arrangements, the acting mayor of St. Louis, Mr. Louis P. Aloe, was introduced, and delivered the following address of welcome:

ADDRESS OF WELCOME BY ACTING MAYOR ALOE

Mr. Chairman, Ladies and Gentlemen: As acting mayor of St. Louis, it is my profound privilege and pleasure to greet you and to welcome to our city the delegates of the Seventy-Third Annual Session of the American Medical Association. The city of St. Louis embodies and blends the culture of the East, the energy of the North, the hospitality of the South and the vision of the West, and in that spirit, which so well typifies our city and with particular reference to the element of our well known Southern hospitality, I bid you welcome. (Applause.)

I enjoy this opportunity very much indeed, for not only do I speak to you tonight as acting mayor, but it so happens that ever since my school days I have been engaged in the surgical instrument trade, and thus I am also able to speak to you as a semiprofessional medical man; as one who has enjoyed the privilege of intimate association with the physicians and surgeons of America; as one who has a rather fair knowledge of the American Medical Association, its purposes, its aspirations and its ideals.

I am told that this is your fifth session held in St. Louis, and that our city has the proud distinction of having furnished three past presidents, Dr. Charles A. Pope, Dr. John T. Hogden and Dr. Elisha H. Gregory; and I bow my head in respect to the sainted memories of these splendid men as well as that of Dr. William Beaumont, the most distinguished St. Louis physician of all times. (Applause.)

I am also told that from a very humble beginning, with only several hundred members, this Association has evolved until it stands today as one of the great commanding national associations of America. I know of my own knowledge that you have aroused the best energies of all the physicians of this land, that you have called into the great arena for the modern development of medicine and surgery the best there is of the brain and the sinew and the soul of your profession, and that you offer to physicians in the humblest walks of life the vehicle that should kindle in their hearts the desire and ambition to do better and greater things, and, above all, you stand unalterably for a policy under which the United States is destined to become the leading nation of the world in scientific medicine.

In my daily contact with physicians I have often felt that this great central medical body comes far from occupying the place which it should occupy in the hearts and minds of our citizens. How few of the general public realize that, when the standard of medical education is elevated, when the medical laws of the various states are made more stringent, when the products of pharmaceutical houses are rigidly scrutinized and tested, when it is insisted that the rural population is entitled to and shall have physicians of the same educational qualifications as those of the larger cities, those who primarily profit thereby, those who are benefited and those who are protected thereby, are the men and women, the children and the babies, in short, the entire citizenship of America. (Applause.)

It has also seemed to me that the American Medical Association stands as a great public benefactor, as a sentinel on guard for the physical welfare of the race, saying to the charletan, the impostor and the quack, as General Joffre said to the German invading army at the Battle of the Marne, "Halt: thou shalt not pass!" (Applause.)

As a medical center, we modestly maintain that our city ranks as the equal of any in the United States. We point with considerable pride to our two great universities of medicine, unsurpassed by any in the country and classed as A plus. We point to the wonderful development of our group of modern, up-to-date hospitals, to the high standard of our medical clinics, and to the truly magnificent and progressive municipal institutions, for the treatment of diseases of every character and description. To these, in particular, we point with especial pride; let me emphasize this, if I may, to the outstanding overshadowing personnel of our medical men: men who are nationally known and recognized; men who are leaders in their respective fields of endeavor; men who have made valuable contributions to medical science. (Applause.)

In my official capacity I happen to be the presiding officer of our municipal legislative body, and I am happy to be able to tell you a fact that no doubt you will be interested to know, that recently, responding to a demand made upon us, we adopted measures which make us the first and only city in the United States authorizing by legislative enactment the furnishing of the material by the municipality for the practice of animal experimentation in the medical schools. (Applause.)

And with the acquisition of a great Public Health Service hospital, conducted by the federal government, and the further acquisition of the National Shriners Hospital for the treatment of crippled children, both to be built here soon, we feel that, indeed, we are marching forward, and that St. Louis as a great medical center is on the way.

In closing, may I be permitted to pay this one tribute to your profession, without being charged with a desire to indulge in Fourth of July oratory—that during the period of the World War, notwithstanding the fact that medical men had nothing but their incomes derived from their practice with which to sustain their families—they rose up in all their majesty and wrote their proud war record known today throughout the entire confines of this country, as among the first to volunteer for service, as among the most untiring, the most loyal, the most patriotic, the most 100 per cent. American citizens in these United States. (Applause.)

And now in bidding you good-night, permit me to extend to you the sincere greetings of all of our people, and in their name and in their behalf, and in behalf of the municipality that I have the honor to represent, to bid you a cordial and whole-hearted welcome, and at the same time to convey to each and every one of you the mystic key that unlocks the door of this city's wide domain of beauty, of pleasure and of boundless hospitality. (Applause.)

ADDRESS OF WELCOME BY DR. WILLIAM W. GRAVES, PRESIDENT OF ST. LOUIS MEDICAL SOCIETY

Dr. William W. Graves, president of the St. Louis Medical Society, was introduced, and delivered an address of welcome on behalf of the medical profession, saying:

Mr. President and Fellows of the American Medical Association, Ladies and Gentlemen: The city of St. Louis and the St. Louis Medical Society have had the honor of being host to the American Medical Association on four previous occasions (in 1854, 1873, 1886 and 1910). The St. Louis Medical Society is the largest unit of the American Medical Association west of the Mississippi River, and is one of the oldest medical societies in the country. In this, the eighty-sixth year of its existence, it numbers more than 1,000 members. The St. Louis Medical Society has always stood for good citizenship. No medical society of similar membership had larger representation in the great World War. The members of the St. Louis Medical Society hold inviolate these principles: (1) that only those adequately trained in the arts and sciences should presume to exercise the functions of the physician, and (2) that all those exercising such functions who do not constantly strive to recognize, control and prevent disease are real foes to human progress. The members of the St. Louis Medical Society have always striven for healthful conditions in the individual, in the home and in the masses; hence they have been prime factors in making St. Louis one of the most healthful cities in the world today. Indeed, their past achievements and present activities are comparable to the best medical endeavor anywhere.

Mr. President, the St. Louis Medical Society is proud of its affiliation with the American Medical Association. This Association has unceasingly opposed nostrums, quackery, ignorance and superstition, not by persecution, but by earnest and consistent effort in education. Thus has the American Medical Association become a great force, not for human retardation, but for human enlightenment and human advancement. It has raised the standards of education in our medical schools. It has fostered postgraduate medical work. It has increased medical and public interest in public health matters. It has promoted the aims and ideals of physicians everywhere. In all these and in other directions the American Medical Association has done more to further human health, and consequently human efficiency, than any other single agency in human history. Mr. President, every member of the St. Louis Medical Society feels that no greater privilege can come to the citizens of a community than that of entertaining this, the most useful of all medical organizations. The hearts of more than a thousand St. Louis physicians beat in unison with joy on this occasion, as the St. Louis Medical Society again extends to the American Medical Association a whole souled and sincere welcome.

ADDRESS OF THE PRESIDENT

President Work, in introducing his successor, said:

As President of the American Medical Association, I am about to surrender the title of the most distinguished honor the American Medical Association can bestow on a Fellow, and I am about to bestow it upon a member of the medical profession who has distinguished himself, not only in this country as a teacher and as a practitioner of medicine, but abroad, by his writings on medical subjects. It is no longer possible for any man to introduce my successor to any American medical audience; I therefore present your new President, Dr. George E. de Schweinitz, Philadelphia. (Applause.)

Dr. de Schweinitz then delivered his address, which was published in The Journal, May 27, p. 1583.

SCIENTIFIC EXHIBIT

This year the exhibit exceeded expectations in the number of exhibitors, while the quality of the work shown was of a high order. The setting for the exhibit was much better than usual; the booths were of pleasing appearance, painted green with white trimmings, and with overhanging plants. As has been customary, the exhibit was classified. The educational section included a number of exhibits of charitable or semipublic organizations. Probably the pathologic section was the most interesting. Here one found such exhibits as that on pelykography (Dr. Reuben Peterson, University of Michigan); studies on ringworm fungi (Mr. Robert Hodges, University of Alabama); specimens of flagellate protozoa under well illuminated microscopes (Dr. Kenneth Lynch, Dallas, Texas); work on the bile factor in pancreatitis (Drs. F. C. Mann and A. S. Giordano, Mayo Clinic); gross pathologic specimens and comparative roentgen-ray records (Dr. Eugene Opie, St. Louis), and the excellent work on renal circulation (Department of Urology, University of California). The most striking exhibit in the surgical section was the display of plaster casts and comparative photographs dealing with facial surgery; one half of the exhibit was devoted to civilian work, the other half to war reconstruction (Dr. Vilray P. Blair, St. Louis). In the medical section the diagnosis of syphilis from the laboratory point of view was well presented (Dr. Loyd Thompson, Hot Springs, Ark.); in another booth was an interesting exhibit of pigeons illustrating vestibular tremors (Dr. C. L. Woolsey, Boston). In addition to the foregoing were a large number of electrocardiographic exhibits. The total number of exhibitiors was forty-eight, thus divided: educational, twelve; pathologic, ten; surgical, six; medical, six; electrocardiographic, fourteen. On the stage of the auditorium the work of the various councils and the chemical laboratory of the American Medical Association was shown.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards, Scientific Exhibit, makes the following recommendations:

The Gold Medal to Drs. Frank Hinman, D. M. Morison, A. E. Belt and R. K. Lee-Brown of the University of California Medical School, for a study of renal circulation.

The Silver Medal to Mr. Robert A. Hodges, University of Alabama, for a study of certain culture-medium characteristics of ringworm fungi.

The Certificate of Merit to Dr. Vilray Papin Blair, St. Louis, for an exhibit of photographs and plaster casts showing various types of face restoration.

The committee also desires to give honorable mention to the following exhibitors:

Dr. K. M. Lynch, Dallas, Texas, for a study of the cultivation and differentiation of flagellate protozoa.

Drs. F. C. Mann and Alfred S. Giordano, Mayo Foundation, Rochester, Minn., for studies on the bile factor in pancreatitis.

Dr. Eugene Opie, Washington University, St. Louis, for a comparison of roentgen-ray records and gross pathologic specimens.

Miss Elizabeth Green, Barnes Hospital, St. Louis, for a demonstration of methods used in distributing books in hospitals.

The committee desires to suggest that in future prospective exhibitors be notified that awards are made for individual investigations, which are judged on the basis of originality and excellence of presentation.

W. B. Cannon,
George Dock,
Louis B. Wilson.

MOTION PICTURE THEATER

The motion picture theater, run in connection with the scientific exhibit, operated continuously from noon on Monday to noon on Friday. Sixty different periods were scheduled, either of thirty or of forty-five minute duration. So well did the speakers or exhibitors of films cooperate that the schedule was maintained strictly on time except in one instance, and then it was only seven minutes off. Attendance was so good that frequently people had to be turned away. The excellence of the program and the interest shown augurs well for this feature in future meetings.

Antiseptic Action of Coal-Tar Dyes.—At a recent meeting of the Society of Chemical Industry at Manchester, the facts concerning the extraordinarily potent antiseptic properties possessed by many of the coal-tar dyes was discussed. Bechhold and Ehrlich, in 1906, studied the antiseptic action of halogen compounds of phenol and naphthol, and obtained results which show clearly the extraordinary variations in antiseptic action produced by slight changes in chemical constitution, and also the markedly specific action of some compounds. These points are illustrated by stating the minimal lethal concentration for certain micro-organisms of three closely allied naphthol compounds: dibrombetanaphthol is fatal to *B. coli* in a concentration of 1:30,000, and to *B. diphtheriae* in one of 1:40,000; tribrombetanaphthol kills *B. coli* in a concentration of 1:2,000, and *B. diphtheriæ* in one of 1:400,000; tetrabrombetanaphthol has a lethal action on *B. coli* in a concentration of 1:1,000, and on *B. diphtheriæ* in one of 1:200,000.

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SATURDAY, JUNE 3, 1922

THE ST. LOUIS SESSION

The Annual Session of the American Medical Association in 1922 at St. Louis must be regarded as the most successful of any thus far held—taking all things into consideration. The registration (5,174) has been exceeded only three times: in 1908, at Chicago (6,446); in 1918, again in Chicago (5,553), and last year at Boston (5,506). But both Chicago and Boston are centers of population far larger than St. Louis, and each had a much larger number of resident physicians registered.

The scientific work was unusually good; many of the halls carried the "Standing Room Only" sign during the presentation of papers of unusual interest and during the symposiums on special subjects. Three of the sections combined in a symposium on the internal secretions, and two sections combined in a symposium on gastric and duodenal ulcer. Other symposiums on syphilis and malignant tumors attracted attention, and a group of papers on blood and urine chemistry in relation to renal function aroused extended discussion.

The Scientific Exhibit, as reported elsewhere in this issue, was elaborate and of an unusually high order, many stating it to be by far the best yet presented at an annual session. The Committee on Awards had great difficulty in making its selections because of the excellence of the numerous exhibits. The motion picture theater, a part of the Scientific Exhibit, was constantly attended by from three to five hundred persons, and repeatedly, large numbers were unable to gain admission.

The exhibitors in the Commercial Exhibit would seem to have made a special effort this year to present the scientific side of the provision of accessories to medical science. Pharmaceutical houses showed in miniature the methods of preparation of drugs and food products; publishing concerns had available new editions and historical exhibits of great interest, and manufacturers of apparatus demonstrated advances in the form of roentgen and light therapy and in the use of electrical devices as aids in diagnosis. All of the exhibits were attended by large numbers of physicians, who were practically unanimous in expressing their satisfaction with the value of the displays.

The press of St. Louis featured the annual session of the Association throughout the week, devoting much space to descriptions and photographs of various aspects of the organization and scientific work; moreover, the accounts were marked by an exceptional conservatism and accuracy.

Too much praise cannot be given the Local Committee of Arrangements for the preparations made for this session. From the first there was earnest and hearty cooperation between the Local Committee and the local profession; likewise, between the Local Committee and the Central Office of the Association. As might have been anticipated, therefore, the results were satisfaction in every particular. This applies to meeting places, to the social functions and, above all, to hotel accommodations. While the attendance was even larger than was expected, practically every one was satisfactorily provided for in hotels, and a few only in private homes.

ECZEMA IN BREAST-FED INFANTS

The etiology of eczema has long been a puzzling problem in medicine; hence the recent suggestion that some of its forms may represent a consequence of specific hypersusceptibility to foreign proteins has created renewed interest in the disease. It has required no unusual stretch of the imagination to conceive how persons on mixed diets might react by skin manifestations to the chance ingestion of some food item to which the individual concerned was demonstrably hypersensitive. Numerous records have been accumulated, since the study of protein sensitization has become prominent and its possibilities have been more widely recognized by physicians, to show illustrative instances of positive skin reactions associated with dietary factors. Withdrawal of the offending foods is promptly followed by relief of symptoms; and cutaneous tests with the suspected product in sensitive patients are wont to produce positive responses.

That comparable manifestations of sensitization to foods should occur in breast-fed infants has seemed unlikely. One might suppose that the organism of the young is adapted to utilize mother's milk successfully, if it can tolerate anything. Hence the assumption that the eczema of breast-fed babies could be associated with the sort of dietary factors incriminated in the cases referred to has seemed quite untenable. A recent writer has admitted that the etiology of eczema in the breast-fed child has been almost a mystery; treatment has been empiric, and results have been unsatisfactory. It comes as both a surprise and a satisfaction to learn that breast milk may transmit foreign proteins derived from the foods of the mother, and that they may prove to be responsible for eczema in a large percentage of breast-fed babies.[1]

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[1] Shannon, W. R.: Demonstration of Food Proteins in Human Breast Milk by Anaphylactic Experiments on Guinea-Pigs, Am. J. Dis. Child. **22**: 223 (Sept.) 1921.

Shannon,[2] however, has recently fortified his earlier views on this theory of the etiology of eczema by new evidence. Possible sensitization of the infants has been determined by the now well known methods[3] of cutaneous tests with somewhat purified food proteins. Thereupon, removal of certain protein sources from the diet of the mother usually results in cure of the condition in the patient. In cases in which all the foods cannot be eliminated from the diet of the mother, their limitation will often result in improvement of the eczema, presumably because there is a threshold in the mother up to which the food may be eaten without appearing in the breast milk. According to Shannon, sensitization is usually multiple, and may be due to a majority of the foods in the dietary of the mother. Sensitization tends to become more widespread in a great many cases as time goes on, owing to the acquisition of sensitization to new foods. As the result of his investigations, Shannon concludes that the proper study of all cases of eczema in breast-fed babies which do not yield promptly to the older methods of treatment requires the determination of sensitivity in the infant to all the foods contained in the diet of the mother and, in the event of exacerbations, the frequent repetition of these tests. Until the physician has done this, says Shannon, he cannot be considered as having done his whole duty to the patient. The newer technic of clinical diagnosis has once more augmented the possibilities of good therapy and rational prophylaxis.

LIFE AT HIGH ALTITUDES

The entrance of natives of the temperate zones more or less permanently into the activities of the tropics, with the extreme unlikeness of climatic conditions, has often raised the question of the possibility of the physiologic adjustment of white men to the tropical environment. The differences in temperature, humidity and solar radiation, not to mention the unusual character of the food supply and the diseases peculiar to the hotter regions of the earth, call for adjustments of a biologic as well as a sociological sort to a degree that has elicited many pessimistic statements. The questions at issue, many of them proper subjects for direct experimentation, are still being debated; and such scientific laboratories as may now be found in India, in the Philippines and in the Federated Malay States, for example, are helping to contribute answers to the problems raised by man's increasing migrations, made possible by the growing ease of transportation.

Similarly, a larger interest in the physiology of life at high altitudes has been awakened by the suddenly arrived prominence of aviation. Up to the time of the advent of the airship and the aeroplane, the occasional contributions to the subject were associated with ballooning or with mountaineering; indeed, the common use of the terms "alpinism" and "Alpine physiology" two decades ago attests to the direction of the interest in the subject. The Alps with their scientific laboratory on Monte Rosa became the Mecca for students of the effects of rarefied atmosphere. Today, life at high altitudes is enforced on a considerable number of persons. Can they become adjusted to it, or do the "dizzy heights" suggest a menace to unacclimatized dwellers on the lowlands?

Schneider[1] has well designated altitude as a climatic condition that causes physiologic changes which affect our bodily comforts. Among its variables, he remarks, are lowered atmospheric pressure, partial pressure of oxygen, temperature and humidity, and increased intensity of sunshine and electrical conditions. While in the past the effects of altitude have been attributed to one or more of these variables, it is today recognized that the controlling element in the physiologic reactions is the diminished partial pressure of oxygen and the consequent imperfect aeration of the arterial blood. According to the best evidence now available, between 23,000 and 25,000 feet appears to be the upper altitude limit for consciousness for unacclimatized men. Even much lower altitudes provoke marked discomfort, as even an unfatigued traveler reaching Pike's Peak, at a height of 14,100 feet, may observe. Yet there are permanent residential camps at altitudes as great as this in which persons reside for long periods. Some of these are found in the Andes, in Peru, where, according to Barcroft,[2] the native population has lived for many generations. The mining centers there likewise contain Americans who have migrated in more recent times. The investigations there by the latest expedition of English and American physiologists early in this year showed that, despite the low oxygen tension of the atmosphere at 14,000 feet, those acclimated could engage in a fair amount of sustained mental work for long periods; but with regard to muscular work, which calls for oxidative metabolism, there were evident limitations to the effort of even the most acclimatized. The natives can perform remarkable feats of work, but only when there are frequent pauses to enable them to "square the oxygen account." The arterial blood was usually only about 85 per cent. saturated with oxygen. The shape of the chest, as indicated by the roentgenograms, showed that the sternum was carried in an elevated position, and the ribs were more nearly horizontal than in the normal.

The alleged compensatory increase in the number of red blood cells whereby the oxygen-carrying capacity of the circulating medium is augmented[3] was also noted by the Andean investigators. Among residents at 14,000 feet, erythrocyte counts up to 8,000,000 per cubic millimeter were made, with corresponding hemoglobin values. Barcroft concluded that the study of the blood gases in the residents of the Peruvian Andes suggested that the blood acquires its oxygen more easily at high altitudes than at sea level. It is not yet clear whether the theory of oxygen secretion by the lungs, as propounded by Haldane after the Anglo-American Pike's Peak expedition, is to be revived. He maintained that diffusion alone cannot account for the effective intake of oxygen at altitudes, but that it is supplemented by an active secretion of the gas by the pulmonary epithelium. Most investigators[4] have insisted that at both high and low altitudes the oxygen enters the blood solely by diffusion through the epithelium of the lungs. At any rate, it must be admitted today that "life can be carried on in a comparatively comfortable manner without production of gross permanent disabilities, consistently with the degree of unsaturation of the blood" already described. The ability of the human organism to adjust itself to adverse physiologic circumstances is truly remarkable.

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[2] Shannon, W. R.: Eczema in Breast-Fed Infants as a Result of Sensitization to Foods in the Mother's Dietary, Am. J. Dis. Child. **23**: 392 (May) 1922.

[3] Walker, I. C.: Oxford Medicine **2**: 122.

[1] Schneider, E. C.: Physiological Effects of Altitude, Physiol. Rev. **1**: 631 (Oct.) 1921.

[2] Barcroft: The Physiology of Life on the Andes, Brit. M. J. **1**: 648 (April 22) 1922.

[3] A review of this subject is given by Bürker, K.; Jooss, E.; Moll, E., and Neumann, E.: Ztschr. f. Biol. **61**: 379, 1913.

SIMPLE GOITER—A PREVENTABLE DISEASE

The results of the elaborate investigations in this country by Marine and his collaborators, details of which have repeatedly been reported in The Journal, have led him to state that "simple goiter is the easiest of all known diseases to prevent." Similarly McCarrison,[5] speaking on the basis of a long experience in both Great Britain and India, has lately remarked that our knowledge of the causes of simple goiter "is now sufficiently definite to enable us to prevent and cure his condition. It is preeminently one which need not exist in this country [England] if such knowledge of ts causation and of its prevention as we already possess be but applied."

Such unqualified announcements constitute a chalenge to the medical profession, and a mandate to preventive hygiene in which the public may have a vital nterest. The problem is by no means one of minor onsequence from a national standpoint. The estimate f the Goiter Commission of France in 1874, indicating he existence of 500,000 goitrous persons and 120,000 retins and cretinoid idiots in that country, or, again, Kocher's statistics showing 80 pér cent. or more of the choolchildren in Berne to be goitrous, may seem to us in the United States and in 1922 as the ancient history f far-away regions. When we are assured by the apidly accumulating data that thousands of our merican youth show the endemic incidence of simple oiter, the seriousness of the situation is "brought ome." Thus from Camp Lewis, Washington, Kerr[6] eported the examination of 21,182 recruits, with the finding of 1,276 large or well formed goiters. Hence Kimball,[7] who has reviewed many of the authentic records, frankly concludes that goiter may be considered as distinctly endemic in certain sections of the United States. Furthermore, it is not irrelevant from an economic standpoint to note that domestic animals are also the victims of thyroid disorder.

Science is now prepared to contribute certain precise and well established information in respect to the thyroid structures. Iodin is essential for their normal function. As soon as the store or supply of this element decreases markedly, active hypertrophic and hyperplastic changes occur in the thyroid. They are therefore due to a deficiency of iodin, and these anatomic changes do not occur when the iodin store of the glands is maintained. Simple goiter is thus the expression of a deficiency, and prophylaxis consists in prevention of the deficiency. The elaborate clinical experiments on schoolchildren at Akron and elsewhere, the details of which have lately been summarized by Kimball,[7] have furnished conclusive evidence of the effectiveness of assuring the intake and absorption of a few milligrams of iodin each day in the regions where the deficiencies somehow arise. The experience of Klinger,[8] in Switzerland, is eminently confirmatory, and it now seems likely that the plan of goiter prevention will become a public health measure in "the most noted endemic goiter nation in the world." McCarrison,[9] who has long been a champion of the importance of gastro-intestinal infection as a goiter-producing influence, does not hesitate to stress the significance of iodin. Thus, in an attempt to reconcile conflicting views, he[5] has asserted that "the factors which give rise to goiter center round the supply of iodin and the needs of the thyroid gland for iodin."

> "Now this supply of iodin," says McCarrison, "is dependent on a multiplicity of factors both extrinsic and intrinsic to the body. It is dependent on the iodin content of the food and water; and this in its turn is dependent on altitude, distance from the sea-coast, and the iodin content of the soil from which both vegetable foods and water derive their iodin supply. Again, the supply of iodin to the thyroid gland, and of the gland's iodin-containing secretion to the body cells, is dependent upon the adequate absorption and assimilation of iodin; this in its turn is influenced by factors such as disordered function of the gastro-intestinal tract and bacterial intervention in the digestive tube, both of which may interfere with the adequate absorption and assimilation of iodin. On the other hand, the needs of the thyroid for iodin are dependent on the needs of the body cells for the active iodin-containing principle of the gland, and these in their turn are dependent upon a multiplicity of factors, such as food balance (excess of fats, for example, increasing these needs), metabolic variations, age, sex, puberty, sexual activity, pregnancy, menstruation, infections and season. There is further to be considered the capacity of the thyroid gland to utilize iodin and efficiently to manufacture its hormone; here are involved such factors as heredity and excessive stimulation of the gland, which may be induced by nervous, toxic or infectious influences, and impairment of its function,

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[4] Barcroft, J.; Cooke, A.; Hartridge, H., and Parsons, T. R.: J. hysiol. **53**: 450, 1920.

[5] McCarrison, R.: Simple Goiter, Brit. M. J. **1**: 636 (April 22) 22.

[6] Kerr, W. J.: Arch. Int. Med. **24**: 347 (Sept.) 1919.

[7] Kimball, O. P.: The Prevention of Simple Goiter in Man, Am. J. M. Sc. **163**: 634 (May) 1922.

[8] Klinger, R.: Schweiz. med. Wchnschr. **51**: 12 (Jan. 6) 1921.

[9] McCarrison, R.: The Thyroid Gland in Health and Disease, London, 1917.

which may be induced by hereditary influences or by toxic or microbic agents, the two last being frequently of gastro-intestinal origin."

The remote cause of goiter and the local factors which in ultimate analysis distinguish physiologic life in goitrous and nongoitrous districts frankly remain to be elucidated. Nevertheless, as Kimball concludes, the same imagination which developed the practical application of the principle of the prevention of goiter can now see, a few generations hence, the closing of the chapters on endemic goiter and cretinism in every civilized nation in the world. What are we doing to facilitate this fortunate outcome?

PURGATION AND RENAL EXCRETION

The Pharmacology of Useful Drugs [1] points out that the want of exact knowledge concerning the absorption of drugs is a common cause of disappointment. The mere fact that a substance is readily soluble in water does not of itself guarantee prompt absorption from the alimentary tract. On the other hand, seemingly insoluble substances, such as certain glucosids or resins, seem to be absorbed with considerable readiness. Again, the unlike permeability of different regions of the long gastro-intestinal canal to substances represents another factor of uncertainty regarding their fate in absorption. The stomach, for example, admittedly does not function actively under most conditions as an organ for absorption. Substances which penetrate the alimentary barrier are for the most part carried by the portal circulation to the liver, where they may be "filtered out" or altered before being passed on to the general circulation; but, thanks to its peculiar blood supply, the rectum affords a direct circulatory path for absorbed compounds into the systemic circulation, thus accounting for the rapid action of potent substances introduced into the end of the alimentary canal.[2]

That conditions associated with the intestinal canal may influence the excretory functions of the body through renal channels has not been clearly recognized. Macht [3] has recently made the unique observation that the excretion of a readily eliminated compound, phenolsulphonephthalein, widely used in tests of kidney function, may be markedly delayed by previous administration of saline purgatives. It might be supposed, at first consideration, that this unexpected outcome is attributable to an interference of the salts with the absorption of the test drug; but the retarded elimination is also noted when phenolsulphonephthalein is introduced by intravenous channels which take it into the circulation without reference to the alimentary tract. The phenomenon of the delay in the excretion of the drug after oral administration of saline purgatives has been noted in man as well as in animals, and invites attention in clinical circles. The saline cathartics are so commonly administered that their possible effect on the absorption, distribution and excretion of drugs or toxins deserves most careful consideration in the light of Macht's findings. As he himself points out, it would seem to be of vital importance not to administer the salines simultaneously with or a short time before the injection of phenolsulphonephthalein for the performance of kidney function tests. Whether or not other types of purgatives affect elimination in a similar way remains to be learned; at any rate, the routine practice of purging patients with saline solutions prior to surgical operations may need to be considered in relation to possible effects on excretion, particularly if the results discovered by Macht are found to be due to a depletion of the body tissues in fluid diverted to the intestinal lumen.

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[1] Hatcher, R. A., and Wilbert, M. I.: The Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 7.

[2] Meyer, H. H., and Gottlieb, R.: Die experimentelle Pharmakologie, Vienna, 1921, p. 194.

[3] Macht, D. I.: Concerning the Effect of Saline Purgatives on the Absorption and Excretion of Phenolsulphonephthalein, J. Urol. **7**: 273 (April) 1922.

UNDERNUTRITION IN COLLEGE WOMEN

The dire results of undernutrition for the welfare and the physical and intellectual efficiency of man have often been sketched since the beginning of the World War in 1914. The pictures of physiologic poverty have not been merely the fantastic creations of political propagandists. The effects of an insufficient food allowance have been attested by careful observers, persons of scientific accomplishment, who are accustomed to distinguish critically between fact and fancy. Rubner has remarked that the first result of an insufficient diet is a decrease in the efficiency of laborers.[1] This is shown by the fact that fatigue comes on more quickly than usual. There is a decrease in the muscular efficiency not only of paid laborers, but also of persons living sedentary lives; the muscular activities which are concerned with the normal preservation of health become restricted. The love of roaming and of sport is lost, children cease to play, and a person avoids as far as possible all bodily exertion. The mood of the individual affects the result. Thus, by special effort, one may overcome the sensation of fatigue for a certain number of days in order to accomplish a definite result, as does the soldier who advances by magnificent forced marches in anticipation of victory. But this is a very different matter in comparison with the accomplishment of work in the dull, monotonous daily grind of civilian life. During the war, certain Italian farm laborers, receiving 450 gm. of flour daily, accomplished their work. When this ration was cut to 250 gm., they refused to work. The same apathy is true as regards mental work. The love of accomplishment, the power of performance and the note of personal initiative, which under ordinary conditions increase the assimilation of food and favor muscular energy, are absent. As the mind becomes depressed, muscular movements become listless. Lusk relates that a Leipzig mathematician, to conserve his food requirement, remained in bed most of the day, doing his intellectual work there.

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[1] This and the following comments are reported in an illuminating paper by Lusk, Graham: The Physiological Effect of Undernutrition, Physiol. Rev. **1**: 523 (Oct.) 1921.

Similar physical reactions to undernutrition were reported by F. G. Benedict,[2] as the outcome of the experiments of the Boston Nutrition Laboratory of the Carnegie Institution on prolonged restricted diets in young men. But these were the results of voluntary and investigational procedures. One reads nowadays of the presumable widespread prevalence of malnutrition and undernutrition among American children, although much that is problematic remains to be elucidated before a perfect program of reform, or even an adequate conception of the possible defects, can be presented. It comes as somewhat of a surprise, however, to learn that actual undernourishment may be quite prevalent, not merely in early youth or where there are pangs of poverty, but also among older persons of intellectual attainment. Blunt and Bauer [3] of the University of Chicago have found no difficulty in selecting for study a group of American college women who were underweight by comparison with life insurance standards, and who were of a nervous type. Their basal metabolism, like hat of some underweight women observed n the Boston Nutrition Laboratory, averaged almost normal. Their food consumption, however, was ow, averaging only 1,830 calories, or 37.3 calories per kilogram. Nearly all of them ate less than 500 calories bove their basal metabolism requirement. One cannot avoid the suspicion that many of the groups were hardly eating enough for their daily needs, and certainly not enough for any marked gain in weight. If his should prove to be a widespread situation, perhaps he problem of adequate nutrition, with its corollary of proper human ambition, is not confined to those groups lone about which concern has been expressed of late.

Current Comment

RAY LYMAN WILBUR—PRESIDENT-ELECT

The selection of Dr. Ray Lyman Wilbur as president-elect of the American Medical Association brings to that high office a man whose record is conspicuous for many achievements, and who has commanded recognition in many activities for marked ability in organization and leadership. Dr. Wilbur was born in Boonesville, Iowa, April 13, 1875, and removed to California when a boy. He was graduated by the Riverside High School, and received his A.B. degree from Stanford University in 1896, and the A.M. degree the year following. In 1899 he received his medical degree from Cooper Medical College of San Francisco, which later became the medical department of Stanford University. Following his graduation, he became instructor of physiology in his Alma Mater from 1896 to 1897; lecturer and demonstrator in physiology, 1899 to 1900, and assistant professor of physiology, 1900 to 1903. At this time he went to Europe and continued his studies at Frankfort on the Main and in London. He returned to California to take up the practice of medicine in 1909 and in that year was appointed professor of medicine at Cooper Medical College. He retained his professorship in medicine and practiced his profession from 1909 to 1916, and was dean of the medical school of Stanford University during the last five years of his professorship, 1911 to 1916. Following the retirement of President David Starr Jordan of Stanford University in 1913, Professor John Casper Branner, head of the geology department, was made president, with the understanding that he would retire at sixty-five years of age, two years later; at that time, the latter part of 1915, the trustees of Stanford University, in recognition of his extraordinary administrative ability, selected Dr. Wilbur for the position of president. His work in this position has fully justified the choice. With the entrance of the United States into the World War, Dr. Wilbur was called by another Californian, Mr. Herbert Hoover, to assist in one of the fundamental activities necessary to a successful prosecution of the

Ray Lyman Wilbur, M.D.
President-Elect of the American Medical Association

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[2] Benedict, F. G.; Miles, W. R.; Roth, P., and Smith, H. M.: uman Vitality and Efficiency Under Prolonged Restricted Diet, Pub. 30, Carnegie Institution of Washington, 1919.

[3] Blunt, K., and Bauer, V.: Basal Metabolism and Food Consumption of Underweight College Women, J. Home Econom. **14**: 226 (May) 922.

conflict, as chief of the Conservation Division of the United States Food Administration. For this work, Dr. Wilbur has earned the gratitude of the entire civilized world. In 1919 he received the honorary degree of LL.D. from the University of California, and from the University of Arizona. At the 1920 Session of the American Medical Association, Dr. Wilbur was appointed to the Council on Medical Education and Hospitals, and in this work he has shown a thorough insight and sympathy with the problems of the practicing physician and with the problem of satisfactorily coordinating the work of the social agencies with that of the medical profession. Dr. Wilbur is a member of many scientific organizations; was president of the American Academy of Medicine, 1912 and 1913, and of the California Academy of Medicine, 1917 and 1918. By electing him to its presidency the American Medical Association has recognized a man typifying the highest ideals in medicine with a conspicuous gift for administration and leadership.

GALACTAGOGUES

The search for a substance that will promote the flow of milk is of long standing, like the quest of other so-called secretagogues. To the dairyman the possibilities of a successful galactagogue loom large; and it is obvious that effective measures for promoting lactation in the human species are not without interest to the medical profession. Many have been the false hopes, and varied the substances, which have been tried and found wanting. In several instances, an assumed galactagogic effect has been discovered, on careful examination, to be merely the outcome of a reaction of musculature within the mammary organ to some drug. Obviously, the mere expression or expulsion of preformed milk from the recesses of the glands, through contractions of unstriped muscles, is not equivalent to a true increased formation of milk. The total product secreted is not augmented, although the temporary discharge may be greater at some interval of measurement. Pituitary extracts, in particular, have been reputed to cause an actual increase of flow of milk from the mammary glands. In a recent reinvestigation of the subject, however, Rothlin, Plimmer and Husband[1] have demonstrated on lactating goats that pituitary extract produces a flow of milk only in the early stages of lactation. Its action is rapid and powerful, but of short duration. The flow (hypersecretion) is followed by a smaller quantity than normal (hyposecretion). The total volume of milk for each day is not altered, and the quality of the milk secreted is not altered. Incidentally, it may be noted that the secretory activity of the mammary gland is not influenced by the subcutaneous injection of epinephrin or ergamin, which act so readily on structures possessing a sympathetic innervation. Thus another of the many substances which have been vaunted as efficient agents for stimulating this important function fails to sustain the claims made for it; the true galactagogue remains to be found.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Illegal Practitioner Fined.—It is reported that Anulia Madden was recently convicted and fined $100 and costs, in the county circuit court, for practicing medicine without a license.

ARKANSAS

State Medical Meeting.—The forty-seventh annual meeting of the Arkansas Medical Society, the "home coming meeting," was held in Little Rock, May 17-19, under the presidency of Dr. Charles H. Cargile, Bentonville. The following officers were elected for the ensuing year: president, Dr. Robert Caldwell, Little Rock; first vice president, Dr. Ernest A. Purdum, Hot Springs; second vice president, Dr. Jefferson D. Southard, Fort Smith; third vice president, Dr. Lorenzo R. Evans, Mount Pleasant; treasurer, Dr. Robert L. Saxon, Little Rock, and secretary, Dr. William R. Bathurst, Little Rock (reelected). Hot Springs was chosen as the meeting place for 1923. By action of the council, financial aid and legal assistance were granted the state medical board in its fight against quacks.

CONNECTICUT

Connecticut State Medical Society.—The annual meeting of the society was held at Bridgeport, May 17-18, under the presidency of Dr. Charles C. Godfrey, Bridgeport. The following officers were elected for the ensuing year: Dr. David Russell Lyman, Wallingford, president; Drs. Samuel Pierson, Stamford, and Frederick Thomas Simpson, Hartford, vice presidents; Dr. Phineas H. Ingalls, Hartford, treasurer, and Dr. Charles W. Comfort, Jr., New Haven, secretary.

DISTRICT OF COLUMBIA

Interns' Reunion.—The third annual meeting of the Association of Former Interns of Freedmen's Hospital, Washington, will be held, June 6-8, under the presidency of Dr. Peter Marshall Murray, New York City. Dr. Walter Gray Crump, New York City, among others will give a special surgical clinic.

Rehabilitation Conference.—A conference on vocational rehabilitation was held in Washington, May 26-27, by the U. S. Veterans' Bureau. This conference was attended by educators, at least two from each of the fourteen districts in which the bureau operates, and by representatives from cooperation agencies and others interested in rehabilitating disabled ex-service men. The discussion covered the problems of rehabilitation, the policies of the bureau in training disabled men and securing their employment in gainful occupations, and the place of established educational institutions in providing this training. The opening address was given by C. R. Forbes, director of the bureau.

Committee Reports on Milk Distribution.—The House Committee on the District of Columbia has made a favorable report on the bill introduced by Congressman Focht, regulating the sale of milk within the District of Columbia. The purpose of the bill is to procure for the people of the District a pure and wholesome milk supply. All dairymen are placed under the control of the health officer of the District, who is authorized to seize all milk or cream which may violate numerous provisions of the bill designed to protect the public. Among the important provisions of the bill is the requirement that the holder of a dairy permit must report promptly to the health officer of the District all cases of communicable diseases occurring in any member of his family or hired help. Under present conditions, the District health department must wait until the presence of such a disease on a dairy farm is brought to its attention by an inspector or from other sources of information. Provision is made for the pasteurization of all milk and cream, except certified milk and raw milk of a certain quality. Such pasteurization must be done under regulations prescribed by the health officer and must be open to supervision by such official. Under present regulations, pasteurization is done without official supervision and without regulations. The measure contains other requirements for the protection of the milk supply of the District.

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[1] Rothlin, E.; Plimmer, R. H. A., and Husband, A. D.: Biochem. J. **16**: 3, 1922.

FLORIDA

Health News.—The Florida Public Health Association, in cooperation with the state board of health, has been holding a series of tuberculosis clinics in the state. The woman's clubs assisted in this work and the advisory nurse of the state public health association had charge of the clinics.——The bureau of communicable disease, under the direction of Dr. George A. Dame, Jacksonville, has organized a statewide campaign of education in regard to smallpox and vaccination. Motion pictures and lectures will be used by the district health officers to combat a very active antivaccination propaganda which has been carried on for some time in the state.——Through the efforts of Dr. Joseph K. Porter, Sr., city health officer of Key West, thousands of schoolchildren and others have recently been vaccinated, and it is stated that Key West is now practically immune to smallpox.

GEORGIA

Prenatal Clinic.—Plans have been made for the establishment of prenatal clinics for the training of mothers and the training and examination of midwives, in an effort to reduce infant and maternal mortality. These clinics will be established in several cities and counties of the state, under the auspices of the child welfare council. Dr. Thomas D. Walker, Macon, will have charge of the work in the Macon district.

ILLINOIS

Engraved Birth Certificates Being Issued.—In order to encourage more complete birth registration by stimulating public interest, the state department of public health has undertaken the task of mailing a handsome engraved certificate bearing the great seal of Illinois and the signature of the director of public health, to the parents of every child born in the state since Jan. 1, 1922.

Memorial to Dr. Robarts.—It is announced from St. Louis that the physicians of that city are considering the establishment of a permanent memorial to Dr. Heber Robarts, Belleville, who died, May 1, from burns sustained during experiments with radioactive substances. Dr. Robarts began experimenting with the roentgen ray twenty years ago, and continued his researches, although the loss of four fingers, one by one, warned him of approaching death through his work.

Hospital News.—A new hospital will be erected at Lockport at a cost of $175,000.——The contract has been let for the $35,000 addition to the Huber Memorial Hospital, Pana.——A campaign is being conducted to raise $250,000, by the board of directors of the Lutheran Hospital, Moline. The sum of $75,000 will be used for a 100 bed addition to the hospital at Moline, and the remainder will go to the Augustana Hospital, Chicago.——The new addition to the Hillsboro Hospital was recently opened.——Miss Schauber has been appointed superintendent at the Lake County General Hospital, Waukegan.——A new $125,000 hospital will be erected at Elmhurst.

Antismallpox Campaign in Peoria.—An antismallpox campaign, by the state department of public health, has been naugurated in Peoria, where a lingering epidemic has hovered over a portion of the city since late in 1921. Three special nurses and two quarantine officers have been employed to make a house-to-house canvass over the affected area in order to ferret out all hidden and unreported cases. In every clear or suspected case that is found by these persons, the patient will be placed under quarantine until such time as medical men can make an examination and establish the control measures indicated by the findings. In addition, a free vaccination clinic with three physicians in charge has been opened by the county authorities. Over 1,000 vaccinations were performed at the clinic during the opening days.

Chicago

Community Trust Issues First Report.—The Chicago Community Trust contemplates a general survey of the urban institutional facilities for care of the sick and disabled. In a report of the first study, "Prenatal Care in Chicago," it is said that Chicago has twenty-eight prenatal stations, none of which are publicly conducted; all have been developed by various types of organizations. Not more than 10 per cent. of the women delivered each year in Chicago receive prenatal care by clinics or similar organizations. In 1920, in Chicago, midwives attended 15,816 births, private physicians attended 39,468, and twenty-nine births were unattended. In no case was it found that attending physicians of prenatal care clinics receive fees or a salary for that specific medical service.

INDIANA

Health Exposition.—The Indiana Health Exposition was formally opened, May 19, in Indianapolis, with air maneuvers and firing of guns by the artillery. This was followed by the unveiling of Hygiea, the goddess of health, a statue erected directly in front of the manufacturers' building. Dr. John N. Hurty, state health commissioner, presided, and handed the keys of the exposition to Dr. Everett E. Hodgin, president of the city board of health, as doorkeeper. Dr. Frederick D. Stricker, state health commissioner of Oregon, and Dr. Paul A. Turner, state health commissioner of Washington, gave addresses at the opening ceremonies. All the public schools declared a holiday, and more than 50,000 children attended the exhibition. Following a week of lectures, art, science and government exhibits, the exposition closed, May 27. This is the fifth exposition of this kind ever held in the United States, it is said, others having been held in Chicago, New York City, Cincinnati and Louisville.

IOWA

Honor for Physician.—A dinner was given at the Osceola Sanatorium recently for Dr. William O. Parrish to celebrate his eighty-third anniversary. Dr. Parrish served in the Civil War and marched with Sherman to the sea; he has been in practice for fifty-four years.

Hospital Notes.—Contracts for the erection of the Allen Memorial Hospital, Waterloo, have been awarded and work will begin at once. The institution will be built at a cost of approximately $115,000.—The new nurses' home of the Lutheran Hospital, Des Moines, which was erected at a cost of $250,000 was dedicated, April 30.

Women's Medical Meeting.—The State Society of Iowa Medical Women held their twenty-fifth annual meeting, May 9, at Des Moines, under the presidency of Dr. Josephine Wetmore Rust, Mason City. The following officers were elected for the ensuing year: president, Dr. Eppie S. McCrea, Eddyville; vice president, Dr. Jane D. Wright, Clear Lake; treasurer, Dr. Helen Johnston, Des Moines, and secretary, Dr. Julia F. Hill, Grinnell.

New Medical Laboratory.—The new medical laboratory, recently completed and opened at Oakdale, was filled to capacity within ten days from the opening. This laboratory is equipped with forty beds, in addition to offices for the staff, and reception and class rooms. It will be used in connection with the State Sanatorium for the Treatment of Tuberculosis. The institution is built in the shape of the letter "H" and is fitted with all modern improvements.

Child Welfare School.—The child welfare research station of the University of Iowa has opened an experimental school for the normal child between the ages of 2 and 4 years. Physical measurements of the child are made once a month and investigations are made as to heredity, home conditions and special characteristics of the families of the children, as a background for the psychologic findings. A new six-room building equipped with child-sized furniture has been opened. Dr. Bird T. Baldwin, director of the station, is in charge of the study.

KANSAS

University News.—Courses designed especially to meet the needs of the general practitioner who desires to become acquainted with recent advances in medical science will be given at the summer session of the Kansas University School of Medicine. Three courses will be offered in the department of medicine, by Drs. Russell L. Haden, Peter T. Bohan and Ralph H. Major. The department of pathology will offer courses in necropsy technic, tissue diagnosis and functional pathology. The only fee asked is the regular summer session fee of $10. The session will commence on June 12 and end on July 24.

KENTUCKY

Hospital News.—Excavation has been started for the construction of buildings to house the physiotherapy and occupational therapy departments at the government veterinary hospital, Dawson.——A new hospital, to be operated by the Evangelical churches of Louisville, will be erected in that city at a cost of $300,000.

MAINE

Personal.—Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, is seriously ill at his home in Portland. Dr. Adam P. Leighton, Jr., Portland, will act as secretary in his stead.——Dr. William L. Cousins, Portland, who has been ill for the past year, is undergoing treatment in Boston, and is improving.——Dr. Clarence L. Scamman, Portland, has been appointed superintendent of health of Providence, R. I., to succeed Dr. Charles V. Chapin.

MARYLAND

Tuberculosis Clinic Opened.—The health department of Baltimore has opened a tuberculosis clinic at Highlandtown, Baltimore, the fifth in the system. The clinic will be under the direction of Drs. John E. O'Neill, B. T. Baggott and Lyman S. Abbott.

Health Association Planned.—Plans for the formation of a public health association for Baltimore County were discussed recently by the medical profession, social workers, Red Cross nurses and others, at a meeting held at Towson recently. The meeting was held to work out a plan whereby the public health service conducted during the past two years by the Baltimore Chapter of the Red Cross can be carried on, the Red Cross discontinuing its work in September; and the proposed organization is to take over the work and consolidate all such work in the county. Addresses were made by Dr. W. A. Bridges, chairman of the committee; Dr. Allen W. Freeman, resident lecturer of the school of hygiene and public health; Dr. Josiah S. Bowen, state deputy health officer, and Dr. A. L. Wilkinson. The subject of tuberculosis was also discussed.

MASSACHUSETTS

Personal.—Dr. Richard M. Smith, instructor in pediatrics, Medical School of Harvard University, Boston, has been appointed assistant professor of child hygiene in the new school of public health.——Dr. Paul F. Butler, Boston, has been appointed city physician for the roentgen-ray service, to succeed Dr. Samuel Ellsworth. Dr. Alexander McMillan will succeed Dr. Butler.

Physician Becomes Missionary.—Dr. Harry J. Hill, New Bedford, has given up his practice and sailed for China, where he will work as a medical missionary. He will be stationed at Tsinchow, 80 miles east of Tsinanfu, and will be assisted in his work by the interns and native students of the Shantung Christian University School of Medicine, Tsinanfu, as there are no medical men stationed at Tsinchow at present. Dr. Hill will establish a 100-bed hospital, and Mrs. Hill will open a training school for nurses in connection with it.

Reorganization at Boston Dispensary.—Dr. William E. Chenery and Dr. Harry J. Inglis have been appointed surgeons-in-chief of the Boston Dispensary in the reorganization of the ear, nose and throat department, each to be head of an independent six months' service. Dr. Inglis has already assumed charge of his service and has the period from February to July, inclusive. The period from August to January will be taken by Dr. Chenery. Dr. Frederick C. Cobb, for the last thirty-five years a member of the staff, has been appointed consultant to the dispensary.

Research Fellowships.—A research fellowship of $1,000 for the study of orthopedics in relation to hygiene and physical education will be offered by Wellesley College, beginning in September and continuing for one year. General requirements are: good health; a bachelor's degree from a college or university of good standing; careful preparation in chemistry, physics and biology; special preparation in anatomy, kinesiology and physiology; familiarity with the elements of orthopedic theory and practice; and an insight into some one or more of the problems of orthopedics as related to hygiene and physical education.

Building of Harvard Cancer Commission.—The new laboratory building, erected by the Harvard Cancer Commission for the study of cancer and biophysics in Boston, was opened recently with appropriate exercises, in the amphitheater of the Harvard Medical School. This building adjoins the Huntingdon Memorial Hospital and will be known as the John Collins Warren Laboratory, in recognition of the services rendered to the university by Dr. Warren, former chairman of the cancer commission. In the basement of the new building a vault for the storage of the commission's radium is provided, together with the necessary pumps and apparatus for collecting and purifying the gaseous emanation from the radium solution. The first floor contains the reception and examination rooms for outpatients, together with the roentgen-ray laboratory for Professor Duane. Free diagnosis service will be maintained by the state department of health, under the supervision of Dr. James H. Wright. Material removed at surgical operations can be sent to the laboratory by any registered physician in Massachusetts, and a pathologic examination of the tissue will be made, with a report as to its nature, and returned without expense to the physician or his patient. Dr. Henry P. Wolcott, chairman of the cancer commission, and Dean David L. Edsall of the Harvard Medical School, who was the presiding officer, gave addresses at the ceremony.

MINNESOTA

Personal.—Dr. Charles E. Proshek, New Prague, has recently returned to the United States after serving three years with the American Red Cross in Russia, Poland, Greece and Montenegro.

Hospital Items.—The new surgical pavilion at St. Mary's Hospital, Rochester, has just been completed at a cost of more than $2,000,000.——The St. James Hospital and Sanatorium, St. James, has been sold to the Franciscan Sisters of Rochester. The building will be remodeled and a school for training nurses will be established.——A campaign has been initiated by the American Legion posts of Minnesota to raise $250,000 for an American Legion memorial hospital, to be built at Rochester.

MISSISSIPPI

Hospital News.—Appropriations have been made of $20,000 to be added to the $100,000 fund for the erection of a hospital at Beauvoir.—Arrangements have been made for the erection of a neuropsychiatric hospital for veterans of the World War, who are residents of Mississippi, on the grounds of the East Mississippi Insane Hospital, Meridian. This institution will be erected at a cost of about $60,000 and will be arranged to provide vocational training for the ex-service men.——The new hospital of the King's Daughters, recently erected at Gulfport at a cost of $105,000, was dedicated, May 12, by the Rev. H. H. Sneed.

MISSOURI

Memorial to Dr. Fitzsimmons.—A fountain erected to the memory of Lieut. William T. Fitzsimmons, Kansas City, who was killed in France in 1917 by the explosion of a German bomb, was dedicated by the American Legion at Kansas City, May 30. More than $3,000 has been subscribed by public donations for the erection of the William T. Fitzsimmons monument. The Jackson County Medical Society participated in the ceremony.

Hospital News.—The board of hospitals and homes of the American White Cross of the Methodist Episcopal Church is conducting a campaign to raise $175,000 for the hospital building being erected at St. Joseph.——The cornerstone of the Fitzgibbon Memorial Hospital, to be erected at Marshall, was laid by the Masons of the Grand Lodge, May 11. The fund for this institution was derived from the gift of his entire estate by the will of Mr. Fitzgibbon, valued at $160,000. An endowment of $50,000 was stipulated in the terms of the bequest.

NEBRASKA

University News.—The University of Nebraska College of Medicine and Hospital, Omaha, announces the third annual graduate course for practitioners at the University Hospital, June 19-30, inclusive. This course will consist of practical intensive work covering important advances in medicine, surgery, diagnosis, etc. Registration is open to all legally qualified practitioners of medicine, and application for registration should reach the medical school on or before June 15. The fee is $40.——A laboratory course in operative technic and operative procedures will be offered at the university, July 3, immediately following the practitioners' graduate course. The course will consist of practical exercises in asepsis, management of the operating room, principles governing sterile field, instruments, ligatures, methods of closure, etc. Gloves, gowns, instruments and dressings will be supplied; free, $25.

NEW HAMPSHIRE

State Medical Meeting.—At the one hundred and thirty-first annual meeting of the New Hampshire Medical Society held in Concord, May 17-18, under the presidency of Dr.

Charles S. Walker, Keene, the following officers were elected for the ensuing year: president, Dr. Herbert L. Smith, Nashua; vice president, Dr. Howard N. Kingsford, Hanover, and secretary, Dr. Dennis E. Sullivan, Concord. It was advocated that the four year medical course be restored at Dartmouth Medical School, Hanover, or that the school be moved to Manchester on account of the superior hospital facilities there. Action was deferred until the next annual meeting.

NEW YORK

Brooklyn Ophthalmological Society.—At a meeting of the Medical Society of the County of Kings, May 9, in Brooklyn, the Brooklyn Ophthalmological Society was organized with the following officers: president, Dr. Joseph E. Golding; vice president, Dr. Ralph I. Lloyd, and secretary-treasurer, Dr. Willis M. Gardner. Membership is limited to oculists resident on Long Island.

Associated Outpatient Clinics.—The section on Pediatrics of the clinics, which in 1914 adopted standards for Class A, B and C clinics, was reorganized May 10, with the following officers: chairman, Dr. Roger H. Dennett; vice chairman, Dr. William P. St. Lawrence, and executive secretary, Dr. Gertrude E. Sturges. A demonstration pediatric clinic was proposed as a method of stimulating the improvement of pediatric clinics.

Mental Hygiene Lectures.—The mental hygiene committee of the state charities aid association has obtained the voluntary services of thirty-one psychiatrists and other authorities on mental hygiene for public addresses in an effort to demonstrate to the citizens of New York how to preserve mental health. Speakers are available on application to Mr. S. P. Davies, secretary of the committee, 105 East Twenty-Second Street, New York City.

Chiropractor Convicted.—It is announced by the secretary of the board of medical examiners of the University of the State of New York that Alfred J. Newman, president of the New York State College of Chiropractic, was convicted in the court of special sessions recently for violation of Section 66 of the education law. It was stated that Newman held himself out as issuing degrees and diplomas without the consent of the board of regents, for which he was fined $250. On the same day, the Metropolitan Institute of Chiropractic, a Delaware corporation, pleaded guilty to violation of the same section, and was fined $250. Three other similar cases were adjourned to June 9.

Information Bureau for American Hospital of Paris.—The board of governors of the American Hospital of Paris has appointed Miss Annie Flint of New York to organize a bureau of information in the United States. Miss Flint will organize small committees under prominent local chairmen in the chief cities of America, with headquarters in New York. The present hospital building in Paris is inadequate to meet the needs of the American public in Europe. It has been decided that a complete new hospital of 100 beds must be built. The funds in hand are sufficient to begin work on the new structure, 12,000,000 of the 18,000,000 francs required for the new hospital having been subscribed. There are still 5,000,000 francs for buildings and 1,000,000 francs for endowment to be obtained. When the necessary funds have been subscribed, no further appeals for maintenance will be made, as the hospital will be self-supporting.

NORTH CAROLINA

Appropriations for Health Campaign.—The board of county commissioners at a meeting in Raleigh, May 1, adopted a health budget for the ensuing year which carries $38,838 for health work and $6,850 for mosquito control. The county government will pay one half of the mosquito control appropriation and the city the other half. The city will also pay 75 per cent. of the health budget.

OHIO

Physician Fined.—It is reported that Dr. Lot H. Hughes, Dennison, was fined $400, April 27, when he pleaded guilty to a charge of violating the Harrison Narcotic Law.

Public Health Course.—The Ohio Department of Health is conducting a correspondence course in public health for health commissioners under the supervision of Dr. Emery R. Hayhurst and Dr. Frank G. Bourdeau.

Hospital News.—Plans have been drawn for the $250,000 addition to the Cleveland Municipal Tuberculosis Sanatorium, Warrensville.——An addition for tuberculous patients will be erected at the Middletown Hospital at a cost of $25,000.——The new municipal hospital at Youngstown is nearly completed and will be turned over to the city.

Rehabilitation Week.—All members of the Ohio State Medical Association were supplied with forms for the purpose of reporting during the week, May 8-13, known as Rehabilitation Week, the names, addresses and nature of impairment of any disabled citizen of Ohio, over 16 years of age, who might be interested in vocational training enabling one to become self-supporting. State and federal funds will be available to meet the cost of tuition, tools, books and supplies for those for whom training is deemed necessary and feasible. This week was also Crippled Children's Week throughout the state. Forty-four clinics were held, and nearly 3,000 children were examined. The governor issued a special proclamation calling on the people of the state to observe the week. He stated that there were practically 15,000 crippled and deformed children in Ohio who had not had the necessary treatment.

PENNSYLVANIA

Personal.—Dr. Catharine Macfarlane has been appointed professor of gynecology at the Woman's Medical College of Pennsylvania, Philadelphia, to succeed the late Dr. Ella B. Everitt. By this appointment, Dr. Macfarlane becomes gynecologist-in-chief at the hospital of the Woman's Medical College of Pennsylvania.

Philadelphia

Building at Jefferson Hospital. — Contract for the construction of the new $1,500,000 building to be added to the Jefferson Hospital has been awarded to the Stone & Webster Construction Company. Work will begin shortly. John T. Windrim is the architect. The new structure will stand on the site of the present nurses' home. It will contain several laboratories, equipped with the most modern appliances, and there will be accommodations for 150 nurses. Plans have been made to begin demolition of the properties at Clifton, Sansom and Moravian streets, June 15, to make way for the new building. It will be of brick, steel, stone and concrete, fireproof construction, and it is hoped by the builders that they will have it completed in a year.

Celebration in Philadelphia of the Centenary of Pasteur.—The medical profession and allied scientific bodies of Philadelphia are arranging for a notable celebration of the centenary of Pasteur's birth on December 27. Distinguished scientists from different parts of the country will be invited to participate. The French government has also signified its intention to send a representative. There is no event in medical history which should enlist the attention and recognition of the whole profession more than this to honor the man whose work and discoveries have recreated medicine and placed the study of disease on a real scientific basis, giving rise to our present new era in medicine and its marvelous development.

RHODE ISLAND

Memorial to Physician.—A bronze tablet to the memory of Asst. Surg. William Henry Buffum, Lieut., U. S. Navy, Providence, who died in the World War, was unveiled, May 20, at the Rhode Island Medical Library, Providence, with impressive exercises, presided over by Dr. Hammond. The tablet was erected by associates of Dr. Buffum in the Rhode Island Naval Hospital Unit, and was accepted on behalf of the Rhode Island Medical Association by Dr. George S. Mathews, president of the association. The Rev. Dr. Sturges gave an address.

SOUTH CAROLINA

Clinic for Veterans.—The first clinic for ex-service men in the state of South Carolina will be established by the government at Columbia, and will be opened about July 1. Dr. Robert B. Durham, Columbia, will have charge of the clinic, which will employ a staff of twenty men, including ten full-time physicians. The clinic will be fitted with modern medical and dental improvements, and will be equipped with a roentgen-ray room.

TEXAS

Hospital Association Organized.—The state board of control issued a call for a general meeting of the superintendents of the Texas state hospitals, May 4. The meeting was held at the State Lunatic Asylum, Austin. After discussion of the benefits to be derived from a permanent association composed of the superintendents of the various institutions, it was decided to organize the Association of Superintendents of State Hospitals and Sanatoriums. Dr. John Preston, Austin, was elected president of the association and Dr. John W. Bradford, Austin, secretary. This organization will meet quarterly at the various institutions in rotation, the next meeting to be held at the Northwest Texas Hospital for the Insane, Wichita Falls, August 8-9.

UTAH

Ophthalmologic Session.—The tenth annual session of the Pacific Coast Oto-Ophthalmological Society will be held in Salt Lake City, September 14-16, the week preceding the meeting of the American Academy of Ophthalmology and Oto-Laryngology at Minneapolis, September 19-21. Members of the society who desire to contribute to the session are requested to notify Dr. Edward D. LeCompte, Salt Lake City at an early date. Members who have pathologic specimens or other exhibits of interest are requested to communicate with the secretary.

WASHINGTON

Memorial to Nurses.—Trees were recently planted on the Memorial Highway between Tacoma and Seattle, to perpetuate the names of eight Seattle nurses who lost their lives in the World War.

WEST VIRGINIA

State Medical Meeting.—The fifty-fifth annual session of the West Virginia State Medical Association was held at Huntington, May 17-19, under the presidency of Dr. James Howard Anderson, Marytown. The following officers were elected for the ensuing year: Dr. John N. Simpson, dean of the West Virginia University School of Medicine, Morgantown, president; Dr. Robert J. Wilkinson, Huntington; Dr. Henry H. Hall, Wheeling, and Dr. Walter E. Vest, Huntington, vice presidents; Dr. Robert A. Ashworth, Moundsville, secretary (reelected), and Dr. Hugh G. Nicholson, Charleston, treasurer (reelected).

WISCONSIN

Right of Way for Physicians.—At a meeting of the Milwaukee Medical Society, May 12, it was decided that a bill and proposed ordinance providing that city speed and parking laws be amended to allow physicians to have right of way privileges on emergency calls should be drafted and sent to the state legislature. Dr. Darling stated that the proposed bill would go to the state legislature with the sanction of police officials and the city attorney. The committee will urge the Chicago plan, which provides that physicians must register and secure car and vest badges from the police department.

CANADA

The Canadian Radiological Society.—This society announces that it has established a consultation bureau where any and all questions pertaining to roentgen-ray and radium may be submitted for information, suggestions or advice. This will be done entirely without charge.

Personal.—Dr. Norman MacLeod Harris has been appointed chief of the division of medical research of the Canadian Dominion Department of Health.——Dr. Thomas E. P. Gocher, Vancouver, B. C., has been elected president of the North Vancouver Army and Navy Veterans' Association.——Dr. Robert H. Mullin, Vancouver, was recently reelected chairman of the public health bureau of the board of trade for Vancouver.——Dr. John Nay, Trail, B. C., has been appointed assistant medical advisor to the Workman's Compensation Board of British Columbia.

Medical Association News.—The Medical Council for Canada announces its examinations for June 13, at Toronto, Winnipeg and Vancouver.——The Peterboro, Ont., medical society met, March 2, at Peterboro. Dr. R. L. Hess of Hamilton, discussed "The Interpretation of Roentgen Ray Findings in the Gastro-Intestinal Tract."——The Stormount and Glengarry County Medical Society met at Cornwall, March 22. The meeting was addressed by Dr. Gwynne.——The Hamilton Medical Society met recently at Hamilton, Ont. Dr. L. J. Austin of Kingston, Ont., presented an outline of "The Pathology, Diagnosis and Treatment of Genito-Urinary Tuberculosis, with Special Reference to the Kidney."

Hospital News.—The new wing of the Trinity College School Hospital, Port Hope, Ont., erected by Mrs. Patterson in memory of her husband, was recently opened. Archdeacon Ingles conducted the dedication.——All babies born during the last five years at the Women's College Hospital, Toronto, were invited to a reception there recently. A baby contest was held, and Dr. Allen Brown, Toronto, was the judge.——St. Michael's Hospital, Toronto, observed National Hospital Day by throwing the hospital open to the public for three hours.——The Rosedale Presbyterian Church Hospital Circle, Toronto, announces the gift of a hospital unit, to be established at Matheson, Ont. This unit will supply nursing and community service in the Matheson district.

GENERAL

Congress of Physicians and Surgeons of North America.—At the annual meeting of this organization, the following officers were elected: Dr. Frank Billings, Chicago, president; Dr. Francis W. Peabody, Boston, treasurer, and Dr. Walter R. Steiner, Hartford, Conn., secretary.

American Laryngological, Rhinological and Otological Society.—This society at the annual meeting held in Washington, D. C., May 4-6, elected Dr. Dunbar Roy, Atlanta, Ga., president; Dr. William H. Haskin, New York, secretary, and Dr. Ewing W. Day, Pittsburgh, treasurer.

American Ophthalmological Society.—At the annual meeting held in Washington, May 1-3, the following officers were elected for the ensuing year: president, Dr. William H. Wilmer, Washington, D. C.; vice president, Dr. Alexander Duane, New York, and secretary-treasurer, Dr. Thomas B. Holloway, Philadelphia.

New Officers of Bronchoscopic Society.—The following officers of the American Bronchoscopic Society were elected at the recent session held in Washington, D. C.: president, Dr. Samuel Iglauer, Cincinnati; vice president, Dr. Charles J. Imperatori, New York City, and secretary-treasurer, Dr. William B. Chamberlain, Cleveland.

Double Honor to President de Schweinitz.—Dr. George E. de Schweinitz, President of the American Medical Association, has accepted the invitation to deliver the Bowman Lecture in London, in 1923. This is a distinguished honor to American ophthalmology. He was also honored recently by promotion to brigadier general in the Medical Reserve Corps.

American Association of Genito-Urinary Surgeons Elect.—At the thirty-fourth annual meeting of the association held in Washington, D. C., May 2-3, the following officers were elected for the ensuing year: president, Dr. William E. Lower, Cleveland; vice president, Dr. Richard F. O'Neil, Boston, and secretary-treasurer, Dr. Henry G. Bugbee, New York City.

American Association of Pathologists and Bacteriologists.—At the annual meeting of this society held in Washington, D. C., May 2-4, the following officers were elected for the ensuing year: president, Dr. Paul A. Lewis, Philadelphia; vice president, Dr. James Ewing, New York; treasurer, Dr. Frank B. Mallory, Boston, and secretary, Dr. Howard T. Karsner, Cleveland.

American Climatological and Clinical Association.—At the annual meeting held in Washington, D. C., May 2-4, Dr. Charles W. Richardson, Washington, was elected president; Drs. George W. Norris, Philadelphia, and Will Howard Swan, Colorado Springs, Colo., vice presidents; Dr. Cleaveland Floyd, Boston, recorder, and Dr. Arthur K. Stone, Framingham, Mass., secretary-treasurer.

Central Neuropsychiatric Society Organized.—This society was organized in St. Louis on May 23. The purpose is to hold annual meetings in the Middle West, the programs to be clinical and furnished entirely by the members residing at the place where the meeting is held. Officers elected were, president, Peter Bassoe, Chicago; vice president, A. S. Hamilton, Minneapolis; secretary-treasurer, Karl A. Menninger, Topeka, Kan.; member of council, Ernest Sachs, St. Louis.

Radium for Madame Curie.—From the fund collected by the women of America to present 1 gm. of radium to Madame Curie, there yet remains about 50,000, the annual income from which will be given to Madame Curie. Approximately $110,000 was expended for the gram of radium. The chargé d'affaires of Belgium sailed on the *Homeric,* May 6, with a gift to Madame Curie from friends in America, consisting of two instruments for testing radium, a galvanometer and an assay balance, which are manufactured only in this country. When here last year, Madame Curie stated that they were what she needed in experimental work.

Specially Denatured Alcohol for Bathing.—The following formula, to be known as specially denatured alcohol Formula

No. 46, has been authorized by the Commission of Internal Revenue for use as antiseptic, sterilizing and bathing alcohol for use by visiting nurse associations, public nursing associations, clinics and dispensaries, exclusively. To every 100 gallons of pure ethyl alcohol add 25 fluidounces phenol, U. S. P.; 4 fluidounces oil of wintergreen or methyl salicylate, U. S. P. This formula, the commissioner states, will only be authorized for use by institutions and organizations named above which are of a semipublic character and engaged in charitable work.

Proposed Legislation on Decimal System of Weights and Measures.—Representative Colton has presented a bill to Congress providing for the establishment of a new standard for the decimal system of weights of measurements. In this proposed act, the standard weight is fixed as the weight of a cubic foot of water at maximum density; the standard ounce as a thousandth part of the standard weight or the weight of the decimal cube of water at maximum density; the mark as 10 ounces and the stone as 100 ounces. The decimal graduations of the ounce are fixed at a tenth, which shall be designated as the dram: the hundredth, which shall be designated as the carat; and the thousandth, which shall be designated as the standard grain. The tenth of the standard grain s denoted as the mite.

LATIN AMERICA

Branch of Cruz Institute in Northern Brazil.—The cornerstone has just been laid for a branch of the Instituto Oswaldo Cruz in the state of Maranhão. Dr. Cassio de Miranda delivered the address at the ceremony.

Mexico Will Not Recognize Foreign Degrees.—The Cenral University of Mexico, which is entrusted with the evalidation of foreign diplomas, has announced that hereafter, in order to prevent abuses by quacks, no foreign iplomas will be recognized. Physicians graduated in foreign ountries will have to submit to a new and complete examination in order to have their degrees recognized in Mexico.

Cancer Institute at Buenos Aires.—The *Semana Médica* escribes the inauguration of the Instituto del Cancer, April 9. Dr. Angel H. Roffo is in charge, and the institution is model, the peer of the best in other countries. Roffo's ioneer work in experimental cancer inspired the Academy of Medicine in 1912 to initiate the movement for a cancer institute, and it has now been carried to its successful completion y the work of committees and private individuals.

Death Rates in Cuba.—According to a recent article by Dr. J. Le Roy of Havana, the death rate of Cuba has shown downward trend since 1900. In that year the death rate er thousand was 17.82 for the whole of Cuba, and 24.77 for Havana. In 1919, the death rate was 14.3 and 21.06, respecvely. The lowest figures in the whole period are those of 912: 12.96 for Cuba and 18.10 for Havana. In Havana, the eath rate rose to 24.2 in 1920. All communicable diseases how a similar decrease, yellow fever, malaria and tetanus howing decreases from 12.41, 13.02, and 7.65, in 1900, to 0.0, 54, and 0.52, respectively. The only disease that seems to old its own is typhoid fever, with a death rate of 3.66 in 900, and 4.15 in 1921.

New Director of the Medical School of São Paulo.—Dr. elestino Bourroul has recently taken his position as director f the School of Medicine and Surgery of São Paulo. In is inaugural speech, Professor Bourroul called attention to he great assistance rendered by the Rockefeller Foundation, hrough Drs. Pearce and Russell, in the reorganization of he school and in the foundation of the public health institute connected with it. The school is at present handicapped hrough lack of appropriate buildings, as those so far availble are only the public health institute building and one nfinished pavilion for the teaching of legal medicine. Some ifts have already been received for the construction of hospital pavilions for pediatrics, orthopedics and gynecology.

Centennial of Academy of Medicine at Buenos Aires.—The *rensa Médica* brings full details of the celebration of the entennial of the foundation of the Academia Nacional de Medicina at Buenos Aires, April 18. The rector of the niversity, Dr. José Arce, presided. The historical address as delivered by the president of the academy, Dr. Eliseo anton. Among the announcements made was that of the stitute of experimental medicine, the first of its kind to be ounded in South America. A prize of a gold medal and ,000 was awarded to Dr. P. Belou for his "Stereoscopic tlas of the Anatomy of the Ear"; a silver medal and $3,000 Dr. C. Lagos García for his work, "Human Sexual Malformations," and a copper medal and $2,000 to Dr. F. Garzón Maceda for his "Manual of Zoopharmacy." A work by Dr. P. P. Rojas on the structure of the myocardium also received honorable mention. Three days were devoted to the centennial ceremonies.

FOREIGN

Embryology Institute at Vienna.—The new Embryology Institute of the University of Vienna was inaugurated, March 11.

Italian Medical Women's Association.—This association was recently organized with Dr. M. Carcupino Ferrari, Salsomaggiore, Parma, as president of the association and Dr. Clelia Lollini, Rome, foreign secretary.

University Courses on Sexual Hygiene.—An exchange mentions that Professor Jessner, the dermatologist and syphilologist of the University of Königsberg, has been entrusted with a course of lectures on sexual hygiene and the education of the sexes. A similar chair has also been founded at Prague.

Tribute to Perroncito.—Dr. E. Perroncito, professor of parasitology at the University of Turin, who discovered that the ankylostoma was responsible for the anemia of the miners employed in the St. Gothard tunnel, and made other contributions to science, has reached the age limit and his friends are organizing a celebration in his honor. The *Policlinico* states that subscriptions are being received by the Perroncito Committee, via Nizza 52, Turin, Italy.

Prize to Rossi.—The Garibaldi Franco-Italian prize offered by the French Surgical Society was awarded to Dr. F. Rossi, instructor in the University of Bologna, for his recently published work, "War Wounds of the Thorax." Twenty other Italian surgeons competed for the prize, and "War Wounds of the Abdomen," by Dr. E. Santoro of Naples, and "War Wounds of Bones and Joints," by Dr. L. Eustachio of Pisa were among those given honorable mention.

Visit of Professor Krogh.—Dr. August Krogh of Copenhagen plans to visit the United States next fall, and will be accompanied by his wife, Dr. Marie Krogh, whose name is also well known to science. His discovery of the independent motor function of the capillary circulation and his research on the respiratory gas interchanges won him the Nobel prize in medicine in 1920. He had previously received the Austrian Seegen prize.

Pathologic Lectures.—A course of eight lectures on pathologic research in its relation to medicine will be given during the summer session at the Institute of Pathology and Research, St. Mary's Hospital, London. These lectures are free to members of the medical profession and to students. The first of the series was given by Sir Almroth Wright on "New Avenues in Immunization," and Sir Archibald Garrod, regius professor of medicine, University of Oxford, spoke on "More Inborn Errors of Metabolism," May 4.

Approaching Medical Meetings in Paris.—The Seventh Medicolegal Congress, May 29; the Bayle Centennial, May 30; the Neurologic Reunion, June 2; the Mental Hygiene Conference, June 1; the French Dermatologists' and Syphilologists' Congress, June 6; the International Conference to Combat Infant Mortality, July 6; the Fifth French Pediatricians' Congress, July 10; the French Otolaryngology Congress July 17, followed July 19 by the International Otorhinolaryngology Congress; in October, the French surgical, medical, orthopedic and urologic congresses.

International Conference Against Tuberculosis.—Our Brussels exchange, the *Scalpel*, brings the details of the Third International Conference on Tuberculosis which is to be held at Brussels, July 11 to 13. More than forty nations are to send delegates, and trips are to be made to the principal institutions for the tuberculous in Belgium. The three subjects appointed for discussion are prophylaxis in children before and during school age; prophylaxis in families by visiting nurses, and work for the tuberculous during and after treatment. Calmette is to present the immunity question.

Medical Relief in Russia.—Dr. Henry Beeuwkes recently sent in a report of his scheme of medical relief administration in Russia. A complete survey of health conditions and hospital facilities was made and a relief plan drawn up which is already operating in Moscow, Petrograd, Kazan, Simbirsh, Samara, Saratov, Tzaritzin, Ufa and Orenburg. Dr. Beeuwkes states that the medical profession of Russia deserves admiration and assistance, a large percentage having died from epidemic diseases to which they have been constantly exposed. The mortality rate among physicians from typhus is reported to be 50 per cent. as against 15 per cent. of the general population.

The "Consultation."—A new quarterly has been founded at Paris, *La Consultation*, which aims to give specialist consultations to the general practitioner, keeping him posted in the progress realized in the different specialties. Nine specialties are represented on the editorial staff, and questions will be answered. The forty-seven pages of the first issue contain articles on the most suitable age for surgical correction of congenital malformations; early diagnosis of glaucoma; preparation of autogenous vaccines; radiotherapy in tuberculosis, and treatment of epilepsy and of syphilis. A long list is given of subjects to be treated in following numbers, and suggestions are asked for. The address is 36 Rue Washington, Paris, and the subscription price is 6 francs a year. Dr. Robert-Leroux is the editor.

Personal.—A banquet was recently tendered Prof. L. Devoto, director of the Clinica delle Malattie Professionali at Milan, on the occasion of his election to the Instituto Lombardo di Scienze e Lettere.——Dr. J. J. Mostajo, a Peruvian surgeon, has arrived in London from Lima. Dr. Mostajo, who is at the head of the movement in Peru for the investigation of cancer, has been appointed by the Peruvian government to study the organization and progress of cancer research in Europe and in the United States.——Prof. J. L. Faure of Paris has been lecturing at Liége on abdominal hysterectomy, and Prof. R. Picqué of Bordeaux, on surgical anatomy. Both were film lectures. Prof. Balthazard of Paris lectured further on carbon monoxid poisoning, giving ten free lectures on the different aspects of this poisoning.——Dr. W. Roux, professor of anatomy at Halle, has been elected an honorary member of the Academy of Medicine at Turin, Italy.

Franco-American Anticancer League.—The *Presse Médicale* reports the meeting recently held at Paris of the Ligue Franco-Anglo-Americaine Contre le Cancer. The minister of hygiene presided. The president of the league is Justin Godard, formerly the undersecretary of state for the military medical department, and Professors Mark Baldwin, Hartmann and Sir John Pilter are vice presidents. There is a large committee of *visiteuses* who devote their efforts to educating the public and ameliorating the fate of cancer victims. The secretary of the league, M. R. Le Bret, spoke in particular of the necessity for better hospital provisions for incurable cases of cancer. Ledoux-Lebard emphasized the advantages of keeping the Coolidge tube immersed in oil in a lead receptacle. This does away with all danger for the environment. Treatment of operable cancer, he said, should consist of preliminary raying, then the operation, and then postoperative raying. Lymphosarcomas and mediastinal tumors may yield to the radiotherapy alone.

Deaths in Other Countries

Dr. **Anna K. Pedersen**, physician to the Vördingborg Hospital for the insane in Denmark, aged 50.——Dr. **V. Nicolai**, instructor in otolaryngology at the University of Pavia.——Dr. **A. Tabosky**, of Caracas, founder of the Caracas Medical Society, of which the *Revista de Medicina y Cirugia* is the official organ.——Dr. **T. Peckolt**, an otolaryngologist of Rio de Janeiro.——Dr. **W. Smitt**, director of the state institute for physiotherapy, etc., at Dresden.——Dr. **H. Heineke**, director of the surgical clinic of the University of Leipzig, aged 49.——Dr. **A. Del Monte**, professor of ophthalmology at the University of Naples.——Dr. **M. Kroner**, of Berlin, aged 82.——Dr. **G. Ninni**, instructor in surgery at the University of Naples, and president of the Associazione dei Medici Ospedalieri, aged 58.——Dr. **L. Farkas**, a leading Hungarian physician, surgeon and hygienist, secretary of the Hungarian Red Cross from 1901 to 1922, and delegate from Hungary to various international medical congresses, aged 74.——Dr. **G. Fabbri**, chief of the medical service of the Italian railroads and leader in the campaign against malaria.——Dr. **Hugh E. Fraser**, for twenty-five years medical superintendent of Dundee Royal Infirmary, Scotland, April 20, aged 59.——**Col. Francis Warburton Begbie**, in command of base hospitals in Mesopotamia and France during the late war, April 25, aged 58, at Exmouth, England.

CORRECTION

Congress of Physicians.—In a report of this Congress, The Journal, May 20, page 1568. Dr. A. F. Hess, New York City, is reported to have said that "about 75 per cent. of breast-fed infants show more or less tendency to rickets in some form." Dr. Hess writes that the word "breast-fed" should read "bottle-fed."

Government Services

New Hospitals for Veterans' Bureau

President Harding has approved plans for the construction of eight new hospitals by the U. S. Veterans' Bureau out of the $17,000,000 recently appropriated by Congress after recommendations by Chairman Forbes and the hospitalization board. The hospitals whose construction has been approved by the president will be located in Northampton, Mass.; in Livermore, Calif.; at Camp Lewis, Washington; in New York state (two hospitals, one within fifty miles of the city and another in the Adirondack section); in Gulfport, Miss., and in the tenth district of the U. S. Veterans' Bureau, including the states of Montana, the Dakotas and Minnesota. The national executive also approved the purchase of a hospital at Memphis, Tenn. Bids for the new institution will be received within the next ninety days and the work will be pushed to rapid completion. Government agencies will not attempt the actual construction, but all contracts let to private contractors will contain a clause giving preference in employment to ex-service men.

Reconstruction at Wards Island

A reconstruction program has been outlined by the educational director at Wards Island, N. Y., to benefit both the patients who can be cured and those in whom deterioration can be arrested, and the type that will always be a public charge and in an institution of this sort. The patient is first started in the occupational therapy department, attending classes two or three hours daily, and then is sent to the prevocational school and later, when advanced in his work, to the vocational departments. After he has shown that he is capable of being trusted, and he shows proficiency in his work, he is paroled to his home. If this cannot be arranged, he is transferred from the vocational shop, given a ground parole for the island and assigned to one of the trade shops. Since the inauguration of this system, the enrolment has tripled in five months. Fifteen patients have been paroled from the hospital and none have had to be returned.

Senate Concurs on New Pay Bill

The Senate concurred, May 22, in the House bill providing the establishment of a new system of pay and allowances for the Army, Navy, U. S. Public Health Service and other bureaus of the government. This new pay bill goes into effect, July 1, and affects the pay of the enlisted as well as the commissioned personnel of these services. It was originally drawn up by a special committee appointed by both houses of Congress which sat in joint session. Outside of a few minor amendments, with reference to computing pay and allowances of National Guard officers, the bill as originally drawn passed both the Senate and the House. One of the amendments provided that National Guard officers entering or now serving in the regular army should receive credit for their service in the National Guard to the extent of one half. Enactment of this measure is of utmost importance to medical officers of the Army, Navy and U. S. Public Health Service, since its failure to pass would have resulted in these officers receiving pay on a scale provided in the old 1908 law.

Hospital for Disabled in Wisconsin

Announcement by Col. Charles R. Forbes, director of the U. S. Veterans' Bureau, has been made to the effect that the State of Wisconsin has under construction a new $250,000 hospital, to be used exclusively for the treatment of disabled war veterans suffering with mental diseases. The name of the institution is the Wisconsin Memorial Hospital. It will occupy a site of fifty-four acres at Farwell's Point, about five miles from Madison, and will be under the direction of Dr. Lorenz, psychiatrist, who is also in charge of the Wisconsin Institute of Psychiatry, Farwell's Point. The new hospital will consist of ten separate one-story buildings. As soon as a sufficient number of the structures are ready for occupancy, 158 patients of the U. S. Veterans' Bureau will be transferred to the Wisconsin Memorial from the Wisconsin State Hospital for the Insane and the Wisconsin Institute of Psychiatry. The memorial hospital will be maintained on a contract basis, the Veterans' Bureau providing funds for the care of its beneficiaries. The latest equipment for hydrotherapy treatments will be installed and all appurtenances for the investigation and diagnosis of mental cases. The staff of doctors and nurses will be supplied by the state of Wisconsin.

Veterans' Bureau Asks Transfer of U. S. P. H. S. Funds

A letter sent to the Senate by the director of the U. S. Veterans' Bureau asks for legislation giving him authority to transfer funds appropriated by Congress to the U. S. Public Health Service, to be used in payment of the personnel of the health service now on duty with the Veterans' Bureau in various government hospitals for the treatment of disabled war veterans. Recently, all of these hospitals originally under the jurisdiction of the U. S. Public Health Service and being operated by U. S. Public Health Service surgeons and employees were transferred by an executive order of the president of the U. S. Veterans' Bureau. The Veterans' Bureau planned to pay these U. S. Health Service surgeons and employees out of its own funds, but this had proved impracticable, and the present plan is to have the U. S. Public Health Service continue to pay them.

Government Needs Aides in Rehabilitation of Disabled Veterans

The United States Civil Service Commission states that there is urgent need at hospitals of the United States Public Health Service and establishments of the United States Veterans' Bureau for reconstruction aides in physiotherapy and occupational therapy in connection with the rehabilitation of disabled soldiers, sailors and marines. The commission will receive applications for these positions until further notice. Applicants are not required to report for a written examination, but are rated on the subjects of education, training experience and physical ability.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 12, 1922.

Swimming-Pool Conjunctivitis

Drs. J. Chaillous and Nida recently directed the attention of the Société d'ophthalmologie of Paris to an acute follicular conjunctivitis observed in several persons frequenting a municipal swimming pool in Paris. The affection is characterized by a swelling of the eyelids; by the sensation of sand in the eyes; hyperemia of the bulbar conjunctiva; intense redness of the palpebral conjunctiva and culdesac; thickening of the mucous membrane, which has a follicular aspect, and presence of a preauricular ganglion, sometimes painful. Although this form of conjunctivitis is not so serious as granular conjunctivitis, it cannot be considered as benign, since it hampers visual functions considerably. As many persons were suffering from identical lesions, an inquiry was made which revealed the fact that all the patients were frequenting the same swimming pool which was used by workmen living in that quarter of the city, from 350,000 to 400,000 people using it yearly. It is fed by the Seine river and the water is filtered in winter only by means of sand filters. The pool is scrubbed every Tuesday and the water renewed. All bathers are expected to use the shower before entering the pool, but in reality only few of them do it, and the water, which is renewed only once a week and heated to 27 C. (80.6 F.), becomes rapidly an excellent culture medium. The smears obtained by centrifugalization of the pool water do not seem to contain more than one form of long bacillus taking the Gram stain, and the same water in gelose serum yields only the same bacillus, the cultures of which emit a very bad odor. Rabbits inoculated with the cultures after scarification of the conjunctiva showed, properly speaking, no conjunctivitis. It is interesting to note that all the patients were males. This is attributed to the fact that the water is changed on Tuesday, and that Wednesday afternoon is reserved for women. Acute follicular conjunctivitis from swimming pools has already been described in Germany by Schultz and Fehr. In Paris, Morax has called attention to it, and he believes that during such an epidemic, even if it is limited, measures should be taken to prevent diffusion, not by more frequent renewal of water, but by temporary closing of the establishment.

The "Entr'aide Universitaire Européenne"

The students of central and eastern Europe have been living, for the last two years, in a state of indescribable misery. They need food, clothing and instruments, and they cannot obtain lodging. Among these students, approximately 20,000 refugees from Russia, Ukraine, Armenia and Georgia are absolutely without resources and are obliged to find temporary abode in railroad stations. Many of them have tried to earn their living as gardeners, clerks and as musicians in motion picture theaters during their spare hours. A great number of Russian refugees have been obliged to give up their study and to become railway employees or laborers. But the labor unions and the present lack of jobs (to say nothing of the weak physical condition of these young men) prevent their doing manual labor. On the other hand, their country is in great need of trained minds of all kinds, and Russia, Poland and Hungary need physicians, engineers and lawyers.

In order to cope with these pitiful conditions, the Fédération Universelle des Associations Chrétiennes d'Etudiants has organized the Entr'aide Universitaire Européenne, supervised by a special committee, with headquarters in Geneva. The French committee comprises Professor Appell, rector of the Paris Academy; several professors from various faculties, among whom is Dr. Prenant, professor of the Faculty of Medicine of Paris, as well as representatives of several students' organizations, such as the Union nationale des étudiants de France, the Fédération française des associations chrétiennes d'étudiants, and the Association générale des étudiants de Paris. The distribution of assistance is assured, with the collaboration of university officials and local students' associations, and the organization is always in close touch with other organizations to prevent duplication.

As regards Russia, an agreement has been made with Dr. Nansen, and an agent from the Entr'aide will leave soon for Russia to organize relief work among the students. Help is offered without political or religious considerations. An inquiry is made concerning the material needs of each student, and those who have given proof of real aptitude and who have had several years of training will be encouraged in the continuation of their studies. The French representatives of the Entr'aide universitaire have decided to limit their efforts for the present to Russia and Poland, which are the most tried countries. The donors may express their desire that their gift be given to one of the two countries.

Syphilis and Servants

In one of the last sessions of the Société française de prophylaxie sanitaire et morale, Dr. Bizard presented an interesting communication concerning syphilis in servants, showing, by a few typical examples, the dangers that may be encountered by us and especially by children entrusted to conscienceless women who sometimes have just completed a more or less lengthy sojourn in the Saint-Lazare house of detention for criminal women and prostitutes. Thus, there is a risk of contaminating, morally and physically, young children, in whom a bad example leaves an impression that may never be effaced. From the standpoint of professional secrecy, syphilis in servants gives rise to difficult problems. If the servant does not wish to leave his or her position, the physician, bound by professional secrecy, is powerless and is obliged to witness contamination, since it is difficult for him to tell the master that his maid is affected with a contagious disease, without specifying the nature of the disease. Dr. Morin described before the society a typical case: A servant, taking care of children, was sent by her master to a private sanatorium, where, after questioning, mercurial treatment was prescribed, since at that time arsphenamin was not known. The servant's husband called on the physician and threatened to sue him, asserting that he had revealed the nature of the disease by prescribing mercury. Dr. Gougerot recalled that the sanitary code of New York State forbids servants to practice their profession when they are affected with a venereal disease. To ward off all danger, a medical certificate should be required of a servant; but Dr. Jeanselme, professor of clinical skin and venereal diseases of the Faculty of Medicine of Paris, objected on the ground that, considering French customs, there is little chance that a law similar to that of New York State could be adopted. As regards a certificate of health, the present difficulty in finding help forbids even the thought of it. Dr. Faivre stated that a distinction should be made in interpreting professional secrecy, depending on whether the physician is called by the master or by the servant. When he is called by the master, he is undoubtedly bound by professional secrecy toward the servant; but should he not be considered as an expert toward the master? The master tells the physician that he has some doubt regarding a certain servant. The physician cannot make a statement; but is it not possible for him by his answer to awaken a doubt in the mind of the master that will permit him to suppose the truth? Dr. Morin objected that Dr. Faivre's suggestion would be very dangerous, as the discharged servant would contaminate another family.

Thus, the solution that remains is the dissemination among the public of a knowledge of the dangers of syphilis. The belief still exists that debauched persons are those more likely to contract syphilis, but it is important to teach the public that it may be contracted innocently, and that it is inviting contamination to keep in one's service a person having signs of syphilis. Dr. Bizard stated that he knew of a family that had a servant with a syphilitic chancre of the lower lip, to whom he had given a prescription on which he had written that the disease was contagious and that it required precaution and long and regular treatment. The servant honestly showed the prescription to the members of the family, submitting to their decision, but they believed Dr. Bizard to be too pessimistic regarding his apprehension; and, not wishing to deprive themselves of the woman's services, they paid no attention to his warning and thus exposed themselves, their children and their grandchildren to syphilitic contamination.

Death of Benoît

Dr. René Benoît, former director of the International Bureau of Weights and Measures, corresponding member of the Academy of Science and of the Bureau of Longitudes, died in Dijon at the age of 78. He was the son of Dr. Justin Benoit, dean of the faculty of medicine of Montpellier, and was born in that city in 1844. He studied medicine and received his doploma; but pure science attracted him, and he came to Paris, where he prepared his thesis on the electric resistance of metals. In 1872 the Meter Commission met for the first time and created the scientific laboratory which is known today as the International Bureau of Weights and Measures. René Benoît was first appointed assistant director of the bureau and then director, and during that time he devoted his time to researches on measures of length, thermometry, etc.

A Suggestion for Solving the Medical Crisis

A few days ago, Paris physicians received a pamphlet bearing the suggestive title, "How to Avoid the Medical Crisis." As this question absorbs the thoughts of the medical profession, physicians hastened to examine it. One of the suggestions was:

> When a patient comes to see you, as a rule you submit him to the regular questioning and auscultation, then you give him a prescription, and you do not see him any more; or perhaps a long time after, if it is a serious case. The pecuniary result is one consultation only. Supposing now that you have in your office our high frequency apparatus; besides giving your patient a new form of treatment you hold him, because you alone and not he can apply the treatment, and he is obliged to come back to you. Thus you are paid for six, ten or even twenty visits.

The cynicism of manufacturers of proprietaries is a matter of common knowledge; but this manufacturer of electrical apparatus is by no means their inferior.

A Practical Course in Dietetic Cooking

Often dietetic prescriptions are not followed to the letter because the physician is not sufficiently insistent on culinary details. Many times these details are unknown to the physician, as they were not included in his studies. Dr. Marcel Labbé, professor of pathology and therapeutics at the Faculty of Medicine of Paris, has tried to fill this gap by organizing, at the Charité Hospital, a practical course in dietetic cooking. The course consists of ten lessons, and includes the regimen for gastric and intestinal dyspeptics, nephritics, the obese, diabetics, etc. Labbé and his collaborators will take up practical questions, as, for example, the preparation of fermented milk, the baking of bread, cooking of vegetables, the preparation of unsalted dishes for nephritics, food without fats for the obese, and bread and sweetened dishes for diabetics. A congress has been held recently in Paris by the Fédération internationale pour le développement de l'enseignement ménager, in which questions pertaining to food hygiene and cooking courses for young women of all classes, and especially of the working class, were taken up.

Responsibility of Physicians with Regard to Alcoholism

The French Society of Abstinent Physicians, considering the special responsibility of the medical profession as regards alcoholism, has adopted a resolution, urging physicians to be conscious of this responsibility:

> To respect on all occasions, and especially when prescribing, the habits and convictions of abstainers, as well as the integrity of those who have not yet been affected by alcohol; to eliminate from therapeutic and alimentary prescriptions preparations and beverages containing alcohol, as it is proved that there is no therapeutic indication for alcohol or fermented beverages and that they can be replaced by other medicines; to collaborate, with the help of observations made in their hospital service and among their clients, and of methodical and unbiased experiences based on the effects of abstinent regimen in patients and healthy persons, with a view of making an impartial inquiry into the therapeutic value of alcohol, and to join in the efforts made everywhere against alcoholism.

International Congress of Otology

The tenth International Congress of Otology, presided over by Dr. Sebileau, professor of clinical otorhinolaryngology of the Faculty of Medicine of Paris, will be held in Paris, July 19-22, under the patronage of the minister of public instruction. The subjects chosen for discussion are: (1) abscess of the cerebellum; (2) auricular meningitis; (3) value of functional tests of the vestibular apparatus, and (4) syphilis of the ear. An extra session will be devoted to a discussion of treatment of cancer of the larynx by surgery, roentgen ray and radium. Every morning, visits will be made for the observation of cases in otorhinolaryngology and surgery of the head and neck (operations, presentation of patients, etc.). An exhibition of instruments as well as anatomic and pathologic parts of the diseased ear, nasal fossae and nasopharynx, will be held at the Faculty of Medicine during the congress. The subscription fee of 100 francs includes a copy of the proceedings and of the discussions, and must be sent to the treasurer of the congress, Dr. Georges Laurens, 4 Avenue Hoche, Paris.

Proprietaries and the Academy of Medicine

In one of my previous letters (The Journal, April 8, 1922, p. 1065), I mentioned the discussions which took place recently concerning communications made to medical societies regarding pharmaceutic specialties. The *Journal des praticiens* has recently published an editorial on the subject, directed against certain communications made to the Academy of Medicine. The editorial calls attention to the fact that communications made to the Academy of Medicine bearing on a therapeutic subject do not always have the weight of disinterested information. The members of the academy hear the author of the communication laud the curative qualities of a medicament with which he was first to experiment, and, fifteen days later, the medicament which had been praised before the academy has become a proprietary. The Academy of Medicine, naturally, cannot endorse a medicinal article about which it knows nothing. Thus, the *Journal des praticiens* asks whether it is not possible, before authorizing a communication on a therapeutic subject to the Academy of Medicine, to submit the conclusions to a committee composed of several members, in order that the statements made by the author can be verified.

PRAGUE

(From Our Regular Correspondent)

May 5, 1922.

Statistics on Stillbirths

A study of the statistics of stillborn children has been made recently in the ministry of public health, in connection with the venereal disease survey which the ministry is undertaking. The emphasis on the spread of venereal diseases in the after-war period in this country has been based exclusively on personal impressions, without any statistical background. As the experimental reporting of venereal diseases, which was carried out in February, 1921, did not give an idea as to the changes in the spread of these diseases in the course of time, a study of the statistics of stillborn children has been undertaken in order to find out whether their relative number could not be used as an index of the spread of the disease, marital syphilis, especially. There is no uniform rule for reporting stillbirths, as to the month of gestation from which reports have to be made. The practice is that stillborn children are usually reported beginning with the seventh month of pregnancy. The number of stillborn children expressed in percentages of children born alive was practically constant before the war, and a steady but small increase was noted. Larger cities always have had a higher rate of stillbirths and the increase in the cities kept step with the increase in the country. During the war, and especially in its last years, a more rapid increase took place. But the most pronounced increase came in the years following the war. Whereas, between 1910 and 1914, the rate of the stillborn to the living increased 5 per cent., it increased 10 per cent. during the four years of the war. In the three years following 1918, it increased 15 per cent., so that it is probable that the increase for the four years following the war will greatly exceed that of war time. As it appears that other factors influencing the number of stillbirths which could explain the marked increase have not changed, it is probable that this increase is due to a disease which, according to clinical experience, has a very deleterious effect on fetal life. This conclusion will be confirmed if the rate decreases in the course of the following years, when a decrease of marital syphilis can be anticipated, on the basis of military and other statistics.

Demonstration in Rural Hygiene

The ministry of health has undertaken a rural hygiene demonstration in the small community of Kvasice and neighboring villages in the province of Moravia. The demonstration is being carried out with the help of the International Health Board of the Rockefeller Foundation, which has undertaken many similar demonstrations in other countries. The community chosen for the demonstration comprises a population of about 3,000. This place has been selected because it has fairly intelligent inhabitants, living in typical rural conditions, and it has been known for its high rate of endemic typhoid. The work has been started by a systematic health educational campaign, and a sanitary survey is being carried out. A popular typhoid exhibit belonging to the ministry of health has been brought to the town, and educational literature is being distributed. The Czechoslovak Red Cross has lent its health educational unit, which is equipped with a moving picture outfit on a truck. The unit remained in Kvasice for a week, and gave lectures to the schoolchildren and to the general public. The newspapers have published articles on the importance of the work, and have appealed to the public for cooperation. A housing survey is being made in order to discover the environmental needs. At the same time, an analysis of the statistical material will reveal the damages which the community has suffered from preventable diseases. Model toilets have been constructed by a local carpenter under the direction of a sanitary engineer. A well protected public water supply will be furnished the community, in cooperation with the province of Moravia and the ministry of health, which will also help financially. It is anticipated that such a demonstration, if properly conducted and given sufficient publicity, will lead to a livelier interest in public health matters, which is needed not only in the large cities but also in rural communities.

NETHERLANDS

(From Our Special Correspondent)

April 29, 1922.

Emergency Service in Frise

The province of Frise has just organized an emergency service for urgent cases. Often available means of transportation and information do not allow the surgeon or physician to act as quickly as the case demands. Automobile ambulances are reserved for the urban population of large cities, and when an accident or a disease demanding urgent intervention occurs in a village distant from the city, the patient is carried in an inadequate vehicle to a city hospital. With the new organization, however, the city hospital, at the first call, sends its automobile ambulance to any part of the province. All the localities have telephone connections with the city of Groningen, and the smallest village has a telephone station which can get in touch day and night with the city. Thus, a patient can be carried promptly and safely to the hospital, where he can be operated on immediately.

Medical Control in the Postal Administration

Results from the medical control of postal employees on sick leave have just been published. Before the organization of the control committee, sick leaves reached 8.8 per cent., but are now only 1.8 per cent. These figures show a wonderful saving for the postal administration. In 1919, before the establishment of medical control, with a personnel of 19,437 employees, there were 391,692 days of sickness; while in 1921, with a personnel of 23,956, only 259,152 days of sickness were reported. The savings realized by the government amount to 600,000 florins.

The Protection of Nurslings

The Netherlands Association for the Protection of Nurslings continues its fight throughout the country. It will meet this month at Arnhem. The subjects chosen for discussion are: protection against syphilis; protection of the child born before term, and the fight against tuberculosis.

The Leyden Hospital

A new and important medical enterprise is in course of realization at Leyden under the auspices of the ministry of public instruction. The hospital, which before the war would have cost 6,000,000 florins, will now cost 14,000,000. It will have 600 beds distributed throughout several wings.

Medical Courses

The medical association of Amsterdam organized for the end of June a series of conferences and advanced courses on diseases of children. The courses will last five days and will include medical, surgical and social pediatrics. Well known pediatricians will take part in the discussions, and an opportunity will be afforded for all physicians to see briefly what progress has been accomplished in this branch of medicine.

The Number of Hospitals in the Netherlands

The *Nederlandsch bond voor Ziekenverpleging,* published in 1921, as it did in 1911 and 1916, statistics concerning the number of hospitals and the number of beds available. In 1911, there were 194; in 1916, 239; in 1921, 290. The beds numbered 22,381 in 1916, and 25,121 in 1921. Of this number, 17,106 were occupied, or 69 per cent.; while five years before, the number was 16,935, or 75 per cent. The personnel also increased from 4,056 in 1911 to 7,827, and those holding official diplomas from 30 per cent. in 1911 to 40 per cent. in 1921.

Results of Revaccinations

The commission appointed by the Nederlandsch Vereeniging van Koepokinrichtingen to investigate the subject of revaccinations was composed of D. A. Se Jong, H. van de Berg and Y. Rodenhuis. The commission considered the following points: The success of the fight against smallpox depends on intensive revaccination, as results show that in children the immunity conferred by vaccination is lost after a certain length of time. But the importance of this loss of immunity is difficult to determine on account of the difference in interpretation of results of vaccinations.

The commission called attention to the course which vaccinations and revaccinations pursue. In revaccination the specific reaction occurs earlier; it is abortive, with an extreme reaction; different points of inoculation reach different stages of development; the process is more superficial and there is no cicatrix. The fact that public revaccinations are examined, as a rule, one week later, makes it difficult to estimate the results obtained. In private practice, subjects should be examined three or four days after revaccination. The success of the operation is, however, very often recognized by certain signs. The commission describes and distinguishes three stages in which it is easy to recognize results of revaccination. It concludes that a revaccination showing even a slight areola or infiltration, or which has left a small brown scab, should be considered as positive. As regards degrees of success, they should be designated as papulous and vesicopustular, the latter including also cases in which previous vaccination was without effect, and which consequently are in reality a vaccination.

BERLIN

(From Our Regular Correspondent)

May 5, 1922.

Congress of Internal Medicine

The thirty-fourth congress of the Deutsche Gesellschaft für innere Medizin, which was held in Wiesbaden, the latter part of April, under the chairmanship of Professor Brauer of Hamburg, was attended by more than 800 physicians. The proceedings centered about the two subjects that had been proposed by the management for discussion: "Diseases of the Liver" and "Internal Secretions," but most of the other fields of internal medicine were drawn on during the course of the discussions. Chemistry plainly took the lead among the methods of research.

ICTERUS

The simplest cause of icterus, namely, the deposition of a large amount of biliary pigment in the blood, is, Eppinger pointed out, the mechanical hindrance of the outflow of bile; as, for example, stoppage of the common bile duct. On the other side of the mechanical obstruction, the bile collects, breaks through the finer structure of the canals leading backward and makes its way through the lymph paths to the blood vessels. In some marked types of jaundice, the stool retains its natural color, which is evidence that the flow of bile is not obstructed. The explanation for this is difficult, and none of the attempts to explain it are convincing. From Morgagni to Virchow and on down to the scholars of our own time (for example, Naunyn and Minkowski), no adequate explanation has been offered. It is quite certain that biliary pigment can be formed outside of the liver; namely, where a decomposition of red blood corpuscles takes place. What is not clear is whether the transition of such biliary pigment to the blood takes place without the mediation of the liver; also, whether the liver plays a part when icterus occurs following the ingestion of certain poisons. Moreover, Banti has shown that, in a certain type of icterus which follows the operative removal of the spleen, a yellowness of the skin which has persisted for years may disappear within a few days. It has also been found that, besides the liver cells proper, there is another kind of cell in the framework of the liver, the so-called Kupffer (star-shaped) cells, which play a part with respect to the bile pigments, and whose function has been at least partially explained by the researches of Aschoff and Lepehne. Thus, we may assume that when the separation of the bile pigment in the liver takes place, the material for the pigment is being prepared elsewhere as needed. The origin of the ordinary form of icterus, the so-called catarrhal type, is still obscure. For a long time, it was believed that it was of purely mechanical origin, being due doubtless to a catarrhal swelling of the region where the bile enters the intestine so marked that the outflow is entirely inhibited. But this is not so much the cause as the result of the damage to the liver cells. Furthermore, it has been shown by Naunyn and Minkowski that from catarrhal icterus to the forms of acute atrophy of the liver and the shrinking of the liver, which develops only after many years, certain uniform progressive disturbances may be demonstrated in the liver tissue. Three distinct groups can be distinguished: (1) that of mechanical origin; (2) that caused by damage to the liver tissue, and (3) that associated with the destruction of blood pigments. As in so many other affections, there are many transitional and mixed types.

THE PITUITARY GLAND

In the introduction to his article on the pituitary gland, Biedl recalled these facts and principles: The hypophysis consists anatomically of the anterior lobe (the prehypophysis), the intermediate lobe (the pars intermedia), the posterior lobe (the neurohypophysis) and the pars tuberalis;

furthermore, there are the accessory parahypophyses; above all, the pharyngeal hypophysis and the remnant of the embryonic hypophysial cavity.

In their embryonic development, the pars intermedia and the pars tuberalis are derived from the ectoderm, and the anterior lobe and the accessory formations from the entoderm; while the neurohypophysis is a part of the brain floor.

Structurally, the anterior lobe and its accessory glands constitute an endosecretory gland, which throws its lipoid and granular secretion products directly into the blood stream, and only in the case of overproduction stores them up in the hypophysial cavity and its cysts. The epithelial cells of the intermediate lobe line follicle-like cavities, into which they give off their colloidal secretion. This is poured through the clefts in the tissues and, further on, through the neurohypophysis and the pedicle of the hypophysis, in the direction of the brain, into the large lymph cavity of the ventricle of the brain. The pars tuberalis shows great similarity structurally to the intermediate lobe.

From the anterior lobe, a lipoid substance called tethelin can be obtained; the intermediate lobe and the posterior lobe contain, aside from one or more substances of specific pharmacodynamic effect, histamin and histamin-like substances, which are decomposition products of protein bodies. The substance of the anterior lobe possesses a specific activity as a stimulator of growth; while the peculiar, more closely analyzed effects of extracts of the intermediate and posterior lobes find an extensive therapeutic application. The relationship between the hypophysis and the other endosecretory organs may be recognized by the structural changes which take place, during the various stages of sexual life, in the pathologic variations of functions, and the changes of function experimentally produced, in the several endosecretory organs (genital gland, thyroid, suprarenals, pancreas), on the one hand, and, on the other hand, in the structural changes of the latter associated with changes in the activity of the hypophysis.

The functional performances of the various portions of the hypophysis can be deduced from the large number of existing experimental and clinical observations, taken in conjunction with the anatomicopathologic findings; and the following principles may be enunciated:

1. The hypophysis is an organ necessary to life, as evidence of which we have hypophysial cachexia and cachexia hypophysiopriva, in both man and animals.

2. The anterior lobe of the hypophysis contains gland elements which affect growth through the action of a morphogenetic hormone. As is likewise true of the pharyngeal hypophysis, its functional importance pertains chiefly to the period of growth; in the adult, it becomes important only in case of hyperactivity. As evidence of this, we have dwarfism and infantilism as the expression of arrested development following the experimental removal of the anterior lobe in animals; nanosomia pituitaria, hypophysial infantilism, ateliosis and senilism as the results of hypofunctioning associated with underdevelopment, or following destructive processes in the anterior lobe in the presence of tumors which arise in the lobe itself or in the hypophysial canal; also, the fact that hypophysial infantilism is affected by anterior lobe medication.

As the opposite of arrested growth, we have giantism, the result of hyperplasia and tumors of the anterior lobe, which arise before the close of the period of physiologic growth; acromegaly associated with hypoplasias and especially with eosinophilic adenomas of the anterior lobe; acromegaloid manifestations associated with hyperplasias of other varieties of cells, pointing possibly to several substances, affecting growth in various ways. The nature of the disordered functioning is not as yet understood; nor is there any very tangible evidence for the assumption that certain adenomas of the anterior lobe yield secretions which influence metabolism. The disturbances of metabolism associated with acromegaly are due to the effects of a tumor on the functioning of the intermediate lobe. Further evidence is furnished through the application of roentgen irradiation to hypophysial tumors and by their operability and the results of operations that have been hitherto performed.

3. The function of the pars tuberalis has not as yet been clearly ascertained.

4. The intermediate lobe is a gland affecting metabolism and possessing a correlative functional action. The secretion of the intermediate lobe passes through the posterior lobe and the stem of the hypophysis, serving to establish a connection with the metabolism center located in the midbrain. The evidence for this conception lies in the obesity, together with genital dystrophy, that follows experimental lesions and destruction of the pars intermedia, following obstruction or division of the hypophysial stem in animals, manifestations which occur at all ages but which are more marked in young animals, owing to the arrest of growth caused by the removal of the anterior lobe. Adiposogenital dystrophy in man, as described by Fröhlich, is caused by arrested development and destruction of the intermediate lobe, by pressure of tumors on this tissue, or by factors which prevent the flow of secretion through the hypophysial stem, such as hydrocephalus or growing tumors. A careful analysis of the effect of the secretion of the pars intermedia, either direct or through the mediation of the nervous metabolism center, lends further support to this theory. A newly established syndrome is: congenital malformations (atresia ani, polydactylism, retinitis pigmentosa); deformities of the skull with retarded mental development; marked obesity, with or without genital hypoplasia, and peculiar disturbances of digestion (occurrence in two members of a family, in whom there were no changes in the hypophysis and no signs of a brain tumor or of pathologic cerebral pressure, but diabetes insipidus was a concomitant symptom). Attention was called to the paramount importance of the water regulatory center in the region of the tuber cinereum.

5. The physiologic significance of the topical relationship of the anterior lobe affecting growth and the intermediate lobe influencing metabolism, and the reason for their union in the hypophysial apparatus are not fully understood as yet, but it should be noted that we have analogous conditions in other endosecretory organs. From the pathologic standpoint, they constitute the basis of manifold combinations of affections that relate to the hypophysis. The position of the hypophysis in the endocrine system is determined by the correlative relations of its parts, evidence for which is found in the anomalies of growth already mentioned as commonly associated with disturbances of secretion. The clinical aspects of certain types of polyglandular affections may be mentioned in this connection.

Marriages

Hugo Frederick August Baske, M. C., U. S. Army, to Miss Alice Virginia Cooper, both of San Diego, Calif., May 5.

Clarence Day Powell, Valier, Mont., to Mrs. Olivia B. Fradt of Casper, Wyo., in April.

Ralph Aregood Law to Miss Frances Louise Weber, both of Little Rock, Ark., May 2.

Edward William Lazell to Mrs. Elizabeth Weed Ketcham, both of Denver, April 15.

Smith Hollins McKim, New York, to Mrs. Edward Ladd at New York, May 11.

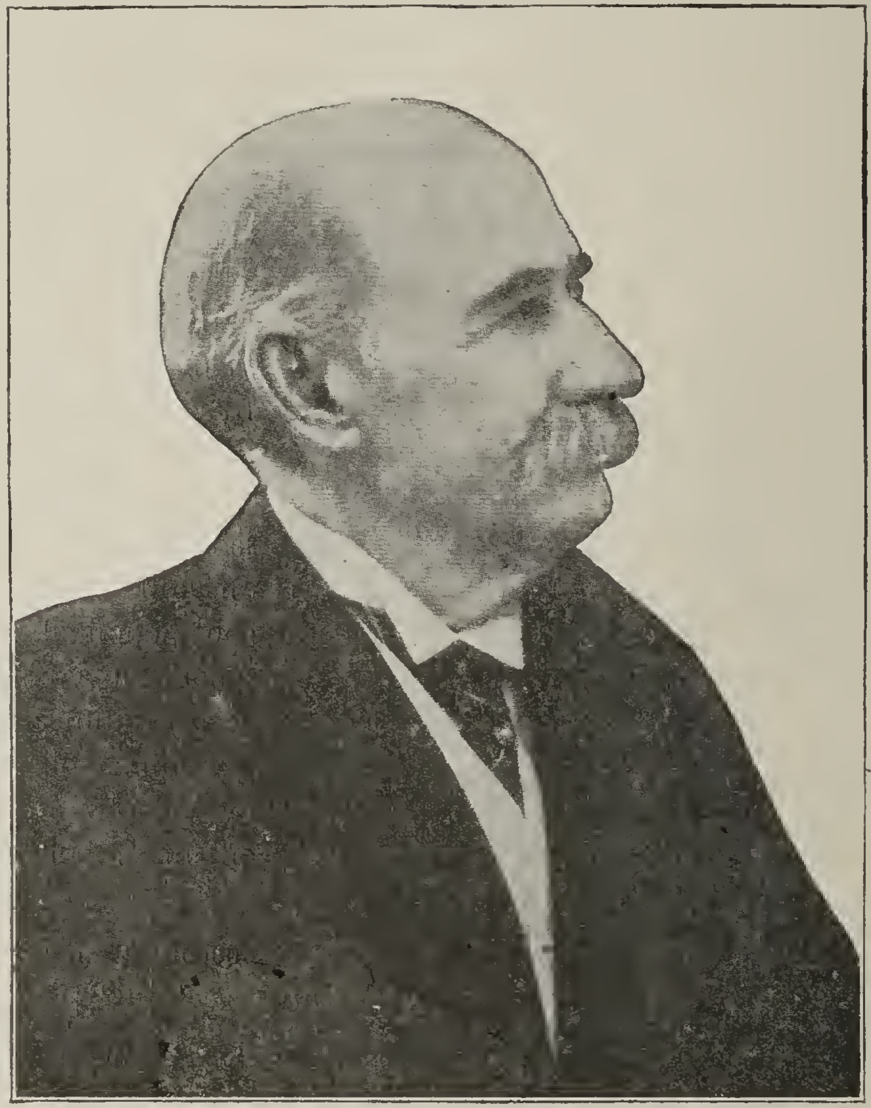
Bernard A. O'Hora to Miss Ruth Elizabeth Nagle, both of Detroit, May 20.

Deaths

John Allen Wyeth ⊕ New York City; died suddenly of heart disease, May 28. Dr. Wyeth was born in Alabama, May 26, 1845. He was educated in the common schools and for one year at a military academy. During the Civil War he served as a private soldier in the Alabama Cavalry; fought in each of the engagements at the Battle of Chickamauga, and while following the retreating Federals was captured and spent fifteen months in the military prison at Camp Morton, Ind. When peace was declared he engaged in farming and in 1867 began the study of medicine under Dr. J. M. Jackson of Guntersville, Ala. He graduated at the University of Louisville Medical School, in 1869. He then became surgeon to a railroad construction company in Arkansas, but after one year gave up the practice of medicine, engaging in steamboat and contract work, and in 1872 erected a public building for the county of Woodruff, Arkansas. In October, 1872, he moved to New York, matriculated at Bellevue Medical College, and in March, 1873, received the degree of M.D. Ad eundem. After his graduation he was appointed assistant demonstrator in anatomy, 1873 to 1874. Because of ill health he gave up practice and visited Europe from 1876 to 1878. In 1880 he became prosector to the chair of anatomy and surgery in Bellevue College, which position he held until 1897. In 1881 he organized, and became senior professor of surgery in, and later president of the faculty, of New York Polyclinic Medical School and Hospital, the first postgraduate medical school in the United States. In 1893 he was elected first vice president of the American Medical Association; in 1900, president of the New York State Medical Association, and in 1901, at St. Paul, President of the American Medical Association.

In 1886 Dr. Wyeth married Florence Nightingale Sims, daughter of Dr. J. Marion Sims of Alabama, and among his contributions to medical science of particular interest was an address on the life and work of his distinguished father-in-law, delivered in 1895. Dr. Wyeth won a prize given by the American Medical Association in 1878 for an essay on "surgery of the carotid arteries." Following this initial venture he contributed widely to both lay and medical periodicals. Among his notable papers were an address on medical education in 1890, and at the same time, the description of a method of amputation at hip and shoulder joints; and in 1903, the suggestion of the injection of boiling water for the treatment of inoperable tumors. He was also the author of two books on surgery, the biography of General Forrest, and his own autobiography, entitled "With Sabre and Scalpel," published in 1914.

Dr. Wyeth was a man of varied and interesting activities, whose career contains all of the romantic elements, which make up the lives of American medical pioneers. During the World War the postgraduate school was turned over to the government for hospital purposes. Several years ago Dr. Wyeth accidentally fell and sustained a fracture, from which, however, he made a satisfactory recovery, and recently he was especially active in undertaking the reopening of the postgraduate school. With Dr. Wyeth's death, there passes a conspicuous figure in the development of American medicine.



John Allen Wyeth, M.D., LL.D., 1845-1922

Wallace Blanchard ⊕ Chicago; Chicago Medical College, 1869, died at St. Luke's Hospital, following an operation, May 26, aged 73. He was a member of the American Orthopedic Association and at one time president of the Chicago Orthopedic Society. Dr. Blanchard served for many years as assistant clinical professor of orthopedic surgery in Rush Medical College and as attending orthopedic surgeon to the Chicago Home for Destitute Crippled Children.

Welcome Taylor Alexander, New York; Bellevue Hospital Medical College, New York, 1870; formerly dermatologist to the Demilt Dispensary; assistant professor of dermatology at the New York Postgraduate Medical School, New York; at one time a member of the New York Dermatological Society; died, May 18, aged 74, at the New York Post-Graduate Hospital of pulmonary edema following an operation for carcinoma.

Frank De Witt Reese ⊕ Cortland, N. Y.; Long Island College Hospital, Brooklyn, 1885; formerly president of the Cortland County Medical Society, the third district branch and the sixth district branch of the New York State Medical Society; died, May 2, aged 63, at the Syracuse Memorial Hospital, Syracuse, from influenza and kidney trouble.

Edmund Randolph Jenkins, Washington, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1874; Bellevue Hospital Medical College, New York City, 1884; member of the Iowa State Medical Association; formerly president of the Wabash County Medical Society; member of the school board; died, May 22, aged 73.

Melvin P. Malcolm, Charleston, W. Va.; University of Louisville Medical Department, Louisville, 1890; member of the West Virginia State Medical Association; formerly member of the state legislature; at one time county commissioner and health officer; died, May 12, aged 54, from chronic nephritis with complications.

James W. Birchfield ⊕ Hemlock, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1898; formerly on the staff of the Eastern Indiana Hospital for the Insane, Richmond; stationed at the Soldiers' Home, Lafayette, during the World War; died, May 11, aged 60, from heart disease.

James Thacher Adams, Oakland, Calif.; University of Vermont College of Medicine, Burlington, Vt., 1896; formerly psychiatrist to the Psychopathic Department of the Boston State Hospital, Boston; died, April 27, aged 51, from aortic stenosis.

Lucullus R. Sellers, Fort Scott, Kan.; Indiana Medical College, Indianapolis, 1877; for sixteen years staff physician at Osawatomie State Hospital; formerly superintendent at the Larned State Hospital; died, May 7, aged 73, from heart disease.

Harry Brown McCallum, Ann Arbor, Mich.; University of Michigan Medical School, Ann Arbor, 1921; intern at the University Hospital, where he died, April 21, aged 25, from spinal meningitis, following operation for mastoid abscess.

Madison T. Didlake, Monticello, Ind.; Chicago Medical College, 1867; member of the Indiana State Medical Association; for eighteen years a member of the school board; died, May 11, aged 77, from carcinoma of the liver.

Walter H. Allen ⊕ Marlin, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; was drowned in the Brazos River at Marlin when a steel bridge collapsed, May 16, aged 53.

⊕ Indicates "Fellow" of the American Medical Association.

Laura G. Shrom, Pittsburgh; Woman's Medical College of Pennsylvania, Philadelphia, 1898; president of the Women's Medical Association of Allegheny County; died, May 15, aged 73.

Frank Austin Roy, New York City; Medical Department of the University of the City of New York, 1879; died, May 9, aged 64, from a revolver wound, presumably self-inflicted.

Sigmund A. Tarler, New York; University of Wurzburg, Germany, 1886; at one time on the staff of the Mount Sinai Hospital; died, May 12, aged 64, from cerebral thrombosis.

Edward Harvey Maynard ⊕ Nyack, N. Y.; Medical Department of Columbia College, New York City, 1873; visiting physician to the Nyack Hospital; died, May 8, aged 72.

Gus S. Shipley, Athens, Tenn. (licensed, Tennessee, 1889); member of the Tennessee State Medical Association; was shot and instantly killed by his son, April 30, aged 52.

William P. Horton, Northwilkesboro, N. C.; Baltimore Medical College, 1892; member of the Medical Society of the State of North Carolina; died, May 6, aged 55.

William Thomas Elmore, New Market, Tenn.; Medical Department, University of Tennessee, Nashville, 1892; died suddenly, May 3, aged 66, from heart disease.

Henry Erhardt Livingstone, St. Louis; St. Louis College of Physicians and Surgeons, St. Louis, 1903; died suddenly in church, May 9, aged 43, from heart disease.

Charles T. Miller, St. Paul, Minn.; Homeopathic Medical College of Missouri, St. Louis, 1875; died, April 27, aged 68, at the St. Mary's Hospital, Minneapolis.

Alfred M. Hathcock, Harrison, Ark.; Missouri Medical College, St. Louis, 1878; formerly member of the state legislature; died, May 2, aged 67.

Monroe Archer Warhurst, Seminole, Okla.; Chicago College of Medicine and Surgery, Physio-Medical, 1899; died, May 6, aged 57.

Marshall Gould Williamson, Upland, Calif.; University of California Medical School, San Francisco, 1916; died, April 27, aged 32.

Wiley H. Young, Clinton, S. C., Atlanta Medical College, Atlanta, Ga., 1887; died, May 13, aged 63, from cerebral hemorrhage.

William Garland White, Jonesboro, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; died, May 3, aged 68.

Joseph Eugene Good, New Market, Va.; Jefferson Medical College, Philadelphia, 1884; died, May 7, aged 60, from meningitis.

Dolphus Harrison Bell, Silver City, N. M.; Washington University Medical School, St. Louis, 1913; died, May 5, aged 35.

Thomas T. Baker, Amandaville, Ky.; Medical Department, University of Tennessee, Nashville, 1877; died, April 26, aged 82.

Frederick Hutchins, Woodbridge, Calif.; Dartmouth Medical School, Hanover, N. H., 1871; died suddenly, May 2, aged 86.

William Frank Preston, Mooresville, Tenn.; University of Tennessee College of Medicine, Memphis, 1909; died, May 4, aged 39.

Zachery Duvall Ridout, St. Margarets, Md.; University of Maryland School of Medicine, Baltimore, 1869; died, May 8.

Eli L. Brown, Thornton, Ind.; Eclectic Medical Institute, Cincinnati, 1879; died, May 10, aged 74, from general paresis.

R. B. Spiers, Kirkland, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1878; died, May 12, aged 76.

Andrew J. Chamberlain, Fleming, Colo.; Northwestern Medical College, St. Joseph, Mo., 1883; died, May 4, aged 71.

Ira Lee Miller, Alabama City, Ala.; Chicago College of Medicine and Surgery, 1912; died, May 3, at Wylam, aged 31.

George W. Fleming, Shelbyville, Ind.; Bellevue Hospital Medical College, New York City, 1868; died, May 3, aged 78.

Thomas T. Key, Norcross, Ga.; Jefferson Medical College, Philadelphia, 1856; died, March 23, aged 87, from senility.

Christopher Van Artsdalen, Philadelphia; Jefferson Medical College, Philadelphia, 1874; died, May 10, aged 72.

John Godfrey Walker, St. Paul, Minn.; Rush Medical College, Chicago, 1873; died, May 8, aged 70.

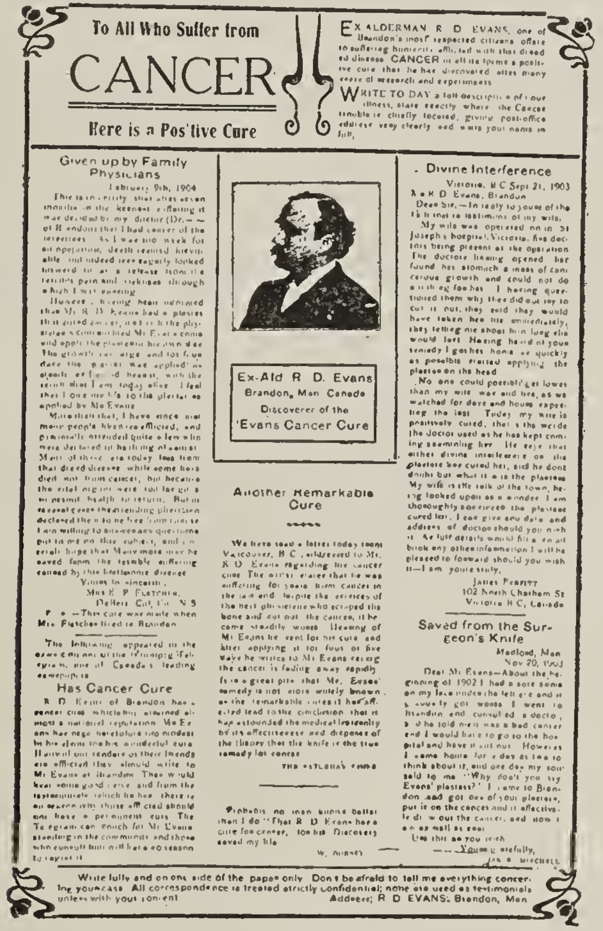
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

EVANS "CANCER CURE"

R. D. Evans of Brandon, Manitoba, sells a "positive cure" for cancer! Evans is "one of Brandon's most respected citizens"—and he admits it. Following the orthodox lines of cancer quackery, Evans made his discovery "after many years of research and experiments" and he now "offers to suffering humanity afflicted with that dreadful disease CANCER, in all its forms, a positive cure"—price "One hundred Dollars in advance"!

Evans declares that his "treatment" will cure either internal or external cancer and that it is especially efficacious in the internal variety! The victim who parts with $100 for this cruel and worthless fake is told to shave a patch about the size of a silver dollar on the crown of the head. The "cure" is then applied to this spot and left there until it dries, when the performance is repeated. This is for the treatment of internal cancer. "For external cancer the discovery is applied on the spot." Says Evans:



To All Who Suffer from

CANCER

Here is a Pos'tive Cure

Given up by Family Physicians

Ex-Ald R D. Evans
Brandon, Man Canada
Discoverer of the
'Evans Cancer Cure'

Another Remarkable Cure

Has Cancer Cure

Divine Interference

Saved from the Surgeon's Knife

> "I have known the discovery to kill cancer of the uteries [Original with Evans.—Ed.] in less than ten hours, and all internal cancers yield more quickly than external cancers do."
>
> "My discovery for the cure of internal cancer is applied on the real crown of the head, the nerve center. The application here does not draw; neither does it break the skin, it kills the cancer and Nature works off the dead matter."
>
> "I have had letters from all over the English-speaking world and hold in my possession letters from titled people, leading physicians and one which I am very proud of from a King."

Evans says that for some time after he made "the discovery for the cure of cancer" he said nothing about it until some neighbors urged him to try it on a woman in his own city who "was dying with internal cancer." "I went and applied my discovery and in three days the lady was walking about the house." After this he began advertising in the newspapers—"on the advice of legal friends."

From letters that have been received by THE JOURNAL it appears that Evans, during the past year, has found not a few victims in the rural districts of Wisconsin, and even, apparently, in some of the larger cities. At various times specimens of "Evans Cancer Cure" have been sent to The Journal with the request that the A. M. A. Chemical Laboratory analyze the product. All the specimens have been alike in odor and color and all have responded to the same qualitative tests. One specimen, after thorough mixing, was subjected to quantitative determinations. The laboratory report follows:

"'Evans Cancer Cure' comes in grayish lumps and has an odor of a rancid fat. When extracted with ether, a saponifiable fat was obtained having characteristics of lard. The amount of fat was 15.3 per cent. The residue from the ether extraction responded to tests for iron (both ferrous and ferric forms) sulphate and traces of magnesium and sodium. Mercury, arsenic, and zinc were not found even in traces. Alkaloids were also absent. Quantitative estimations on the fat-free extracts yielded the following:

"Iron (Fe)	29.6
"Sulphate	56.3

"The major portion of the fat-free extracts contains ferrous sulphate (59.5 per cent.) with a smaller portion of a ferric sulphate (26.4 per cent.); the remainder is probably due to one molecule of water of crystallization. The substance corresponds to Exsiccated Ferrous Sulphate U. S. P., which contains the equivalent of not less than 80 per cent. of the anhydrous salt.

"From this it seems evident that Evans Cancer Cure is essentially a mixture of 1 part of a fatty substance (such as lard) and 5 parts of dried ferrous sulphate."

From the chemist's analysis it is evident that five cents' worth of dried ferrous sulphate ("copperas" or "green vitriol") and a dab of lard will accomplish just as many cures of cancer as the $100 treatment of the "respected citizen" of Brandon, Manitoba.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Beil's New Nerve Tablets.—The Beil Mfg. Co., Denver, Colo., a concern that has been dealt with more than once in the pages of The Journal, shipped in August, 1919, a quantity of "Beil's New Nerve Tablets" which were misbranded. The federal chemists reported that analysis showed the tablets to consist essentially of aloin, zinc phosphid, nux vomica extractives, resin, a laxative plant drug, magnesium and iron salts. Some of the claims on or in the trade package for this product were:

> "Nerve Tablets . . . to Feed the Brain, Build up Wasted Tissues and Send Fresh Rich Blood . . . through . . . the System."
>
> "A Remedy . . . for Nervous Debility, Loss of Memory, Atrophy, Dyspepsia, Kidney Diseases and Catarrh of the Stomach, Liver and Kidneys."
>
> "For Nervous Debility, Failing Sight, Sleeplessness, Failing Memory, Despondency. . . . Five boxes . . . is enough for the most aggravated case."

These and similar claims were, naturally, declared false and fraudulent. In October, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9814; issued Jan. 27, 1922.*]

Diemer's Products.—The Dr. F. W. Diemer Medicine Co., Springfield, Mo., shipped in August and December, 1919, a number of products that were misbranded.

"Diemer's Prescription for Gonorrhea and Gleet' was reported by the federal chemists to consist of two preparations: pills for internal use containing chiefly Epsom salt, calcium sulphid, ferrous sulphate and oil of cubebs; tablets for external use containing chiefly boric acid, zinc sulphate and hydrastin. The product was falsely and fraudulently represented as an effective cure for gonorrhea and gleet.

"Diemer's Dyspepsia Tablets," when analyzed by the federal chemists, were found to consist chiefly of baking soda, a laxative drug and ipecac alkaloids. These tablets were falsely and fraudulently represented as a remedy and cure for dyspepsia, indigestion, catarrh of the stomach, anemia and loss of flesh. They were also falsely labeled "a purely vegetable remedy, free from all mineral" when, as a matter of fact, they contained baking soda.

"Diemer's Hot Toddy" were reported by the federal chemists to consist of tablets containing, chiefly, milk sugar, baking soda, a laxative plant drug, and small amounts of ginger and red pepper flavored with oil of cassia. These were falsely and fraudulently represented as a remedy and cure for indigestion, sick headache, jaundice, diarrhea, rheumatism, neuralgia, hay fever, suppressed and irregular menstruation, headache, kidney disease, hardening of the liver and various other conditions.

"Diemer's Kidney and Bladder Tablets," according to the federal chemists, consisted chiefly of baking soda, saltpeter and a laxative plant drug. They were falsely and fraudulently represented as a cure for backache, dropsy, congestion of the kidneys, inflammation of the bladder, etc.

"Diemer's Treatment for Piles" was found by the chemists to consist of suppositories containing cacao butter, borax, alum and tannin-bearing plant material. These were falsely and fraudulently represented as an effective treatment for piles of every kind.

"Diemer's Antiseptic Female Suppositories" were found to contain cacao butter, borax, alum and tannin-bearing plant material. They were falsely and fraudulently represented as an effective cure for leucorrhea, lacerations, ulcerations and all discharges from the vagina or uterus.

"Diemer's Rheumatic Remedy," according to the chemists, contained, chiefly, acetanilid, baking soda and a laxative plant drug. It was falsely and fraudulently represented as a cure for rheumatism, gout, lumbago, "crick in the back," pain in the side, etc.

"Diemer's Pennyroyal and Tansy Compound" was found to consist of tablets containing chiefly plant material, including aloes and red pepper, with saltpeter and sand. This preparation was falsely and fraudulently represented as an effective cure for suppressed, irregular and painful menstruation.

"Diemer's Preparation for Specific Blood Poison" was found to contain, chiefly, calcium carbonate, ferric oxid, potassium iodid and small amounts of arsenic and mercury. It was falsely and fraudulently represented as a cure for syphilis.

"Diemer's Laxative Grip-Malarine" was found to consist of acetanilid, baking soda, aloes and red pepper. It was falsely and fraudulently represented as a cure for grip, coughs, bronchitis, malaria, neuralgia, etc.

In April, 1921, the Dr. F. W. Diemer Medicine Company pleaded guilty and was fined $60 and costs.—[*Notice of Judgment No. 9830; issued Jan. 27, 1922.*]

Manhood Tablets.—Between May, 1919, and February, 1920, the Hollander-Koshland Co., Baltimore, Md., shipped a quantity of "Manhood Tablets" from Maryland to Mississippi. The federal chemists reported that analysis showed the preparation to contain damiana, strychnin and zinc phosphid. The article was labeled with such claims as:

> "Manhood Tablets For Use in The Treatment of Sexual Weakness or Impotence. . . . Lost Manhood, Debility, Lack of Virility and Impotency."
>
> "Recommended. . . . In Treating . . . Psychic Impotence. Atonic Impotence. . . . Prostatorrhea & Spermatorrhea."

These claims were declared false and fraudulent and, in May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9837; issued Jan. 27, 1922.*]

Patten's Lightning Salve.—In February, 1920, a quantity of "Patten's Lightning Salve," sold by John H. Patten, Mountain View, Mo., was shipped from Missouri to Illinois in violation of the federal Food and Drugs Act. When analyzed by the Bureau of Chemistry the product was found to consist of camphor, turpentine, soap, rosin, tallow, beeswax and petrolatum. It was labeled as an effective remedy and cure for piles, fistula, rheumatism, carbuncles, blood poison, eczema, diphtheria, croup, pneumonia, all throat and lung troubles, kidney, liver and bowel troubles, sore eyes, backache, female trouble, deafness, spider bite, diabetes, cancer and other conditions too numerous to mention. Naturally, these claims were declared false and fraudulent. In April, 1921, Patten pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 9833; issued Jan. 27, 1922.*]

Correspondence

"AMERICAN MEDICAL AID FOR RUSSIA"

To the Editor:—As one looks over the situation of medical practice and health services throughout the world at the present time, there is one outstanding and desperate condition of immediate concern to us as physicians: the almost total destitution of physicians in Russia. The entire lack throughout the country in hospitals, relief camps, cities and villages, of the most elementary supplies, instruments and drugs, appliances and dressings used in diagnosis, treatment and prevention of disease, makes the position of our fellow practitioners in that terribly afflicted land pitiful in the extreme.

No amount of food and material relief in the form of clothing or supplies will render unnecessary the provision of those means by which the science of medicine is made effective in surgery, in medicinal therapeutics and in the control of contagion. A sincere effort is being made by physicians here and in other cities and states, in conjunction with the American Medical Aid for Russia Committee, 103 Park Avenue, New York City, to meet the urgent plea of the physicians of Russia for the simple tools of their trade, for the ordinary office supplies of soap, anesthetics, antiseptics and drugs to heal and relieve.

Every precaution has been taken by this organization to prevent such funds as are provided from falling into the hands of those who might abuse the generosity of donors or divert them to selfish or political ends. Supplies purchased in the cheapest markets are made available for the use of public hospitals in Russia through the commissioner of health of Moscow, with the approval and personal knowledge of a representative of the American Friends Service Committee.

This appeal is made that readers may be induced to bring this matter of medical relief to the medical associations of which they are members. Will not each physician himself, aided by his patients who receive here all of the benefits of a well equipped office, hospitals and professional facilities, give, and give generously in the name of American medicine?

Haven Emerson, M.D., New York.
Chairman, New York State Campaign,
American Medical Aid for Russia.

"THE AMOUNT OF OPIATES USED IN THE LEGITIMATE PRACTICE OF MEDICINE"

To the Editor:—Dr. Alexander Lambert, in his article in The Journal, May 20, does not take into consideration the fact that only a small percentage of patients with incurable painful diseases in the terminal stage, when they require the largest amount of morphin, are treated in the hospital.

W. S. Rambo, M.D., Rochester, N. Y.

To the Editor:—In his article in The Journal, May 20, Dr. Lambert states that about 2.25 per cent. of the population of the United States is ill each year, or "2,385,000"' of the total population. This figure seems to me to be exceedingly small. While I have not the census figures available at present, it seems to me that more than a half of this morbidity rate could be taken care of by the mortality rate alone as estimated by the United States Census reports, if my impressions are correct, and I feel that I am correct, judging from my experience as a county health officer for a population of 13,000, in which there are nine practicing physicians, all of whom keep reasonably busy. Surely Dr. Lambert must prorate us more than 292½ patients when our city sexton buried fifty-nine residents in the local cemetery for an approximate population of 7,000, not a bad mortality rate, even though it may be or is incomplete.

No doubt the United States uses too much opium; but close figuring often seems to me to be poor argument, especially when an acute pain tempts prescribing medication stronger than benzyl benzoate. I prescribed an opiate about three times during the fiscal year ending June 30, 1922, but I do not treat the sick except in emergencies, and an occasional pauper.

H. D. Allen, Jr., M.D., Milledgeville, Ga.
Commissioner of Health, Baldwin County, Ga.

"AN ABDOMINAL BANDAGE FOR PATIENTS WITH WHOOPING COUGH"

To the Editor:—The article by Dr. Paul Luttinger giving a description of an abdominal bandage he had devised for use in whooping cough (The Journal, May 20, p. 1536) called to my recollection a similar contrivance given me many years ago by one of those "mothers in Israel," then plentiful, now seldom seen. She used an old crash towel, that was soft and elastic. It was wide enough to extend from the margin of the ribs down, catching the crest of the ilia, with tapes over the shoulders and around under the buttocks. After the ends were fastened, slack enough being left to permit the hand to pass under easily, the tapes were fastened so that it would stay in place, whereupon the child could be turned loose and could whoop without suffering discomfort. This contrivance can be made by any ordinary mother.

George F. Beasley, M.D., Lafayette, Ind.

"PHYSICAL EXAMINATION OF FOOD HANDLERS"

To the Editor:—I note that Dr. L. B. Gloyne, commissioner of health and sanitation, Kansas City, Kan., writes in The Journal, May 13, with apparent approval of the working of an ordinance requiring the physical examination of food handlers, but that he says: "The greatest single good that has resulted from this ordinance has been the finding of a number of food handlers, with venereal disease, who have presented cards on which examining physicians have marked 'None,' without making any examination, under all headings that refer to venereal disease."

As one who has for many years been interested in public health and who has had some experience in public health work, as one to whom the examination of food handlers, in army or civilian life, for venereal disease is no new thing, but as one who likes to know reasons, I should like to know whether or not, in view of the statement above, the ordinance is worth while; whether gonorrhea in a cook or waitress is a source of danger to persons partaking of food cooked or served by them, so long as such persons partake of no other wares; whether a soda fountain dispenser with gonorrhea or a baker with a syphilitic ulcer on his shoulder is endangering the public by his food handling. (The baker was kept from his job for seven months.)

Is it worth our while or necessary or just or economic to disturb or temporarily destroy the means of livelihood of a worker or other citizen because of disease which, however disgraceful, is not a menace to the public through the exercise of that means of livelihood? For one must live, or feels that one must, even if one have gonorrhea or syphilis.

If we exclude from food handling persons who are carriers of or sufferers from such diseases as typhoid, dysentery, cholera, diphtheria, septic sore throat and others known to be transmitted through foods, are we not doing reasonably well?

Are gonorrhea, syphilis and chancroid more dangerous in a food handler than enlarged tonsils, pyorrhea, eczema, ringworm, boils, fistulas, suppurating middle ears or bromidrosis? If not, why not exclude from food handling persons with any of these?

If we exclude from certain occupations persons with diseases which are very rarely or never transmitted through the exercise of those occupations, who or what can guarantee that a change of fashion may not soon cause us to exclude from similar occupations persons with psoriasis, acne, lupus, baldness, varicose ulcers or other diseases which may be thought to resemble or to arise from syphilis, or which cause distaste in an observer?

Are our teachings and work founded on reason or on sentimentality?

I remain, Sir, an earnest seeker of information.

P. M. Ashburn, M.D., Carlisle Barracks, Pa.
Colonel, Medical Corps, U. S. Army.

ADVANTAGE OF SENDING QUESTIONNAIRES IN DUPLICATE

To the Editor:—The executive officers and members of the teaching staffs of medical and other educational institutions are in frequent receipt of questionnaires. If these questionnaires were invariably sent in duplicate, it would obviate the necessity of the recipient having to make a copy of the questionnaire with its answers for his own files. I believe that the publication of this letter would be the most efficacious means of calling this matter to the attention of those interested in the problem of medical education, and of facilitating the collection and preservation of such records.

J. T. Halsey, M.D., New Orleans.
Secretary, Tulane University
School of Medicine.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PROPHYLAXIS AND TREATMENT OF SEASICKNESS

To the Editor:—Please inform me concerning remedies for treatment of seasickness. If you publish this, kindly omit my name.

B. L. S., Milwaukee.

Answer.—The larger the boat, and the nearer its center one stays, the less liability will there be to seasickness. One should recline, warmly covered, on deck as much as possible, and keep the eyes shut so as not to notice the bobbing up and down of the horizon. Or, if possible, the eyes and the mind should be occupied by one's reading an interesting book or playing cards, resting at intervals with eyes closed. One should avoid all suggestions of nausea, such as the aspect of seasick persons or the sickening odors of the ship's kitchen, toilet, or engine room. One should avoid sudden movements, such as bending forward or getting up rapidly, quickly ascending or descending stairs, or fast dressing or undressing. One should also avoid getting too hungry as well as overdistending the stomach with food or drink. Some fruit should be eaten on rising or immediately before, and one should go to the meal just as it is about to be served, and begin to eat immediately. After eating, one should lie down for a short time. It matters little what one eats, provided one relishes it. One should not eat more than usually, excepting of fruits and vegetables, the latter to antagonize the tendency to constipation engendered by the change in habits. An aloe pill should be taken at bedtime any day on which the bowels did not move. A tight abdominal binder does no harm, and might, by producing a feeling of security, be at least of psychic value. Atropin sulphate, 0.5 mg. hypodermically, may be tried with or without strychnin sulphate, 1 mg., and the dose repeated once or twice hourly until relief or until incipient dryness of the throat or disturbance of vision gives warning that atropinism has been reached. Occasional repetition of the dose may be required to keep up the effect.

Complete rest with the body and the head horizontal is the safest and surest remedy. The cabin should be as well ventilated as possible. Sick persons should eat, no matter if they lose one meal after another. Vomiting something is easier than the endless retching of an empty stomach. Light, easily digested, small and frequent meals are indicated. They should be brought to the patient's berth. Swallowing small chunks of ice, and sips of lemon juice or of ginger ale are often grateful aids in dispelling nausea. The headache of seasickness may be relieved by eating, by coffee, or by coal tar analgesics, such as acetphenetidin. In obstinate cases, sedatives may have to be resorted to. Of these, barbital sodium, 0.5 gm., in suppositories is probably as good as any. In extreme cases, morphin sulphate, 0.01 gm., hypodermically, may have to be given, advantageously perhaps combined with scopolamin hydrobromid, 0.5 mg., repeated as often as necessary.

SALICYLATES — "NATURAL" AND "SYNTHETIC"

To the Editor:—It is my understanding that the theory that "natural" salicylic acid is superior to "synthetic salicylates" was exploded some ten years ago, and yet most physicians are still getting such letters as the above. Lest this should influence the thoughtless, it might be well to again publish a reminder.

E. F. Hoover, M.D., Enterprise, Kan.

Answer.—Dr. Hoover writes on a letter sent him by the Wm. S. Merrell Company in which is rehashed the definitely refuted claim that "synthetic" salicylic acid is inferior to the "natural" kind. The Merrell letter suggests that to avoid the defects of synthetic salicylic acid, the physician should specify "natural" and "Merrell" in writing prescriptions for sodium salicylate or any of the other salicylates. About ten years ago, the Council on Pharmacy and Chemistry instituted a thorough investigation of the asserted superiority of natural salicylic acid and salicylates over the ordinary or synthetic kind. This investigation included a chemical examination of the market supply, made by W. S. Hilpert in the A. M. A. Chemical Laboratory, a pharmacologic study by J. A. Waddell, then at the Western Reserve University Medical School, and a clinical trial. The chemical work consisted of an examination of eleven specimens ranging from the cheapest commercial bulk sodium salicylate to the high-priced "sodium salicylate from True Natural Oil of Wintergreen." The investigation showed that all the brands were essentially alike in properties and composition.

The study carried out by Waddell showed that, so far as toxicity is concerned, there is no essential difference between natural and synthetic sodium salicylate. In the clinical investigation, physicians with hospital facilities were supplied with "natural" sodium salicylate and "synthetic" sodium salicylate in such a way that they did not know which of their samples were "natural" and which were "synthetic." This clinical investigation was decisive. It showed that "natural" and "synthetic" sodium salicylate are indistinguishable so far as their therapeutic and toxic effects on patients are concerned.

In spite of the conclusive proof that the claimed superiority of natural salicylic acid over the ordinary kind—a claim based on a mixture of mysticism, commercial exploitation, misinterpretation and tradition—is without foundation, the Merrell Co. attempts to induce the medical profession to perpetuate this exploded fallacy. The firm suggests that "the slight increase in cost" of the "natural" product is justified by the asserted "comfort to the patient." This "slight increase in cost" is a matter of 2,400 per cent.; that is, whereas sodium salicylate of U. S. P. quality is offered at 85 cents a pound, the Merrell Company demands $22 a pound for its "natural" variety.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 11. Sec., Eclec. Bd., Dr. James Edwin Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Georgia: Atlanta, June 7-9. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Illinois: Chicago, June 26. Supt. of Registration, Mr. V. C. Michels.

Indiana: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

Louisiana: New Orleans, June 8-10. Sec., Dr. Roy B. Harrison, Hibernia Bank Bldg., New Orleans.

Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 6-8. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

Missouri: St. Louis, June 12-15. Sec., Dr. Cortez F. Enloe, State House, Jefferson City.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, espectively, by May 15 and June 1.

Nebraska: Lincoln, June 6-8. Sec., Mr. H. H. Antles, Lincoln.

New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

New Mexico: Santa Fe, July 10-11. Sec., Dr. R. E. McBride, as Cruces.

North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 60 Belmont Ave., Grand Forks.

Ohio: Columbus, June 6-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

Oklahoma: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 11. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

Vermont: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underll.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Washington: Olympia, July 11. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 11. State Health Commissioner, r. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 Second St., Ashland.

Wyoming: Cheyenne, June 5-7. Sec., Dr. J. D. Shingle, Cheyenne.

MEDICAL EDUCATION

A Student's Point of View *

ROBERT C. WALKER, M.A.
Undergraduate Student, University of Cincinnati College of Medicine
Cincinnati

Student opinions in regard to teaching methods rarely find xpression outside the confines of a limited circle. This ct is to be deplored. Although a student's point of view bound to be in certain respects immature, it is on the velopment, during student years, of an individual way of looking at such methods that the direction of continued effort on the part of the student, and therefore the hope of the profession for future progress, depends. That there is a sad lack of development of any sort of a point of view among the vast majority of students may be in part due to the fact that student opinions seldom find expression. It is therefore with no apology that the following opinions and criticisms, which to me as a student are matters of vital interest, are offered. And though the opinions may seem a bit harsh in character, and the criticisms may appear unjustly destructive, it is only with the purpose of contributing a constructive note that this paper was written.

DOGMA

My theme is not palliative, nor is it directed only at symptoms. It points downward to the very basis and root causes of a condition which exists in our medical colleges which threatens a scientific profession. The causative agent of this condition is dogma, and its symptoms are manifested in the present-day professional teaching methods, which embrace with no apology unadulterated empiricism, the very antonym of scientific effort. In simple terms, it means that modern medical instruction demands of the student that he accept fixed theories as explanations in themselves, that he make of his mind a mere storehouse of unrelated and oftentimes unimportant observations, with little or no attempt at logical explanations which see farther than such fixed theories, and offers no incentive and little time for freedom of scientific thought.

Where, might we ask, does such dogma begin? It is safe to say it is encountered the very minute the student emerges from the classroom of the fundamental sciences. From an atmosphere of true scientific procedure where logic acts as guide, where every statement and experiment is subject to rigorous questioning, he passes into the influence of a system in which, in spite of the efforts of an enlightened few, empiricism dominates, in which the learning of masses of uncontrolled data becomes an end in itself; an atmosphere in which fixed theories are unquestioningly adopted and logical reasoning based on a knowledge of fundamentals is a matter of little concern. Hour upon hour, with notepad in hand, he is forced to sit in a lecture room and hear repeated, oftentimes word for word from a textbook, these masses of data which, grouped and classified, form the various clinical entities to which the name of some disease is given: a worthy procedure, indeed, if considered as a means and not as an end. But herein lies the fault: To the average medical professor, particularly to those of the younger generation, the mere carrying of such a mass of detail as data is a mark of self-sufficiency, and of his students he fails to demand or even to encourage a mastery of the fundamentals on which such detail depends.

THE DEMAND FOR DATA, NOT PRINCIPLES

Concrete examples are manifold. The entire field of clinical laboratory findings as taught throughout our years of clinical instruction is a perfect example of the method. Not only are a number of hours allotted to this important branch as a subject in itself, but practically every lecture on any phase of disease whatsoever is punctuated throughout with the laboratory findings to be expected. This is all very well, but let us inquire into the real value to the student of such data as given. The mere routine examination of the urine is a good illustration. For every disease we are required to memorize these findings, with virtually no consideration for the various simple and yet fundamental influencing factors. To be sure, some of these factors remain vague; but the many that are no longer obscure are passed almost unnoticed both in text and in lecture, and the paramount demand made on the student is not for principles, but for data—

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* Read before the twenty-first annual convention of the Alpha Kappa ppa Fraternity, Dec. 31, 1921, Cincinnati.

merely the empiric grouping of findings to form a clinical entity called by some name, and treated more often according to tradition than to logical procedure based on at least an attempted understanding.

Or, to take a more difficult procedure, and one the free discussion of which reflects a bit more credit on the scientific ability of the clinician, let us consider blood chemistry. We are required to learn, for instance, that the normal p_H value of the blood is 7.3, that the alkali reserve is 53, and so on through the category of blood findings for the normal person and for the disease in question. To a limited amount of this there is no objection; but what might be the meaning of the figures cited? What is meant by p_H value, and how is it arrived at? What do we mean by the figures expressing alkali reserve, and how is the reserve maintained? What are the most logical explanations of such findings, and what are the weaknesses of such explanations?

These questions pertain to the very fundamentals of metabolism, and yet during the later years of our medical course, when we are brought under the influence of average clinicians, all attempts toward any real understanding of such figures are cast to the wind, and we are required to tax our memory with the figures as empiric observations. We are influenced by example if not by actual advice to look at such basic principles as belonging only to the chemist, and to be satisfied with figures and words alone. Such examples could be extended to almost every phase of clinical instruction, not only as evidenced by the demand for empiric figures, but in many instances by the demand, or rather encouragement, of the acceptance of fixed theories as complete explanations. The entire field of the so-called metabolic diseases, from which even during the last few years we have seen whole chapters erased by a few men who refused to look at them as such, are typical examples, and still we are required to learn them as were our forefathers, the term "metabolic" being used as a satisfactory explanation.

What more glaring example can be found of such dogma than the demand made on the student to memorize in detail the orthodox classification of the various nephritides? How often he meets this question on hospital and state board examinations. And yet of what real value is such a minute study of these elaborate morphologic descriptions? Are there not certain principles which go far toward rendering the basic phenomena less obscure, and are not many of the accompanying symptoms which are taught even in our textbooks as merely accompaniments, made far more logical if studied from the standpoint of certain definitely established conceptions? And yet throughout colleges in general, during clinical years, the mastering of this overused classification is considered, in the eyes of the majority of professors, a satisfactory study of the field.

The subject of blood pressure which, as regards observation, is rapidly becoming a subject in itself, is a further example. The student on examination is made responsible for figures and symptoms galore, and yet rarely or not at all during clinical years do the various simple physical factors on which blood pressure depends receive emphasis.

The whole subject of therapy, which, after all, represents the goal of applied medicine, is taught almost entirely empirically. To be sure, much of it must remain so until new facts are brought to light, but why should a student be required to learn thousands of unimportant observations, when the small amount of, yet relatively far more important, information that may be had as to the why of the physiologic action of a few drugs is placed entirely secondary?

THEORIES AS EXPLANATIONS

As regards the demand for the acceptance of fixed theories as end explanations, numerous examples could be offered. The "toxin" theory of disease offered as a final explanation to so many abnormal conditions, the ready acceptance of syphilis as explaining in full myriads of disease processes, and the whole matter of the so-called "resistance" theory offered as the final explanation of disease are among the more familiar illustrations. How many times are we as students forced to listen to this oft-repeated phrase: "The occurrence of this condition is explained by one of two factors, increased virulence on the part of the organism, or decreased resistance on the part of the individual." That phrase, used as an explanation in itself, is an insult to a student's intelligence. Never was it intended by its originators to serve as more than a path for investigation, and yet in every college we have parrot-like professors who are thoroughly content at being able to explain disease so simply.

It is not merely such instances and many similar ones that I decry, nor is it the fact that the student must tax his memory with observations. It is the adoption and rigid following of a system that advocates such methods that demands our attention as students. And why should we be so concerned? Because the later part of our student work is largely under the influence of men who are, with few exceptions, the victims of this system, which demands the acceptance of such methods as the price of material success. "Accept and be popular, question and be damned" has ever been the materialistic attitude. A show of knowledge rather than knowledge itself is the keynote for touching the minds of the unthinking majority, and in medicine as in all professions it is such an element that dominates.

DETAILS AT THE EXPENSE OF FUNDAMENTALS

This situation in medical training is rapidly becoming more perilous. Investigation is constantly unearthing new observations, and such a show of knowledge as that to which I have referred demands that we be familiar with this maze of minutiae. The engrossing of the student's mind in detail at the expense of fundamentals is therefore becoming almost a necessity. Such detailed knowledge is indeed to be desired, but the price that the majority of students pay for it is too great. The task of committing to memory such a myriad of facts looms so large that soon any incentive the student may have had for questioning and for logical reasoning is lost, not because of any actual inability to master such detail, but because of a complete lack of encouragement, either by precept or by example, to delve deeper. He therefore becomes content to "get by," and falls for the popular criterion of "making grades." His assent is his redemption in the eyes of his successful superiors, and soon he works himself into a similar position. Thus the vicious circle is complete.

RESPONSIBILITY OF THE STUDENT

The question therefore arises as to how and by whom such a system is to be discouraged. Surely not by the majority of professors themselves, for, though a few among them in every institution actively fight it, these are in such minority and are the subject of such jealous criticism on the part of the majority that during their own day their influence cannot dominate. I insist that our hope for a better system lies with the students themselves. It consists, not of a policy of mere criticism, nor does it involve a passive attitude. It demands, first of all, the putting forth of increased effort, hard, uncompromising work; the mastery of detail where detail is essential, and the early development of a point of view that sees farther than the mere blind acceptance of "authority." Reading, study, thought, these are the essentials, and criticism caustic and unyielding whenever dogma is encountered, a criticism backed by effort well directed, and based on fundamentals learned in spite of the system under which we find ourselves placed. That is our hope for the future, and we as students must accept the responsibility.

Social and Industrial Medicine

A METHOD TO DETERMINE AMOUNT OF CARBON MONOXID IN THE BLOOD

The Department of the Interior has published the description of a method, devised by Sayers and Yant of the Bureau of Mines, for the quantitative determination of carbon monoxid in the blood. The method, it is claimed, is dependable and simple, involving the comparison of a small amount of blood similarly prepared with a set of color standards.

PROCEDURE FOR MAKING STANDARDS

To 5 c.c. or more of human blood is added 0.05 gm. of potassium citrate, or 0.02 gram of sodium fluorid for each 10 c.c. of whole blood. The blood thus obtained is divided into approximately equal parts, one of which is immediately diluted 1: 10 with distilled water; the other is first saturated with from 3 to 5 per cent. of carbon monoxid, and then diluted 1: 10 with distilled water. From these two solutions, one approximately all oxyhemoglobin, and the other approximately all carbon monoxid-hemoglobin, mixtures are made which total 1 c.c., but vary in carbon monoxid hemoglobin from none to 100 per cent. in steps of 10. To each standard thus prepared is added 1 c.c. of a mixture consisting of equal parts of a 2 per cent. strictly fresh pyrogallic acid solution, and a solution of 2 per cent. tannic acid. The standards are best kept in a test tube of clear, thin glass, about five-sixteenths inch in diameter. Immediately after the addition of the acid mixture, the tube should be sealed by melted paraffin poured over the contents. This temporary seal is sufficient until the walls of the tube become dry, when a cardboard disk is placed on top of the paraffin, and a permanent seal made by filling the remainder of the tube with ordinary sealing wax. These standards develop their full color within fifteen minutes, and, if properly sealed, remain permanent for several weeks.

TECHNIC OF THE DETERMINATION

In making an estimation of the carbon monoxid in the blood of a supposed victim of poisoning, there is measured into a test tube, of the same size and kind of glass used for the standards, 1 c.c. of a 0.05 per cent. solution of potassium citrate, or 0.03 per cent. sodium fluorid, depending on which anticoagulant was used in making the standards. The victim's finger tip is punctured, and with a capillary pipet 0.1 c.c. of blood is drawn up. The blood is discharged quickly into the solution in the test-tube, and 1 c.c. of the pyrogallic-tannic acid mixture, previously described, is added. The contents are thoroughly mixed and allowed to stand about ten minutes, and a color comparison is made with the standards, on each tube of which the percentage of carbon monoxid hemoglobin is noted.

The color gradation is so marked that an untrained observer can obtain sufficiently dependable results. The accuracy of the method has been checked by numerous determinations, and found well within the required limits.

A DEMONSTRATION IN PUBLIC HEALTH EDUCATION

The appearance, in 1916, of a number of cases of poliomyelitis in Ulster and Sullivan counties, caused the New York State Department of Health, as reported in its *Monthly Bulletin*, March, 1922, to make an investigation of health conditions in the district. Aside from the existing epidemic, insanitary conditions were found that involved the health of a quarter of a million summer vacationists. These conditions were due primarily to the rapid conversion of a mountainous farming district into a vast summer playground for families from the east side of New York City. Farm houses originally intended for five or six persons had been transformed into tenement houses accommodating from twenty-five to more than 100 without any additional water supply or facilities for the safe disposal of human waste. About 3,000 boarding and rooming houses are already in operation in the district, and more were being opened each season. Families began to arrive in May, usually rented one room for sleeping purposes, brought their own bedding and kitchen utensils, did their own cooking at the common household kitchen, and lived outdoors. The father and older children came up from the city for week ends. The houses filled an important place in the lives of their patrons, mostly immigrant Jews, who had saved and planned through the winter that the mother and children might have a vacation in the mountain district.

It was difficult to get the landlords to see the point of view of the health authorities in sanitation. No health regulations existed to meet the situation, and no one in the health department could talk to these people in their own tongue. This condition was brought to the attention of the directors of the Jewish Agricultural and Industrial Aid Society, who took it up with the state health department. The society decided to place an agent in this district tentatively with instructions to cooperate closely with the sanitary supervisor, and created an advisory committee of three physicians to advise them as to the best methods for starting the work. The state health department emphasized three factors in the program for improvement: the sanitary disposal of human waste, a safe water supply, and the protection of food from fly infection by screening kitchens and dining rooms, covering food, and the proper disposal of garbage. It was agreed that the Jewish Agricultural Society should carry on educational work with the landlords and the vacationists, and try to get their acceptance of local health regulations and their aid in enforcing them. The society established a bureau of sanitation at Ellenville, and was fortunate in securing a director who was deeply interested in the welfare of these people.

During the summer of 1919, representatives of the Jewish society, often accompanied by the state sanitary inspector, visited 370 Jewish farms, boarding houses and rooming houses. They showed the landlords how to manage the necessary sanitary installations, how to abate the fly menace, and gave informal talks to the vacationists. In this way, 10,000 persons received instruction in sanitation. Group farmers' meetings and public mass meetings were held three times weekly on the boarding house lawns, when lantern slides lent by the state health department were displayed. Thousands of pamphlets were provided by the U. S. Public Health Service and the state department of health, and the Jewish society distributed 10,000 circulars printed in Yiddish. The Jewish society's representative obtained permission to use auditoriums in some of New York City's public schools for instruction during the winter, since many of these people go year after year to this mountainous district. These public health lectures were attended during February and March, 1921, by audiences averaging 1,000 adults. Regular inspections were made of the farms and rooming houses, and reports sent to the Jewish society. A farmers' sanitary league was formed which gave a "diploma" each year to farmers whose premises passed the inspections. The "diplomas," which may be withdrawn for failure to maintain the standard, are much coveted and have created a pride generally in cleanliness.

The campaign of education in 1919 was so fruitful that in the following year a set of sanitary regulations were drawn up by the health authorities, and adopted by the town and township boards of health with but slight variations. It has taken four years of intensive work by the health departments, assisted by the Jewish Agricultural Society, to overcome the major difficulties, but a foundation in uniform sanitary principles has been made. Popular sentiment is now in favor of standing by the sanitary code, and in penalizing those who can in no other way be made to comply with the regulations. The demonstration is still going on, and thousands of children who annually visit the Sullivan-Ulster district are growing up with instruction in sanitation.

DISPENSARY ON THE APPOINTMENT BASIS

The clinic for children at Yale University Medical School now operates on an appointment system, such as was first worked out by Dr. Park under the American Red Cross in France. Dr. E. C. Dunham, chief of the clinic, said in *Mother and Child*, May, 1922, as far as he knows there is no other dispensary in the United States operating on a similar plan. The appointment system, as its name implies, is one in which patients are seen at appointed, prearranged hours, just as in the office of a private physician, the purpose being to give the patient the most efficient service in a manner which admits no delay, carelessness, or indifference. The benefits of an appointment system are obvious. The success of the plan depends on cooperation of the patients and those conducting the clinic. Since its adoption at Yale, the advantages and possibilities have become more and more apparent.

Book Notices

Der Verband. Lehrbuch der chirurgischen und orthopädischen Verbandehandlung. Von Fr. Härtel, Professor Dr. med. Oberarzt, der Chirurgischen Universitätsklinik zu Halle A.S., und Fr. Loeffler, Privatdozen Dr. med. Leit. Arzt der Orthopäd. Abteilung der Chirurgischen Universitätsklinik zu Halle A.S. Paper. Price, 456 marks. Pp. 282, with 300 illustrations. Berlin: Julius Springer, 1922.

This is an extensive treatise on surgical and orthopedic bandages, dressings and splints. The first part deals largely with standard roller bandages and with their application to different regions of the body. Under the second part, immobilization bandages, plaster of Paris and splints of all sorts are considered. Extension by tongs or nail extension to the skeleton are fully described. The third part contains a description of types of dressings and bandages and the therapeutic application to wounds. There is a brief historical sketch and an extensive consideration of solutions used for wet dressings and the treatment of infected and gunshot wounds. There is a consideration of the active and passive hyperemia treatment as advocated by Bier. There is a limited bibliography. It is a creditable work, and one of use to the general practitioner and surgeon. Some of the methods in popular use in this country are barely mentioned, and detailed mention would easily improve the work. It is valuable because of the completeness of the descriptions and the good illustrations of methods in vogue at a well known clinic in Germany.

The Heart Rhythms. By Paul Dudley Lamson, M.D., Associate Professor of Pharmacology, Johns Hopkins University. Cloth. Price, $2.50. Pp. 100, with 52 illustrations. Baltimore: Williams and Wilkins Co., 1921.

This book is apparently an elaboration of the class-room notes of a teacher who aims to make his subject so plain that even the dullest student may understand. By diagrams, by offering a scheme of heart rhythms based on the point of origin of impulses, and by omitting consideration of confusing features he succeeds in his endeavor. The exposition is concise, orderly and clear. A very brief discussion of the electrocardiograph is given. The polygraph is more fully treated. This is because the author, rightly as we think, regards the electrocardiograph as too expensive, cumbersome and complicated for the ordinary practitioner, but feels that the polygraph, if carefully used by one who understands beforehand the nature of cardiac rhythms, is the more practical instrument. He considers the electrocardiograph, because it is more accurate and because of its greater scope, an important instrument for hospital work. Altogether, the book is to be warmly commended to the practitioner who desires a brief but reliable work which will help him to understand the irregularities of the heart and which will tell him how to use the polygraph.

The Treatment of Common Female Ailments. By Frederick John McCann, M.D., M.R.C.P., F.R.C.S., Surgeon to In-Patients, Samaritan Free Hospital for Women, London. Cloth. Price, $3. Pp. 152 New York: Longmans, Green & Co., 1922.

There is a real need for a small book of this nature, but, unfortunately, the want has not been supplied by this literary endeavor. In all writings a general scheme should be planned and followed, and, in preparing a book there should be a correlation and sequence in the facts presented: the most glaringly evident feature of this volume is the absence of this planning on the part of the author or the publisher. The arrangement of the text throughout is painfully faulty. Repeatedly captions are given to paragraphs which bear little or no relationship to the substance presented. Nowhere is this utter lack of correlation more evident than in the chapters on abortion and puerperal infection. Chapter XI, on abortion, is a jumbled presentation of inadequate facts concerning the diagnosis of pregnancy, the diagnosis of various types of abortion, and the treatment of pregnancy and of abortion—a combination of presentation which is impossible. If Chapter XIV, on how to diagnose pregnancy, had preceded the chapter on abortion, there would have been small need of the repetition. Withal, the chapter on the diagnosis of pregnancy treats of the diagnostic features so faultily that it should be rewritten. Is it advisable to divide pregnancy into two halves for this purpose? Is it not infinitely more rational to use the time-honored classification of the three trimesters? Almost always, the fact of pregnancy is most difficult of recognition within the first three months. The diagnostic features in early pregnancy are inadequately stated. Under puerperal infection, page 111, there appear, in italics, the words *by disinfecting the genital tract from the vulva to the fundus of the uterus.* As far as our knowledge goes, this procedure is impossible and never has been done. Certainly, such a startling reference should be amplified so that one might know how to do the impossible. An epitome must have a clarity and terseness of phraseology so that facts given are self-evident—otherwise, words are meaningless: the confines of a small volume do not permit the elucidation by amplification and explanation found in a pretentious volume. This has not been kept adequately in mind by the author, as a result of which the book is of small value as a ready reference work. The book is replete with inexactness, crude diction and lack of thought in its preparation, and is certainly not worthy of recommendation.

Agricultural and Industrial Bacteriology. By R. E. Buchanan, Professor of Bacteriology in the Iowa State College of Agriculture and the Mechanical Arts. Cloth. Price, $3. Pp. 468, with 67 illustrations. New York: D. Appleton & Co., 1921.

The title of this book is a misnomer. According to the statement in the preface, it is intended to "lay a satisfactory and practical foundation" for more advanced and specialized work in the applications of bacteriology to agriculture and to industry. It therefore should present material for a course in general bacteriology, and this is exactly what has been done. The book parallels closely the author's "Bacteriology" (published in 1921) both in method of presentation and in content, with divergences which give more comprehensive discussions of certain subjects of particular interest to prospective agricultural students. As examples of this are the chapter on soil bacteriology and the sections describing animal diseases not commonly found in man. As a whole, however, it is difficult to see any great advantage which this book possesses over other textbooks designed to teach general bacteriology, even to students primarily interested in the agricultural and technical applications of the subject.

Das Handskelett im Lichte der Röntgenstrahlen. Von Dr. Arthur Grumbach. Paper. Pp. 155, with 26 illustrations. Leipzig: Wilhelm Braümuller, 1921.

This work, which covers an interesting phase of bone anatomy of the wrist and hand, is a thorough exposition of the variations found in the carpal bones, and is replete with references to related works of observers of all countries. It is a work of prime interest to the anatomist, to the surgeon dealing with injuries of the hand, and to the roentgenologist, who so often is puzzled by unusual and odd arrangements of the carpal bones. A careful study of the variations will prevent many an erroneous diagnosis in injury, a not unusual occurrence in these days of extensive use of the roentgen ray. The accessory carpal bones are described at great length, and to the casual student many strange terms appear, such as epilunatum, epipyramis, triquetrum bipartitum, paratrapezium and os vesalianum. The question of extra sesamoid bones is also studied with considerable thoroughness. The book is to be commended for its thoroughness.

L'Encéphalite Léthargique. Par le Pr. Achard, Professeur de Clinique Médicale a la Faculté de Médecine de Paris. Paper. Price, 16 francs. Pp. 324, with 15 illustrations. Paris: Librarie J.-B. Baillière et Fils, 1921.

This is a systematic treatise, covering the entire subject from history to treatment. That the disease is highly polymorphous in manifestation, the diagnosis frequently difficult, the prognosis most uncertain, the nature of the virus obscure and that no effective treatment has been discovered are clearly brought out. The discussion of mooted points is judicial; clinical pictures are clearly drawn, and the pathology is adequately presented. The extensive bibliography of nearly a thousand references will aid any one wishing to consult the literature.

Medicolegal

Liability of Hospital for Negligence of Nurse in Administering a Hypodermic

(Malcolm v. Evangelical Lutheran Hospital Association (Neb.), 185 N. W. R. 330)

The Supreme Court of Nebraska affirms a judgment, for an amount not stated, in favor of the plaintiff for damages for injuries suffered from the alleged negligent manner in which a nurse administered a hypodermic injection. The court holds that a hospital incorporated and conducted for private gain is liable to patients for the negligence of nurses and other employees, and that a hospital built and maintained by a private subscription and the subscription of stockholders, which declares dividends to its stockholders, and usually charges reasonable fees for services rendered, is not an eleemosynary institution, but one for private gain, responsible for the negligence of a nurse acting within the scope of her duties.

The plaintiff in this case, the court says, was a young man in robust health, who sustained a hernia. He contracted with the defendant for an operation at its hospital. About an hour before the operation, one of the hospital nurses went to his room and inserted a hypodermic needle into his right arm at an improper place and in a careless manner, at a point near the elbow, and then administered supposedly a preparation for the anesthetic to follow. The plaintiff complained then of a severe pain that extended down into his hand and fingers, saying that the nurse must have struck his "crazy bone," as his hand hurt as if that had been bumped. He again complained of the pain in his hand and elbow, immediately on his regaining consciousness after the operation, and from that time his hand was never entirely free from pain and discomfort. His right hand and arm became impaired and deficient in strength. A physician who made an examination of the injured member and inquired thoroughly into the history of the case traced the injury back to the hypodermic given at the hospital.

Did this hypodermic cause the injury and pain which immediately followed? Was the injury complained of the natural and proximate result of the hypodermic injection? Taking into consideration the health and strength of the plaintiff, and that his deficiency or weakness dated solely from the injection of the hypodermic, and from all the evidence in the record on this subject, it is plainly apparent, the court thinks, that the administering of the hypodermic injection by the nurse caused the injury complained of. The testimony of the plaintiff and the attending physicians clearly proved the situation. It was patent on the face of all the facts that the atrophy and the apparent diseased condition of the arm dated from the injection of the hypodermic needle by the nurse and that this was responsible for the situation and condition of the plaintiff. Whether or not the plaintiff's doing work delayed his getting well or caused an additional injury to his hand was purely a question for the jury, who evidently found no bad effects from his activity.

Power of State Board of Health Over Water Supply

(Purnell et al. v. Maysville Water Co. (Ky.), 234 S. W. R. 967)

The Court of Appeals of Kentucky affirms a judgment enjoining County Judge Purnell and the state board of health from trying the water company on a number of existing warrants and from issuing new warrants or instituting new criminal proceedings against the company for its failure to obey an order of the board of health to install a filtration plant. The court says that the one controlling question in the case was, What power has the board of health of the state of Kentucky, under Section 2057 of the Kentucky Statutes, to order and direct a water company furnishing an impure and objectionable supply of water to employ or adopt any one method, however well proved, to the exclusion of others, to improve its water supply and thereby abate the nuisance? The court has no doubt that the state board of health may, under this section, abate any nuisance in the state caused by filth which induces sickness. In this respect, the powers of the board are broad, but not unlimited, and must be exercised within a sound discretion, not whimsically or capriciously, nor arbitrarily. If the board of health in dealing with such matters does not exceed its powers nor abuse its discretion, its orders will be upheld by courts as final and conclusive. Here the water supply was improved so that it was said to be clear, soft, and suitable for all domestic purposes. While this was not brought about by the installation of a filtration plant by the water company, it had been accomplished by the provisions of sedimentation basins and chlorination of the water so that the same was not only clear but pure, wholesome, and free from *B. coli* and other dangerous bacteria which formerly infested and contaminated the water furnished the city.

Although, as stated, the board of health has the power to abate a nuisance, source of filth or cause of sickness, it has no mandatory power enabling it to direct the method by which the result shall be accomplished. It can only cause the abatement of the nuisance, and is not concerned with the method by which it is done. In other words, it may stop the furnishing of impure and dangerous water to a community; but it has no power to direct a water company to install any particular character of plant for sedimentation, filtration or chlorination of the water; and the water company may adopt any system that may seem best or expedient to it, if the system adopted produces the results desired. It, therefore, appears that the board of health, in directing the installation of a filtration plant by the Maysville Water Company, exceeded its authority under the statutes, and when it caused warrants to be issued against the water company, charging it with the offense of failing to obey the order of the board to the extent of installing a filtration plant, it acted without and in excess of its authority. It is the province of courts of equity to enjoin such acts or conduct of public officials when they lead to oppression and irreparable injury. As the judgment of the lower court granted this relief and no more, the judgment is affirmed.

Useless Treatment Not Required—"Visible Mark"

(Hunter v. Federal Casualty Co. (N. Y.), 191 N. Y. Supp. 474)

The Supreme Court of New York, Appellate Division, Fourth Department, in affirming a judgment in favor of the plaintiff under a policy of insurance against injury from accident, says that while he was lifting with all his strength to start a clogged grain elevator, it started suddenly, and he was thrown backward. He claimed that the sudden wrench that he got injured his back. He worked until night, but did not feel well. In two or three days, he called a physician, who ordered him to bed. Ten days after the accident he was taken to a hospital, but before he entered the hospital paralysis of the lower limbs had developed. The medical experts whom he called testified that the particular trouble from which he was suffering was caused by an injury. An expert who was called by the defendant testified that the plaintiff was suffering from an ordinary case of infantile paralysis. Under the evidence, it was a question of fact, and the finding of the jury in favor of the plaintiff was not against the weight of evidence.

As the policy contained a provision that indemnity should not be paid in excess of the time that the insured was under the regular treatment of a legally qualified physician or surgeon, and as the plaintiff was not under the regular treatment of a physician after thirteen weeks from the date of his injury, it was urged that, in any event, the recovery should be limited to that length of time. The physicians called as witnesses all agreed that there was absolutely no treatment that could have been given to the plaintiff that would have been of the slightest assistance. The provision of the policy was designed as a guard against fraudulent claims, and should be construed in view of the purpose which it was intended to serve. The construction to be given should be liberal, to carry out the spirit and purpose of the contract. The object of the clause being to guard against fraud, when it was manifest that there had been no fraud, it would violate the purpose of the contract to give the clause a literal, narrow construction. It seems to the court that the clause should be read under the supposition that the use of the words "regular treatment" presupposed that some treatment would be possible, and when it appeared from the undisputed testimony of the physicians called by both the plaintiff and the defendant that no treatment was possible, then the words "regular treatment" were suspended, because the law will not enforce an idle or impossible formality. To illustrate: if the plaintiff, having in mind such condition of the policy, had instructed his physician to call on him regularly once a week and give him sugar and water, that would have been a literal compliance with the terms of the contract, if the physician said that such was the treatment which he gave him regularly once a week. Therefore, when it appears that it would have been nothing but a sham and an idle ceremony to have had a physician give "regular treatment" once a week, and that there was no treatment that could have been given that would have been of any value, the court should enforce the contract, on the theory that the clause in question assumed that some treatment of value could be given to improve the condition of the injured person.

There being a provision in the policy that, in the event of injury of which there was no visible mark on the body, the company's liability should be 20 per cent. of the amount otherwise payable, the court holds that the jury were correctly instructed that, by the term "visible mark," it need not necessarily be a scar or abrasion on the surface of the body, provided it be some manifestation or indication of injury, even though that injury might be internal. The plaintiff's physicians testified that he could not move his legs, and that the paralysis resulted from the injury. They also testified that on examining the roentgenograms they were able to discern that the vertebrae were slightly out of line, and that there was injury to the lateral processes of the vertebrae. This clause of the policy, like the other one referred to, was inserted for the purpose of preventing fraud, and should be given a construction which would carry out the purpose of the contract. It was conceded that the plaintiff was totally disabled. The jury, to whom the court left it to say whether or not, within the meaning of the policy, there was any visible mark on the plaintiff's body, considered that there was, and found for him the total amount claimed.

Custom of Nurses to Count Sponges Must Be Pleaded

(Tate et al. v. Tyzzer (Mo.), 234 S. W. R. 1038)

The St. Louis (Mo.) Court of Appeals affirms a judgment for $5,000 damages for the death of a woman from peritonitis, alleged to have been caused by the negligent leaving of a strip of surgical gauze or sponge in her abdominal cavity when an operation was performed for the removal of a diseased ovary. The court says that the evidence disclosed that peritonitis might be caused by things or causes other than leaving a sponge in the abdomen; but no such conditions were shown to exist in this particular case. Then, the defendant requested that the jury be instructed to the effect that, if they found from the evidence in this case that, in the performance of surgical operations in the city of St. Louis, at the time this operation was performed, it was the custom among ordinarily careful, skilful, and prudent surgeons, while performing abdominal operations, to leave to the nurses assisting in the operations the duty of counting the sponges used; that the defendant left the duty to two experienced nurses who were assisting in the operation; and that before closing up the wound he inquired of them as to whether all of the sponges were accounted for, and was informed that they were; then he was not negligent in failing to count the sponges himself, and had a right to rely on the count as correct; and, if he himself looked into the abdomen and could not, by exercising ordinary care, discover that any sponge was then in the abdomen, he could not be held for damages, even if a sponge was left concealed in the plaintiff's abdomen. Without passing on the question as to whether or not this instruction correctly declared the law under certain conditions, the court holds that there was no error in refusing to give it in this case, as it would have permitted the defendant to rely on a special and local custom to take his case out of the general rules of law when no such custom was pleaded by the defendant; nor was it shown that the patient had any knowledge of its existence. If a custom is relied on, it must be pleaded. And this is true even though the custom is relied on by the defendant, and the answer is a general denial. The instruction tendered in this case by the defendant, and refused, proceeded on the hypothesis of a custom existing among physicians and surgeons in the city of St. Louis. Such a custom was not pleaded, and therefore was not an issue in the case.

Damages Allowed for the Loss of Both Arms

(Carlson v. Payne, Agent (Minn.), 186 N. W. R. 291)

The Supreme Court of Minnesota says that the plantiff, who was 20 years old, was so injured while he was a member of a crew making up a train that he lost both arms, the portion of his right arm remaining being about 6 inches (15 cm.) in length, and that of his left arm about 4 inches (10 cm.) in length. The jury returned a verdict in his favor for $57,500 damages, with an additional allowance of $289.77 for fees of physician, hospital and nurse, or $57,789.77 altogether. The court, however, holds that this amount is excessive, and makes its affirmance of an order denying a new trial conditional on the plaintiff's consenting to reduce the award to $45,000, which the court declares is a larger sum than has ever before been sustained by this court.

Overlapping of Bones Indicative of Negligence

(Pelky v. Kivlin (N. Y.), 191 N. Y. Supp. 428)

The Supreme Court of New York, Appellate Division, Third Department, in affirming a judgment for $1,000 damages in favor of the plaintiff, says that he was in a hospital seven weeks under the defendant's care, for a broken leg. The defendant contended that at the expiration of that time there was no union of the bones. There was evidence that it was "an exception to have a case go seven weeks without knitting." The defendant offered no explanation of this unusual result. On the other hand, the plaintiff testified that the defendant told him from time to time that the bones were knitting and that the leg was progressing satisfactorily. From the evidence of the plaintiff and his wife and one of the hospital nurses, it appeared that there was an unusual protuberance on the leg when the plaintiff left the hospital. When he returned about a month thereafter, it was admitted that there was an overlapping of the bones, and this condition continued until the second operation, which gave a satisfactory result. There was no evidence of contributory negligence, except that the defendant testified that the plaintiff left the hospital prematurely and contrary to his orders; but this was denied by the plaintiff, who said that the defendant told him he might go home and return in about a month, which the plaintiff did. The evidence was such as to present a question for the jury; and their verdict was not against the weight of evidence. They found on sufficient evidence that when the plaintiff left the hospital there was a union of the bones, but that they overlapped. This was so unusual and contrary to human experience that it was within the province of the jury to say that the result was due to the negligence of the defendant, especially as the second operation removed the difficulty and left the plaintiff in a normal condition.

Liability for Treatment to Prevent Hydrophobia

(Austin v. American Railway Express Co. (Kan.), 200 Pac. R. 293)

The Supreme Court of Kansas says that the plaintiff was bitten by a dog suspected of having hydrophobia. The plaintiff's physician shipped the dog's head to Manhattan for the purpose of ascertaining whether or not the dog had hydrophobia. The box containing the shipment was marked, "Dog's Head, Rush." The defendant was informed of the accident to the plaintiff and the purpose for which the head was being shipped to Manhattan. The head was not delivered. The court holds that the defendant was liable for the expense of the shipment, the mental pain caused the plaintiff, the expense incurred for medical treatment to prevent hydrophobia, the pain caused by that treatment, and the damage sustained by loss of time while taking it, although the treatment proved to be unnecessary.

Society Proceedings

COMING MEETINGS

American Psychiatric Association, Quebec, Canada, June 6-9. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y.

Colorado Congress of Ophthalmology and Oto-Laryngology, Denver, July 28-29. Drs. M. D. Brown and J. M. Shields, Metropolitan Bldg., Denver, Secretary.

Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.

Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.

Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.

Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.

Michigan State Medical Society, Flint, June 7-9. Dr. F. C. Warnshuis, 410 Powers Bldg., Grand Rapids, Secretary.

Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.

Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.

Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

AMERICAN PEDIATRIC SOCIETY

Thirty-Fourth Annual Meeting, held in Washington, D. C., May 1-3, 1922

The President, Dr. Maynard Ladd, Boston, in the Chair

Applied Dietetics in Outpatient Departments

Dr. Maynard Ladd, Boston: The Boston Dispensary Food Clinic might be called a demonstration of applied dietetics. A clinic organized along the lines of this one offers a training to students in medicine, public health, child welfare, nursing, dietetics and social service. A food clinic should become an established department of every well organized clinic for the treatment of ambulatory patients. Its development will depend on the extent to which public opinion supports the idea.

The "Splenopneumococcic" Reactions in Pulmonary Tuberculosis of Children

Dr. P. F. Armand-Delille, Paris: A congestive reaction of the whole lung, giving the clinical type of the so-called "Grancher's splenopneumonia," seems to be peculiar to pulmonary tuberculosis in young persons. Often after a continued fever, called in France "Landouzy's typhobacillosis," the signs of consolidation of one of the lungs appear by degrees, sometimes first at the apex, sometimes first at the base. The diaphragm is not immobilized; the shadow is thicker in the median part of the lung than at the base. Often in the apex there is a clearer zone of disintegration, which gives the aspect of a cavity, corresponding to the cases in which auscultation gives râles, and corresponding to the focus of tuberculosis. In some cases the resorption is brought about by general physiotherapeutic treatment, especially with very well regulated heliotherapy, but it is always very slow. In other cases at a certain time it becomes a real caseous pneumonia with terminal large cavities. In a third group, a sclerosis appears with pleural adhesions. The occurrence of these special forms of splenopneumonic reactions is not rare. Out of 120 children, this condition has been observed in more than ten cases.

D'Espine's and Allied Signs in Childhood

Dr. John Lovett Morse, Boston: D'Espine believed that the bronchial character of the spoken voice did not normally extend below the seventh cervical spine, and that extension below this point was evidence of an enlargement of the tracheobronchial lymph nodes. He considered it always a later sign than the addition of the whispering sound to the spoken voice, and that it meant a more advanced process. He believed that extension of the bronchial respiratory sound and dulness on percussion below the seventh cervical spine were still later manifestations, and that they signified much more marked changes. A detailed analysis of 118 patients between the ages of 2 and 14 years made it fair to conclude that when there was no whispering voice sound after the spoken voice, the bronchial voice, whisper and respiration, and the spinal dulness did not extend below the seventh cervical spine and there was no intrascapular dulness, conditions were normal; but not when the extension was below the seventh cervical spine. The whispering sound after the spoken voice, D'Espine's sign, is often the earliest and only abnormality. It may, however, be absent when one or more of the other signs are present. The whispered voice is a somewhat more delicate test of pathologic changes in the tracheobronchial region than is the spoken voice. The respiratory sound has an intermediate value. The value of percussion over the spinous processes is about the same as that of the respiratory sound. Intrascapular dulness is a late sign, and is found only when the pathologic changes are considerable.

DISCUSSION

Dr. Walter R. Ramsey, St. Paul: Dr. Morse has interpreted D'Espine's signs correctly, so far as I can determine. D'Espine uses a hard American stethoscope with a small bell.

Dr. Charles Hendee Smith, New York: The whispered sound is more accurate than the speaking voice. The word bronchial is a very poor description. It is a tracheal or tubular sound. We should abandon the expressions positive and negative D'Espine's sign and say that the whispered voice extends to the first cervical or to the first, second or third dorsal vertebra.

Dr. J. Claxton Gittings, Philadelphia: We have studied the cavities of spinal columns removed from frozen bodies after the muscles and connective tissue have been removed, and the conformation of the cavity is such that sounds over the spine have to be interpreted with a great deal of caution. There may be a dull sound below the first dorsal without apparently any sign of mediastinal disease.

Follow-Up Records of a Series of Patients with Bronchopneumonia

Dr. Walter Lester Carr, New York: During a mild epidemic of influenza, the mortality was 8.5 per cent. for children under 2 years of age. The complete figures of a follow-up series from the City Hospital show the advantage of checking up patients after they have left the hospital, for hospital patients convalescent from an acute attack may have an extensive pneumonia within a few days. The mortality in such a series is difficult to give, and advantage should be taken of follow-up methods by social service workers.

DISCUSSION

Dr. J. P. Crozer Griffith, Philadelphia: There are three elements that affect the prognosis in bronchopneumonia in children: (1) the age; (2) the fact that epidemics vary from year to year, and (3) other diseases which prevail at the time. Another factor which makes the estimation of mortality rates very difficult is the diagnosis. I have given up trying to find anything that can be stated to be average figures.

Dr. Charles Herrman, New York: The great advantage of home as against hospital care is shown in the primary disease to which the bronchopneumonia is secondary. After the bronchopneumonia as a complication is present, the difference between home and hospital treatment is nil.

Dr. Charles Hendee Smith: There is one method that will differentiate between lobar and bronchopneumonia, and that is the roentgen ray.

Hydrogen Ion Concentration of the Gastric Contents

Drs. W. McKim Marriott, L. T. Davidson and L. P. Harshman, St. Louis: Hydrochloric acid, in common with other acids, exerts a marked bactericidal effect when present in sufficient concentration. It has some action in regulating the opening and closing of the pylorus. The effective acidity or hydrogen ion concentration is to a large extent dependent on the character of the diet. It has been shown that peptic digestion is slight at a degree of acidity less than p_H 4.0, but that from this point on considerable digestion occurs. In two thirds of the infants examined the acidity was quite sufficient to allow for considerable digestion of protein.

Bacteria, particularly those of the colon-typhoid group, are inhibited markedly by an acidity corresponding to p_H 5.0; at a p_H as acid as 4.0 practically complete inhibition and death of these organisms occurs. In a consideration of the acidity of the gastric contents of infants who were not normal, but were fed exclusively on breast milk, there was a marked variation from normal figures. In every instance the acidity was less than that corresponding to a p_H of 4.0. The acidity in the stomachs of the latter group averaged one-twentieth that of normal infants. The degree of acidity was insufficient for peptic digestion and not great enough for complete bacterial inhibition, and presumably below the optimum for effect on the pyloric sphincter and on the duodenal secretions. A study of the behavior of cow's milk in the stomach of the normal infant shows that the excess of buffer substance binds the hydrogen ions, and it appears that the infant's stomach does not respond by producing a sufficient amount of acid to overcome the excess of buffer substance. The removal or neutralization of the buffer substance may be accomplished to a certain extent, depending on the degree of souring attained. Such milk may be given to even young babies without the appearance of symptoms which result when cow's milk with unchanged buffer substance is administered. Metabolic experiments in infants have shown better absorption and retention of both organic and inorganic constituents during lactic acid milk feeding. The feeding of lactic acid in the presence of an excess of gastric acid actually results in a less degree of acidity than if the same infant was fed on breast milk. In the case of infants with lowered gastric acidity, for example atreptic infants, a more nearly normal hydrogen ion concentration of the gastric contents was obtained when lactic acid milk was fed than when breast milk was fed.

ACID MILK IN INFANT FEEDING

Dr. Henry L. K. Shaw, Albany, N. Y.: Acid milk is obtained from fresh, sweet, whole milk, which is covered with cheesecloth and allowed to sour for two days in a warm room until thick like junket. It is then churned in a small glass butter churn for several minutes until it resembles fluid milk. A heaping tablespoonful of sugar and one of flour for each quart are mixed into a paste with a little of the milk, and this is added to the churned milk and then boiled from three to five minutes while stirring. The addition of a little soured milk to fresh milk as a "starter" will cause sufficient souring in twenty-four hours. This can be fed without dilution to very small infants, although it is best to add from one-half to one ounce of water in each feeding for the first few days. In order to preserve the antiscorbutic value, one half of the formula is boiled, and the other half is added uncooked. The albumin in acid milk is more digestible and can be given to young infants in larger proportions than in sweet cow's milk. A bacteriologic study of these foods showed no growth of lactic acid organisms in the boiled foods, so that the favorable results must be due to the high acid content and not to the action of living lactic acid bacilli. Acidity determinations showed that the average acidity before boiling was 100, and after boiling 80. The high acidity exerts a germicidal effect. Malt soup mixtures made with acid milk have an average acidity of about 48. Made with plain malt extract, the acidity averages about 65. Babies fed on acid milk mixtures for a long period of time look healthier, and thrive better on the average than those fed on the regulation sweet milk formulas.

DISCUSSION

Dr. H. J. Gerstenberger, Cleveland: Was there any special technic used in making the sour Keller's malt soup? Did you boil the mixture for three minutes or for a shorter time?

Dr. Thomas S. Southworth, New York: Dr. Shaw spoke of the malt soup prepared in the usual way producing irritation of the buttocks and loose stools. When he speaks of preparing malt soup in the orthodox way, does he mean according to the directions on the package of Keller's malt soup? We have not always followed those directions, but have adapted them to the needs of the individual infant and in that way have not had the difficulties Dr. Shaw mentioned.

Dr. De Witt H. Sherman, Buffalo: A few years ago I described a method of using Bulgarian bacilli to produce lactic acid milk. We cultured boiled sterile milk and allowed it to stand at a temperature of 85 F. over night. In the morning it was found to be of approximately the correct acidity. It was then boiled again and put on ice. An even simpler method is to culture the boiled milk and allow it to stand in a warm place for twenty-four hours, when the acidity will reach 180 or 190, an acid reaction of sufficient degree to destroy the Bulgarian bacillus. This is an easy way to obtain lactic acid milk that is fairly satisfactory. Lactic acid milk, acting as a stomachic, increases the relaxation and contraction of the gastro-intestinal musculature and thus increases the peristaltic wave, and this results in an increase of the other three functions. Lactic acid milk is a safe food for infants, and may be fed for a long time.

Dr. Henry Koplik, New York: I agree with Dr. Sherman. Finkelstein laid stress on the method of preparation, and his success in feeding protein milk was due to the fact that he obtained a definite uniform preparation every day. It is dangerous to give acid milk prepared by allowing the milk to sour. There is danger that such a milk will cause diarrhea. If fed on acid milk too long, certain children get a form of edema, and older infants will not take it. There is no panacea in acid milk or in protein milk.

Dr. Henry L. K. Shaw, Albany: The way in which we prepared the malt soup mixtures with acid milk was to boil the milk and add the malt flour and sugar.

Three Cases of Acute Encephalitis Treated with Specific Serum

Drs. Henry F. Helmholz and Edward C. Rosenow, Rochester, Minn.: In three cases of undoubted encephalitis, the effect of the injection of Rosenow's antiencephalitic serum was striking. We do not claim that the specific serum was the curative factor in these cases; all we can say is that after the injection of the serum there was a decided improvement in the general condition of the patient and a complete clearing up of the nervous symptoms. Furthermore, it has been shown by animal experiments that the serum can protect animals from intracerebral injections of the streptococcus, which is not the case with normal horse serum.

Blood in Breast Milk

Dr. Isaac A. Abt, Chicago: I noted the occurrence of a chocolate colored milk in a primiparous woman very shortly after the birth of the baby. The mother and baby were apparently normal in every other respect. This condition may occur as a result of a variety of conditions.

The Rate of Secretion of Breast Milk

Dr. Charles Hendee Smith and Katherine K. Merritt, New York: A normal baby fed on one breast need nurse, as a rule, only from eight to ten minutes. The normal baby takes from 40 to 60 per cent. in the first four minutes. After eight or ten minutes very few babies get any milk whatever. This holds true whether the supply is abundant, moderate or scanty. A few larger infants may get small amounts of milk up to sixteen minutes. The babies who need both breasts usually get less from the second than from the first, except when one breast regularly yields a better supply. The rate at which a baby gets milk from the second breast is similar to that of the first breast, though the time after which the baby gets no more milk from the second breast is usually shorter than from the first. Poor feedings are completed in a relatively shorter time than good ones. When the breast supply is evidently failing, the baby obtains all he can get in from three to five minutes, as a rule. It does no good to leave a baby a longer time at a failing breast with the hope of eking out a meager supply.

DISCUSSION

Dr. Charles Herrman, New York: Most babies nurse for too many minutes. In order to be sure that the baby is receiving a proper amount of milk, frequent weighings before and after nursing are necessary. There is no rule that is applicable at all times, even in the same baby. In hospital practice a great deal of time is consumed by nurses who are in charge of bottle fed babies, because the hole in the nipple is made of such a size that it takes the baby from fifteen to twenty minutes to get the milk. If the baby can take the milk in eight or ten minutes a great saving of time will result, and the nurses will be free to attend to other duties.

DR. ROYAL STORRS HAYNES, New York: At the Sloane Hospital we have had no breast nursed longer than eight minutes, and since we have instituted this practice we have noticed an appreciable diminution in the number of cracked nipples.

(To be continued)

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held at Washington, D. C., May 1, 1922

(Continued from page 1662)

Value of Sodium Bicarbonate in Treatment of Diabetes Mellitus

DRS. H. O. MOSENTHAL, J. A. KILLIAN and V. C. MYERS, New York: It has been known for a long time that sodium bicarbonate aids the elimination of acetone bodies in the urine in cases of diabetes mellitus. By some observers the objection has been raised that this increased acetonuria did not necessarily signify a removal of retained acid substances, but that the sodium bicarbonate was responsible for the excretion of beta-oxybutyric acid, diacetic acid and acetone, which would have been metabolized along normal channels had the alkali not been administered. This problem was investigated by giving sodium bicarbonate to diabetic patients who were on a constant diet. The acetone bodies were determined quantitatively in the blood and in the urine. It was found that the acetone and its allied substances increased in the urine and diminished in the blood when sodium bicarbonate was administered. It may therefore be concluded that sodium bicarbonate serves to aid the excretion of beta-oxybutyric acid, diacetic acid and acetone in the urine and that it diminishes them in the body, thereby lessening the dangers attendant on diabetic acidosis.

DISCUSSION

DR. E. P. JOSLIN, Boston: During the first three days after sodium bicarbonate, the acid bodies in the blood increased. This is unfortunate because the patient threatened with diabetic coma is dead in three days. Of 500-odd patients treated at the New England Deaconess and other hospitals, five, or 1 per cent., died of coma. None of these patients received alkalis.

Studies on Pneumococcus Immunity

DRS. RUSSELL L. CECIL and GUSTAV I. STEFFEN, New York: In a previous study it has been shown that monkeys can be completely immunized against pneumococcus Type I pneumonia by three subcutaneous injections of pneumococcus Type I vaccine. In the present study, similar experiments have been carried out with pneumococcus Types II, III and IV. Complete immunity was obtained in the Type II experiments, and partial immunity in the Type III experiments. Only one Type IV experiment was undertaken. In this experiment none of the vaccinated monkeys contracted pneumonia, but the infection in the control was also very slight. Complete immunity was also obtained in monkeys by three intratracheal injections of pneumococcus Type I vaccine. This immunity was adequate even when small doses of vaccine were employed. An attempt was made to immunize monkeys by spraying them with an atomizer containing pneumococcus vaccine. This experiment was unsuccessful, probably because so little of the vaccine got into the trachea.

Relation of Normal Bacterial Flora of Mouth to Mucous Membrane

DR. A. L. BLOOMFIELD, Baltimore: It was found that intensive cleansing of the tongue by various mechanical procedures led to no marked quantitative or qualitative change in the flora. Foreign bacteria placed on the tongue could on the other hand for the most part be readily removed. The conclusion is therefore drawn that the site of growth of bacteria in the mouth is in the mucous membrane, just as has been shown to be the case with staphylococcus in the normal skin.

Blood Gases in Auricular Fibrillation and After Restoration of the Normal Mechanism

DRS. HAROLD J. STEWART and EDWARD P. CARTER, Baltimore: In the series of cases studied, all patients were put to bed on admission. If there were any signs of cardiac failure, they were digitalized before the quinidin therapy was begun. Then the control arterial and venous blood was taken. After reversion to the normal mechanism under quinidin sulphate, arterial and venous samples of blood were again taken. The blood was drawn without stasis under liquid petrolatum as described by Stadie and by Lundsgaard, the arterial and venous samples being withdrawn within from three to five minutes of each other. Either the brachial or the radial artery was used. The blood was drawn at least two hours after the previous meal and after the patient had been lying down at absolute rest for at least thirty minutes. An electrocardiogram, vital capacity and blood pressure were taken either just before the rest period or after drawing the blood samples. Normal vital capacity readings were calculated from the Du Bois height-weight chart. All analyses were done in duplicate; the original method described by Van Slyke for oxygen and carbon dioxid was first used, the later analyses being done by the combined method of Stadie and Van Slyke. In all analyses the new corrections for physically dissolved oxygen and nitrogen were used.

Eleven cases of auricular fibrillation with reversion to normal mechanism are included in this report. In nine, studies were made while in fibrillation and after restoration of the normal mechanism. In two, no studies were made in the presence of fibrillation, but they showed progressive improvement with persistence of the normal mechanism.

Of the nine cases, seven showed a decided improvement in the blood gases following restoration of the normal mechanism, while two showing no improvement in the blood gases showed a striking improvement clinically.

The explanation for the consistent finding of a reduction in percentage of arterial oxygen saturation with the onset of the normal mechanism, followed later by an increase in the percentage of arterial oxygen saturation to the normal (except in two cases of emphysema) seems to be in the blood flow. During fibrillation the blood flow is probably slow and the blood in the lung capillaries has time to become fully oxygenated; with the onset of the normal mechanism and improvement in the blood flow, the blood is not in the capillaries so long and full oxygenation does not take place. Later, however, there is compensation for this, and the arterial saturation returns to normal.

In seven cases there was definite increase in venous oxygen saturation and diminution in the coefficient of utilization pointing to an improved blood flow. In two other cases there was an improvement with continuance of the normal mechanism. After the onset of the normal mechanism, there was a constant finding of increased vital capacity. In three cases with high oxygen capacity and two others with lower oxygen capacity there was a distinct fall in oxygen capacity after the normal mechanism, indicating probably that the high hemoglobin carried was a compensatory mechanism. One patient with rather severe anemia had a gradual rise in oxygen capacity under the normal mechanism, and three others with moderate anemia showed improvement of oxygen capacity after the normal mechanism.

Paroxysmal Rapid Heart Action, with Special Reference to Roentgen-Ray Measurements of the Heart in and out of Attacks

DRS. SAMUEL A. LEVINE and ROSS GOLDEN, Boston: A group of patients who had paroxysms of rapid heart action were studied, particularly because in those conditions rapid transition occurs from a normal heart rate to an extremely fast one and then back to normal. One might expect to see more striking changes in the heart's diameter under these circumstances than during gradual cardiac failure. Furthermore, these cases have been frequently referred to as instances of acute dilatation of the heart. Eleven patients were studied. Five had paroxysmal auricular tachycardia, three had paroxysmal ventricular tachycardia, one had paroxysmal auricular flutter and two had paroxysmal auricular fibrillation. Roentgen-ray measurements of the size of the heart were made during the attacks and during the normal slow heart rhythm. In four instances the roentgenograms were taken at a distance of 30 inches, and in seven at 7 feet. In all cases the customary care was taken to have the patient in about the same position for the comparable examinations. A difference of 0.5 cm. in the total transverse diameter of the heart is considered to be within the margin of error of the method. It was found that in eight patients no appreciable dilatation occurred. In two it was definite but slight, and in one it was considerable. It must be admitted that changes of 0.5 cm. at the left or right border of cardiac dulness cannot be determined by percussion and palpation with any degree of certainty. The results obtained in the roentgen-ray studies therefore indicated that in ten out of eleven cases it would have been impossible to detect any changes in the size of the heart by ordinary bedside methods, and that appreciable dilatation is an uncommon event during attacks of paroxysmal rapid heart action.

In seven of the cases, blood pressure readings were made during the attack and at varying times after the normal rhythm had been restored. The general conclusion from these observations is that the systolic blood pressure is likely to fall and the diastolic pressure to rise, resulting in a low pulse pressure. In one instance the pulse pressure was very low, i. e., 8 mm., and it readily explained certain unfortunate events that occurred in previous attacks that the patient had, such as dry gangrene of the entire left arm, right hemiplegia and aphasia. This was the only case that showed marked dilatation of the heart.

It is suggested that the amount of dilatation and the decrease in pulse pressure are dependent on three factors: the duration of the attack, the rapidity of the ventricular rate during the attack, and the general state of health of the heart before the attack occurs. The more rapid the ventricular rate during the attack, the longer the duration of the attack; and the more damaged the heart before the attack, the greater will be the change in the heart's size and in the blood pressure readings. In several instances a leukocytosis even as high as 20,000, and a temperature of 100 developed with the attack, and quickly subsided as the heart returned to normal. This did not seem to be due to an intercurrent infection but rather a specific result of the rapid rate.

Results with Quinidin in Heart Disease

Drs. B. S. Oppenheimer and Hubert Mann, New York: We have observed forty-one cases of auricular fibrillation treated with quinidin. In eighteen (44 per cent.) of these the fibrillation was arrested. In three there was a change to pure flutter. Elsewhere, fifteen patients with fibrillation received quinidin, of whom six (40 per cent.) responded by a return to sinus rhythm. These fifty-six cases, with those published by others, total 462 cases of fibrillation, of which 248 (53.7 per cent.) responded with a return to sinus rhythm. The duration of the change to sinus rhythm is usually temporary, but we have under observation cases which after a single series of quinidin are still regular after a period of eleven, ten, seven and three months, respectively. Six others have remained regular for varying periods under one month, and are being followed. Another group of six cases broke back again to fibrillation within three months. One case responded to a short series of quinidin eight times during a hospital stay of seven months. The underlying condition, such as valvular defect, cardiovascular-renal disease or thyroid condition, associated with the fibrillation, seems to bear no relation to the duration of the favorable effect, nor does the age or sex of the patient appear to be a factor. One man, aged 69, maintained a regular rhythm for six and one-half months; then fibrillation returned. The clinical improvement noted has been subsidence of palpation, dyspnea and edema. One patient was known to be suffering from fibrillation for two years, that is, from May 17, 1919, until June 24, 1921, on which date her heart became regular after a series of quinidin. She has had no return of her fibrillation since that single series of quinidin, has done all her own housework, and has survived a severe attack of influenza.

We have had no disastrous results, nor have there been any symptoms due to embolism. In fact, we think that the increased danger from embolism during the transition from fibrillation to coordinate auricular contractions has been somewhat exaggerated. During the course of auricular fibrillation, embolic phenomena, more particularly cerebral embolism, are not rare. Indeed, we have had two patients who, during the course of auricular fibrillation, had hemiplegia apparently due to emboli; but both subsequently responded to quinidin by a change to sinus rhythm without suffering from a recurrence of symptoms of embolism, either during or after the transition. One interesting case seen with Dr. Barringer responded several times to quinidin with auricular flutter and 2:1 heart block, with a regular ventricular rate of from 110 to 120 a minute; during those periods his symptoms of heart failure were greatly diminished. The combination of atropin with quinidin in such cases as failed to respond to quinidin alone gave us no better results, but did seem to reduce the disagreeable subjective symptoms of the latter drug. Clinical observation has given us the impression that digitalis tends to perpetuate auricular fibrillation not of the paroxysmal type, and to establish it more firmly. One patient twice developed tachycardia of ventricular origin during the administration of quinidin, and of course each time the drug was immediately discontinued to avoid the risk of ventricular fibrillation. In order to have a warning of this danger, we have made it an invariable rule not to treat cases of auricular fibrillation with quinidin without electrocardiographic control.

Experimental Production of Spasmodic Torticollis in Animals

Dr. Edward C. Rosenow, Rochester, Minn.: Spasmodic contractions of various muscles, especially those of the head and neck, occur frequently during attacks of encephalitis, and persist in some instances long after apparent recovery. In animals, tic-like movements of the head have been a common sequel to attacks of encephalitis induced by the intracerebral injection of a somewhat peculiar streptococcus isolated from cases of encephalitis. It was thought that in some instances spasdomic torticollis might be of infectious origin. The technic was similar to that used in experiments on encephalitis and epidemic hiccup. Four cases have been studied. The duration of the condition ranged from six weeks to four years. Of twenty-five rabbits injected directly with salt solution suspension or with primary culture, eleven (44 per cent.) developed tic-like movements of the head. Of fifty-one rabbits injected with the streptococcus isolated from these, twenty-four (47 per cent.) developed spasmodic movements of the head as a prominent symptom, while in the third animal passage only two (20 per cent.) of ten rabbits injected developed this condition. In the animals that died early from encephalitis, the movements of the head were only one of a series of findings, whereas in those that recovered from the acute symptoms these movements often were the only trace of the disease. In the animals, as in the patients, the movements of the head ceased during sleep, continued at intervals most of the time when awake, and were made worse by various forms of excitation. The type of movements in the patients often dominated the picture in the animals.

Slight or moderate turbidity of spinal fluid, due to leukocytes, a low grade leukocytic infiltration in the meninges and around blood vessels, and focal hemorrhages and necrosis in the substance of the brain were the usual microscopic findings in the animals that died in from twenty-four to forty-eight hours after injection. Perivascular and focal leukocytic and round-cell infiltration in varying proportions, depending on the duration of the experiment, was the chief finding in the animals that lived for a longer period. In the former, the demonstration of the streptococcus in the tissues was readily accomplished by cultural means and microscopically; in the latter, this was difficult, and sometimes impossible. In some of the animals the movements of the head persisted for weeks, with periods of exacerbation and remission. Positive results were obtained with some of the strains after rapid transfer through many culture generations. Filtrates gave uniformily negative results. The streptococcus was culturally and morphologically similar in each case studied. On blood-agar plates it produced small, dry, flat, sometimes umbilicated colonies surrounded by a greenish zone. In glucose-brain broth it produced a diffuse, sometimes a distinctly granular growth. Smears showed nonencapsulated gram-positive diplococci singly or in short chains, of quite uniform size and shape in young cultures, but of pleomorphic shape and size in old cultures. The different strains were all of a low grade of virulence for mice. Two of the strains were agglutinated by my monovalent antiencephalitis serum and by my antipoliomyelitis serum, but none by the type antipneumococcus serums.

Newer Conceptions of Pathogenesis of Infections of Biliary Tract, with Special Reference to Nonsurgical Drainage

Dr. Evarts A. Graham, St. Louis: Cholecystitis is usually an interstitial inflammation of the gallbladder which involves the whole wall more or less and is not at all confined to the mucosa. Just as the gallbladder is merely a part of an elaborate system of biliary ducts, so an inflammation of the gallbladder is always accompanied by inflammation of other parts of the biliary duct system. Microscopic examination of pieces of the liver removed at operation in cases of cholecystitis always reveals a coexisting hepatitis. The intimate lymphatic anastomosis between the gallbladder, the liver, the common duct and the pancreas leads to rapid extension of an inflammation to involve all of these organs. There is much evidence, both clinical and experimental, to show that cholecystitis frequently begins as a hepatitis, and that the infection spreads to the gallbladder from the liver by way of the lymphatics. The hepatitis may originate in any infection of the portal system, as, for example, in an inflamed appendix, a typhoid ulcer, a duodenal ulcer or a suppurating hemorrhoid. There is very little evidence which would indicate that an infection limited to the mucosa of the gallbladder is anything more than an exceptional occurrence. Experimentally it is almost impossible to produce a cholecystitis by direct introduction of bacteria into the lumen of the gallbladder. Drainage of any kind, to be effective, should remove the products of inflammation. On theoretical grounds it would seem doubtful whether any procedure, either surgical or nonsurgical, which would aim merely at draining the lumen of the gallbladder, would be effective in the treatment of most cases of cholecystitis, since the inflammation is not confined to the surface of the mucosa but is spread through the wall. Extirpation of the inflamed gallbladder is the quickest and surest way of breaking up a vicious circle which frequently exists between the gallbladder and the liver.

DISCUSSION

Dr. Emanuel Libman, New York: The observations reported by Dr. Graham are naturally of great interest. They may very well explain the occurrence of lesions in the pancreas that otherwise would be explained as being due to venous thrombosis. In cases of pylephlebitis there was found a small abscess in the head of the pancreas. This could not be traced at the time to a thrombosis in any vein near the abscess. Recently, I saw a case in which an abscess in the head of the pancreas developed quite a long time after the patient had been operated on for an acute attack of cholecystitis due to calculi.

Behavior of Certain Phosphorus Compounds in Normal and Diabetic Metabolism

Drs. W. S. McCann, G. Canby Robinson and R. R. Hannon, and Mr. W. A. Perlzweig, Baltimore: The literature contains many instances of the importance of phosphates in the metabolism of carbohydrates; the demonstration of the rôle of phosphates in the fermentation of sugars by yeast (Harden and Young); the demonstration in mammalian muscle of the presence of a similar hexose phosphoric ester, which is the probable precursor of the lactic acid used in muscular contraction (Embden and Laquer); the rôle of phosphorus in the in vitro oxidation of glucose (Witzemann); the knowledge of a disturbed phosphorus balance in diabetes (Mandel and Lusk); reports of clinical improvement following the administration of various phosphate compounds to diabetics (von Morazewski), and, finally, evidence suggesting the importance of phosphorus compounds in biologic oxidative processes in general (Kovaliova, Abderhalden).

Our investigations of the phosphorus metabolism in diabetes have commenced with a study of the effect on the respiratory exchange of the oral administration of a hexose phosphoric ester, and of glycerophosphates, of inorganic phosphate alone and with glucose. Graphic charts have been prepared for some of the experimental data obtained by measuring the respiratory exchange by the Tissot method, measuring the urinary nitrogen and calculating the nonprotein oxidations by the method of Zuntz and Schumberg. These experiments show that, following the oral administration of calcium hexose phosphate (from 30 to 60 gm.), the respiratory quotients and actual carbohydrate utilization are steadily increased during a two hour period. This effect is in contrast to the effect of glucose given in control experiments, which causes a diminution in the respiratory quotient for from forty minutes to one hour after ingestion, though it rises later, as a rule. This difference in behavior of the hexose phosphate is probably due to the fact that the glucose esters of phosphoric acid yield fructose on hydrolysis. Fructose is known to cause a prompt rise in respiratory quotients, even in diabetics.

Calcium glycerophosphate, when given to diabetic subjects, caused a rise in the respiratory quotient, and in carbohydrate utilization during two hour observations. Normal subjects, with one exception, were unable to retain this substance in the stomach. In the one normal subject, no effect on the respiratory exchange was observed. Inorganic phosphate ingested alone produced no change. Inorganic phosphate ingested with glucose produced a remarkable depression in the respiratory quotient, so that at the end of two hours the nonprotein respiratory quotient was 0.667, indicating that the glucose had probably been converted into ethyl alcohol and metabolized as such. In one experiment, 200 c.c. of isotonic sodium glycerophosphate 6.5 molecular at a p_H of 7.3 was injected intravenously in a diabetic subject. The nonprotein respiratory quotient was 0.721 before, after one hour 0.697, after two hours 0.737. It was hoped that the excellent buffer properties of this substance combined with the antiketogenic effect of glycerol might have been useful in acidosis. No undesirable effects were noted, yet there was no evidence of a useful antiketogenic effect.

Tricalcium phosphate, hexose phosphate and glycerophosphate were given to three young severely diabetic subjects in order to study the effects on phosphorus balance, and to see whether there was any influence on carbohydrate tolerance attributable to phosphate administration. The first two cases showed remarkable improvement in tolerance. The third did not improve. The first case was brought under control by a slight modification of Woodyatt's regimen, and it is probable that his entire improvement is attributable to the use of Woodyatt's methods. In the second case the diet was adjusted so that there was excretion of sugar in the urine throughout, and during the administration of phosphates the daily carbohydrate intake was increased steadily. A great increase in utilization of carbohydrate occurred, with normal blood sugar figures. Spontaneous improvement in tolerance under such a regimen seems unlikely, and a favorable effect may be attributable to phosphate administration. In the third case, hexose phosphates administered during the stage in which marked glycosuria and hyperglycemia were still present resulted in no improvement.

An Improved Alimentary Glucose Tolerance Test

Drs. Carol Beeler, Albert W. Bryan, Edward P. Cathcart and Reginald Fitz, Rochester, Minn.: The rate of absorption of glucose after a standard glucose meal varies in each individual within wide limits. Since the rate of entry of glucose to the blood as a result of absorption is an important factor in determining the type of resultant blood sugar curve, as it is variable and cannot be controlled, all results from the present alimentary glucose tolerance test are open to criticism. The rate at which sugar leaves the blood after a known amount of glucose has been absorbed is a second important factor in developing the resultant blood sugar curve. It can be estimated with a fair degree of accuracy. Normally, the disappearance time of hyperglycemia after absorption has ceased is very rapid. In conditions of diminished glucose tolerance the hyperglycemia persists for varying lengths of time, the duration of hyperglycemia and the degree of intolerance being fairly parallel. A simple modification for the present ailmentary glucose tolerance test is suggested which takes these fact into consideration, avoids as far as possible the variable factor of absorption, emphasizes the duration of hyperglycemia after absorption is checked, and makes results from one case directly comparable with those obtained in other cases.

Acid-Base Equilibrium of the Blood Following Muscular Exercise

Dr. David P. Barr, New York: Following short periods of vigorous muscular exercise, remarkable changes occurred in the acid base equilibrium of the blood. The carbon dioxid combining capacity was greatly diminished. The reaction of the arterial and venous blood became less alkaline. The respiration was stimulated, causing a reduction in the carbon dioxid tension of the arterial blood. In different normal individuals, the changes varied considerably in extent, but were always in the same direction. A series of experiments was done on four normal men who performed 3,500 kilogrammeters of work on a Krogh bicycle ergometer. The period of exercise was three and a half minutes. Arterial blood was taken before and three minutes after the exercise had ceased. The extent and variation of changes were: carbon dioxid combining capacity at 40 mm. minimum change, 11.6 per cent. by volume, maximum, 18.8 per cent. by volume; carbon dioxid tension of arterial blood, minimum, 1.3 mm.; maximum, 11.5 mm. p_H of arterial bood: minimum, 0.13 maximum, 0.25.

The changes were greater one minute after than they were during the exercise. With large amounts of work, the greatest reductions occurred three minutes or more after the exercise had ended. The recovery process was a gradual one and was not complete at the end of fifty minutes. The reaction of the blood returned to normal before the alkali reserve or carbon dioxid tension had reached their original levels. Three minutes after exercise, the reaction of arterial and venous blood from the arm was practically identical. The carbon dioxid capacity of venous blood, however, was from 3 to 5 per cent. by volume higher than that of arterial blood. In a study of the venous blood of one individual, it was found that he might do from 1,000 to 2,000 kilogrammeters of work without significant disturbance of blood reaction. When more exercise was attempted, however, the changes in carbon dioxid capacity and in the reaction of the blood increased rapidly with each small increase in the amount of work.

DISCUSSION

Dr. E. P. Joslin, Boston: If I interpret these experiments aright, they explain why diabetic patients predisposed to acidosis may suddenly fall into coma after unusual exercise. A girl returns to Boston from her vacation, carrying her heavy dress suit case three blocks, and at once goes into coma. Persons with diabetes, unlike normal persons, have no reserve store of glycogen to enable them to recover quickly from the acidosis.

Effects of Lead on Red Blood Cells

Dr. Joseph C. Aub and Dorothea E. Smith, Boston: In studying the mechanisms involved in the production of the toxic anemias we have noted the following phenomena: It was first found that washed red blood cells, when exposed in vitro to minute quantities of lead, were markedly less fragile than normal cells. The technic consisted of repeatedly washing cells in Ringer's solution. Lead chlorid, dissolved in Ringer's solution with a concentration of from 0.01 to 0.05 mg. of lead per cubic centimeter (or from 1 to 5 parts per hundred thousand), was then put in contact with the red cells and allowed to remain for one hour. It was then replaced by normal Ringer's solution. The control cells were treated in the same way, but without the addition of lead. These cells were then put in a series of tubes containing dilutions of hypotonic salt. Leaded cells markedly resisted hypotonic salt dilutions, withstanding a 0.2 per cent. greater dilution than did the normal cells. There is good evidence, however, that, though less fragile, they break up more rapidly than do the normal cells. The decreased fragility is reproducible in experimental animals, and has been reported by others in man, but is less marked whenever blood serum is present. Partial explanation for this effect lies in the fact that after exposure to lead the red cells cannot absorb water normally. This is determined by studying the number and volume of red blood cells in Ringer's solution and then diluting with distilled water until the salt content is 0.6 per cent. This dilution causes normal red blood cells to swell, but leaded cells swell only slightly if at all. The other observation to be mentioned is the effect on agglutination. Ashby's method of determining the degree of agglutination was used. When a Group II or III blood was exposed to lead in concentrations of from 3 to 5 parts per hundred thousand, the agglutinating action of Group IV serum practically entirely disappeared. These observations suggest surface changes of the cells.

Cholesterol Esters in the Blood in Human and Experimental Syphilis

Drs. Thomas Ordway, Arthur Knudson and Hazel Ferguson, Albany, N. Y.: Chemical examination of the blood in syphilis by various workers has not revealed any significant variation from normal in the amount of cholesterol present. In this study the total cholesterol and cholesterol esters were determined on the whole blood by the method of Bloor, and Bloor and Knudson, respectively. Syphilitic cases having a strongly positive Wassermann reaction were grouped into: syphilis of the heart and blood vessels, syphilis of the central nervous system, and syphilis with skin manifestations. Several cases with positive Wassermann reaction, but showing no physical signs of syphilis and control cases with negative Wassermann reaction, were also studied. The percentage of cholesterol esters in individuals with negative Wassermann reactions average 34.8 per cent., which agrees very closely with the results reported by Bloor and Knudson. The percentage of cholesterol esters in the cases of syphilis showing positive Wassermann reaction and distinct physical signs averages 21.3 per cent. The results indicate that the total cholesterol content is not affected, but the amount of cholesterol as esters is considerably decreased in various syphilitic conditions.

The cholesterol and cholesterol esters content was also studied in a series of rabbits before and after their blood had developed a four plus positive Wassermann reaction as a result of experimental inoculation with *Spirochaeta pallida*. The average percentage of cholesterol combined as esters in the blood of rabbits before inoculation is 34.3, and after developing a positive Wassermann, it dropped to an average of 22.9 per cent. These results are in close agreement with the determination on the human cases. Analysis of the data reveals that there is a marked diminution in the cholesterol esters in both human and experimental syphilis. The balance between cholesterol and its esters is significant. In no other disease so far reported has such an altered relation between bound and free cholesterol been observed. No conclusion as to the significance of these results can as yet be drawn.

Basal Metabolic Rate in Exophthalmic Goiter and Adenomas of the Thyroid Compared with the Rate in Conditions Other Than Thyroid (7,285 Cases)

Dr. Walter M. Boothby, Rochester, Minn.: The basal metabolic rate was determined in 2,332 patients having exophthalmic goiter; of these, 94 per cent. had basal rates above + 20 per cent.; 5 per cent. were between + 20 per cent. and + 11 per cent., and in 1 per cent. the rates were normal. In adenoma with hyperthyroidism, the basal metabolic rate was above + 20 per cent. in 68 per cent. of 1,425 patients, and between + 20 per cent. and + 11 per cent. in 32 per cent. of the cases. In adenoma without hyperthyroidism, the basal metabolic rate was within normal limits in 100 per cent. of 1,111 patients. These figures are to be contrasted with those obtained in 2,417 patients who had diseases which did not involve the thyroid gland. In this group only 3 per cent. had basal metabolic rates above + 20 per cent.; 11 per cent. had rates between + 20 per cent. and + 11 per cent.; 7 per cent. had rates between — 11 and — 20 per cent.; 2 per cent. had rates below — 20 per cent.; while 77 per cent. of individuals had normal rates between + 10 and — 10 per cent. Of this entire group, 90 per cent. had basal metabolic rates within ± 15 per cent. of the Du Bois normal standards.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

April, 1922, **5**, No. 4

Transverse Gunshot Wound of Both Orbits Resulting in Proliferating Chorioretinitis in One Eye. H. D. Lamb, St. Louis.—p. 253.
Pyterygium Surgery. M. Goldenburg, Chicago.—p. 256.
Capsulomuscular Advancement Without Incision. S. L. Ziegler, Philadelphia.—p. 261.
Permanence of Results of Motais' Operation. H. D. Bruns, New Orleans.—p. 269.
Second Edition of Jennings' Self Recording Test for Color Blindness—Estimate of Value of Test. J. E. Jennings, St. Louis.—p. 270.
Status of Color Vision. B. Chance, Philadelphia.—p. 274.
Repair of Certain Cases of Symblepharon Associated with Traumatic Pyterygium. L. M. Francis, Buffalo.—p. 288.
New Knife Needle. J. E. Hileman, San Diego, Calif.—p. 292.
Primary Vaccinia of Cornea. N. Toomey, St. Louis.—p. 292.

American Review of Tuberculosis, Baltimore

April, 1922, **6**, No. 2

*Selective Collapse Under Partial Pneumothorax. N. Barlow and D. Kramer.—p. 75.
Intrathoracic Equilibrium in Pneumothorax. B. P. Stivelman, H. Hennell and H. Golembe, Bedford Hills, N. Y.—p. 95.
Apical Pleuritis. Statistical Study of Stereoscopic Roentgenograms of 267 Presumably Normal Students' Chests. J. G. Van Zwaluwenburg and A. D. Wickett, Ann Arbor, Mich.—p. 106.
*Effect of Sunlight and Oven Heat on Experimental Tuberculosis. J. B. Rogers, Cincinnati.—p. 119.
*Transmission of Complement Fixing Substances from Mother to Child. J. V. Cooke, St. Louis.—p. 127.
Importance of Study of Symptoms of Disease, Illustrated by Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 134.
Relation of Tuberculosis Movement to Other Health Activities. D. R. Lyman, Wallingford, Conn.—p. 146.
Elements of Adequate Tuberculosis Program. A. K. Krause, Baltimore.—p. 154.

Selective Collapse Under Partial Pneumothorax.—Barlow and Kramer protest very earnestly that no operator should attempt bilateral pneumothorax unless he has at his command an efficient roentgen-ray service, unless the patient is of the proper temperament to cooperate and is willing to be a complete bed patient at least three months, and unless he himself is willing to give unremitting care and close observation to maintain the proper degree of collapse on both sides. With these conditions fulfilled, bilateral pneumothorax should not be attempted until the operator has carried a case of unilateral partial collapse through at least four or five months of treatment, maintaining a uniform degree of collapse through this period. And finally, bilateral pneumothorax should not be induced unless there is sufficient healthy lung tissue in the lower lobes to maintain sufficient respiration, and unless there is reasonable prospect of attaining arrestment with the aid which the treatment can give. Overinflation must be guarded against.

Effect of Sunlight and Oven Heat on Experimental Tuberculosis.—Ninety guinea-pigs were infected with virulent human tubercle bacilli, either by inhalation or subcutaneous inoculation. Thirty-four of these animals were exposed to natural sunlight daily, beginning with a five minute exposure and gradually increasing to several hours each day during an average period of fifty-one days. Their average duration of life was forty-seven days. Twenty-seven of the guinea-pigs were exposed to dry heat at a temperature ranging from 55 to 65 C. for five minutes; twenty of them twenty-four hours after inoculation, and seven three days after inoculation. Their average duration of life was forty-eight days. Twenty-nine of the guinea-pigs were used as control animals. Their average duration of life was forty-eight and a half days. The tuberculous involvement in these three groups of guinea-pigs was approximately the same. Sixteen white mice were inoculated intraperitoneally with 2 mg. of virulent bovine tubercle bacilli; eight of them had been heated three days before inoculation at a temperature ranging from 55 to 65 C. for five minutes. The amount of tuberculous involvement was found to be approximately the same in the heated and nonheated mice.

Transmission of Complement Fixing Substance from Mother to Child.—Four hundred twenty-seven cord bloods were tested by Cooke, seventy-four gave positive complement fixations for tuberculosis. From later examination of a number of infants in the series, it is certain that no considerable proportion of them were suffering from tuberculous infection and highly probable that none of them was infected. The source of the fixing substances found in the infant's circulation at birth, therefore, must be the mother, the transfer being effected through the placenta. The mothers of the infants could not all be examined clinically, but it is certain that all those giving positive fixation reactions did not have clinically recognizable tuberculosis. A few had known clinically active lesions. Certain others were given complete physical examination, including roentgenograms of the chest, without finding any definite evidence of tuberculous disease, although occasionally a latent clinically inactive lesion was considered probable from the examinations. In sixty cases in which the fixation test on the cord blood was negative, a later test of the mother's blood showed negative reactions in all except three. Since in these cases only a few months had elapsed since the birth of the child it seems probable that fixing substances were present in the maternal circulation during parturition, but were not transfered to the infant. Sixteen mothers of infants whose cord blood gave positive fixation tests were examined from two to five months later, and of these, twelve gave positive and four negative reactions. The degree of fixation found in the maternal bloods corresponded with that of the previous tests on the cord bloods, there being ten three-plus and two one-plus reactions. The agreement of the tests made on the blood of infants at birth and those on the mothers at a later time supports the view that the fixing substances are transferred from the blood of the mother to that of the infant. A later examination was made of fifty-eight infants who had given negative fixations at birth and all gave negative reactions after the lapse of from six weeks to six months. In seventeen infants whose fixation tests were positive at birth, only two remained positive at the end of two months, and these had both changed from strongly positive to weakly positive reactions. In the remaining fifteen cases the cord blood was three plus in nine, two plus in four, and one plus in two, and on later examination of the infants all gave negative fixations. The conclusion seems obvious that the fixing substances transferred from mother to infant during pregnancy disappear fairly rapidly. There is evidence, also, that complement-fixing antibodies in young infants are not due to tuberculous infection.

Archives of Dermatology and Syphilology, Chicago

May, 1922, **5**, No. 5

Pathologic Histology of Synovial Lesions of Skin. G. M. MacKee and G. C. Andrews, New York.—p. 561.
*Wassermann Test Performed with Chancre Fluid as an Aid to Early Diagnosis of Syphilis. J. V. Klauder and J. A. Kolmer, Philadelphia.—p. 566.
*Simple Quantitative Precipitation Reaction for Syphilis. R. L. Kahn, Lansing, Mich.—p. 570.
Scleroderma Following Nerve Injury. L. B. Kingery, Ann Arbor, Mich.—p. 579.
Lichen Planus in Husband and Wife. S. Feldman, New York.—p. 584.
*Nonspecific Protein Therapy. E. Ahlswede, Hamburg, Germany.—p. 586.
Dermatitis Caused by Oil of Citronella. C. G. Lane, Boston.—p. 589.
Hyaloma (Pseudocolloid Milium or Colloidoma Ulcerosum?) Simulating Morpheiform Epithelioma. Report of Case. R. Ruedemann, Jr., Rochester, Minn.—p. 591.
Ulcerating Granuloma (Granuloma Inguinale) in Syphilitic Patient. M. B. Parounagian and H. Goodman, New York.—p. 597.
Onychauxis and Thyroid Therapy. Report of Case. H. E. Alderson, San Francisco.—p. 602.
Tinea Versicolor of Face. D. M. Sidlick and E. F. Corson, Philadelphia.—p. 604.
Diachylon Ointment. D. W. Montgomery and G. D. Culver, San Francisco.—p. 607.
Value of Tests with Commercial Luetin. H. E. Alderson, San Francisco.—p. 610.
Cases of Herpes Zoster, Including Simultaneous Unilateral Supra-Orbital and Thoracic Eruption. E. F. Corson and F. C. Knowles, Philadelphia.—p. 619.

Wassermann Test Performed with Chancre Fluid.—Klauder and Kolmer performed the Wassermann test with the surface fluid obtained from fourteen chancres. A positive reaction was obtained in the case of twelve of fourteen patients examined. Positive reactions were obtained from chancres which were treated locally as well as from those untreated. A positive Wassermann reaction with chancre fluid is obtainable before the reaction appears in the blood. This observation apparently excludes the hematogenous origin of the complement fixing antibody and points to a local formation of these substances. Hence, there is apparently no objection to the presence of blood in the chancre fluid.

Precipitation Test for Syphilis.—The precipitation method proposed by Kahn is based on the employment of syphilitic serum with alcoholic extract antigens of dried heart muscle. The test possesses the following salient features: (1) The diluted antigen possesses considerable stability. This dispenses with the necessity of diluting fresh antigen with salt solution before using it in the tests. (2) The strongly positive serums show, in most cases, spontaneous precipitation, and the test as a whole is completed after three hours' incubation in the water-bath. (3) The end results can be read with relative ease. Only in the case of a doubtful positive reaction does one need to apply oneself, so to speak, to try to recognize a precipitate. The flocculations in the positive reactions are so heavy that even one who has had no experience in observing precipitates will not have the slightest difficulty in recognizing them. And with regard to the weakly positive reactions, a little experience will enable one to see the precipitates with ease.

Nonspecific Protein Therapy; Milk Albumin.—The intramuscular injections of a germ and toxin free solution of milk albumin Ahlswede states is indicated in all local and generalized infections, in acute and chronic staphylococcic diseases of the skin (furunculosis, pyoderma, etc.) in superficial and deep trichophytia, in buboes, gonorrheic complications, carbuncles and cases of chronic suppuration. Milk albumin injections are indicated, furthermore, in cases of acute infectious diseases and anemias. The injections are best made into the buttocks (similarly to mercuric injections. Avoid the vessels). No hard and fast rules can be laid down concerning the number of the injections and the interval between injections.

Arkansas Medical Society Journal, Little Rock

May, 1922, **18**, No. 12

Difficulties Encountered in Orthopedic Surgery. F. W. Carruthers, Little Rock.—p. 231.
Bowel Obstruction—Report of Cases. G. E. Cannon, Hope.—p. 234.
Diagnosis and Surgical Treatment of Gastric and Duodenal Ulcers. L. H. Slocumb, Fort Smith.—p. 237.

Boston Medical and Surgical Journal

May 4, 1922, **186**, No. 18

Dried Milk. T. Leary, Boston.—p. 591.
Chronic Fermentative Intestinal Indigestion. I. R. Jankelson, Boston. —p. 597.
Care of Pregnancy and Labor in Patients Previously Delivered by Cesarean Section. J. T. Williams, Boston.—p. 599.
*Sarcoma of Jaw, with Case Report. H. J. Gibby, Worcester, Mass.—p. 602.
Relation of Faulty Cultures to Diphtheria Mortality. E. S. O'Keefe, Boston.—p. 603.
Autografting of Ovary. J. H. Mezer, Boston.—p. 604.

May 11, 1922, **186**, No. 19

Legal Limitations and Authority of Massachusetts Local Boards of Health. F. G. Curtis, Boston.—p. 625.
Psychoses, Psychoneuroses and Psychopathic Conditions in Children. A. M. McIntire, Boston.—p. 630.
Calculations in Basal Metabolism Determinations. J. H. Smith and M. C. Smith, Richmond, Va.—p. 641.

Sarcoma of Jaw in Child.—Gibby reports a case of a rapidly growing mixed cell sarcoma of the right upper jaw in a child of 14 years, of seven weeks' history, following the extraction of a molar. Death resulted from toxemia and hemorrhage.

Florida Medical Association Journal, St. Augustine and Jacksonville

April, 1922, **8**, No. 10

Report on Series of Fifty Operations on Thyroid Gland. J. S. Helms, Tampa.—p. 177.
Florida's Program for Eradication or Control of Venereal Diseases. G. A. Dame.—p. 178.
Blood Stream Infections. J. V. Freeman, Jacksonville.—p. 182.
Diphtheria. B. L. Arms.—p. 186.

Journal of Bone and Joint Surgery, Boston

April, 1922, **4**, No. 2

*Spontaneous Healing Inherent in Transplanted Bone. S. L. Haas, San Francisco.—p. 209.
Sacralization of Fifth Lumbar Vertebra. C. T. Holland, Liverpool, England.—p. 215.
*New Method of Operative Treatment of Foot Deformities. O. E. Schulz, Prague, Czechoslovakia.—p. 219.
*Early Weight Bearing in Treatment of Amputations of Lower Limbs. P. D. Wilson, Boston.—p. 224.
Report of Orthopedic Examination of 1393 Freshmen at Yale University. R. J. Cook, New Haven, Conn.—p. 247.
Astragalectomy and Backward Displacement of Foot. Its Practical Results. A. Whitman, New York.—p. 266.
Lengthening of Quadriceps Tendon. G. E. Bennett, Baltimore.—p. 279.
Practical Thoughts on Bone Pegs, Bone Screws, Etc. H. C. Masland, Philadelphia.—p. 317.
Standard Plaster Bandage. W. H. Robinson, Pittsburgh.—p. 321.
*Case of Spontaneous Fracture of Transverse Process of Lumbar Vertebra, Due to Tuberculosis. B. H. Moore, Chicago.—p. 322.
Subastragaloid External Dislocation. E. Jones, Los Angeles.—p. 325.
Hypertrophic Bone Changes in Tuberculous Spondylitis. R. B. Cofield, Cincinnati.—p. 332.
Early Symptoms of Spinal Cancer. E. D. Oppenheimer, New York.—p. 342.
*Study of 208 Cases of Lower Back Pain. J. R. Kuth, Duluth, Minn. —p. 357.
Simultaneous Hydrops of Knees. H. J. Fitz-Simmons, Boston.—p. 376.
*Low Back Pain: Its Cause. J. T. O'Ferrall, New Orleans.—p. 384.
*Substituting Felt for Steel Arch Supports. W. G. Elmer, Philadelphia.—p. 395.

Spontaneous Healing Inherent in Transplanted Bone.—Haas says sufficient energy is stored in the osteoblastic cells of a live bone transplant, placed in a muscle and removed from all osseous contact, to form a union between two fragments of a fracture produced in such a transplant. Because of this very active, independent, regenerative and reparative property innate in the live bone transplant it is advisable to utilize living bone, whenever possible, for any purpose where a transplant is indicated.

Operative Treatment of Foot Deformities.—Schulz aims to produce a supination of the heel by means of a strong tendon and at the same time to secure the important adduction and inward rotation of the heel. He cuts the tendon of the musculus peronaeus longus in the sole, pulls out the dissected tendon behind the malleolus externus and conducts it inside between the gastrocnemius and the flexor of toes to the hind part of malleolus internus. Then he makes a canal between the plantar side of calcaneous and ligamentum plantare longum and carries the tendon backward under the calcaneus to the outside, where it is fixed to the periosteum of the lateral side of the calcaneus. At the same time, an inward rotation, adduction, and supination of the heel is produced. The tendon of the peroneus longus has now its route from outside to inside, returning back to the outside under the calcaneus. A contraction of the transplanted tendon will produce a strong adduction, supination, and inward rotation.

Early Weight Bearing in Treatment of Amputations.—Experience gained during the war in the treatment of patients with amputations of the lower limb has shown that it is possible to get such patients out of bed without crutches and actively bearing weight in peg legs or simple forms of artificial limbs from two to three weeks after amputation. Early weight bearing is of great advantage to the patient because (*a*) it promotes healing of the wound by improving the circulation, and in cases with terminal localized osteomyelitis favors the separation and spontaneous discharge of sequestra; (*b*) it hastens stump shrinkage and prevents muscle atrophy and the development of joint contractures; (*c*) it favorably influences the patient's morale; (*d*) it greatly shortens the period until the permanent artificial limb can be fitted and reduces the need of frequent alterations in the socket, and thereby much expense to the patient.

Spontaneous Fracture of Transverse Process of Lumbar Vertebra.—Pain in the left thigh and lumbar region was the chief symptom in Moore's case. It had come on suddenly about four months previously while the patient was doing some light work at a grinding machine. There had been no unusual strain nor could he recall any trauma. The pain at the onset was so severe that he was unable to stand or walk, but this severe pain gradually left, and was replaced by a dull aching pain which persisted. A few weeks after the onset, the left thigh and leg became weaker than the right. The pain radiated down the inner side of the thigh to the knee. In the left lumbar muscles there was a swelling near the spinous processes, which gave deep fluctuation but was only slightly tender. The entire spine showed a slight list to the right. Forward, backward and lateral bending all caused severe pain which radiated down the thigh. Lateral bending to the right caused specially severe pain. Both hips and knees showed normal motion, passively. Active flexion of the left hip, especially against some resistance, caused severe pain both in the back and the thigh. The left thigh was 1 inch smaller than the right and the calf was ¾ inch smaller than the right. There was decidedly less strength in the muscles of the left thigh and leg. The roentgen ray showed the entire transverse process on the left side of the third lumbar vertebra separated from the vertebral body and lying about 1 cm. from it. The bodies of the vertebrae and the intervertebral disks appeared entirely normal. The swelling in the lumbar region was an abscess which was opened and drained. The transverse process was found lying free in the abscess cavity and was removed. The appearance of the pus in the abscess cavity was typically tuberculous. After the removal of the bone fragment and the evacuation of the abscess the leg pains ceased. A sinus opened in about three weeks which drained profusely. Later the patient began to lose weight and developed signs of a generalized miliary tuberculosis which was confirmed at the necropsy.

Lower Back Pain.—Pain in the lower half of the back was the chief complaint in all cases analyzed by Kuth. The most frequent site was the sacro-iliac area, 97 times. Next in frequency were: the lumbar area, 55 times; lumbosacral area, 31 times; gluteal area, 19 times; dorsolumbar area, 11 times; coccygeal area, 4 times; dorsal area, 2 times, and in the midsacral area, once. Aside from pain in lower back, 149 subjects complained of other pains radiating into the lower extremities; in 140, the pain followed down the posterior thigh and often into the outer aspect of leg and foot. These pains were always found on the same side as the back pain or on the side where the back pains were severest. Kuth suggests that in all cases of low back pain, the possibility of a progressive disease of the spine or of the spinal cord should be kept in mind. The best results from treatment were obtained in cases in which static abnormalities were corrected, in which lower back structures were protected or put at rest, and in which such structures, if shortened, were stretched. Graduated systematic exercises were an important adjunct in the treatment of many of these cases.

Cause of Low Back Pain.—Thirty-seven of the forty patients whose histories are reviewed by O'Ferrall designated the lumbosacral joint or the lumbosacral angles as the point of pain and in each instance tenderness existed at this point or points. Two designated the left hip and thigh and leg as the site of pain, which was probably referred pain due to pressure of the lumbosacral cord from swelling of the lumbosacral ligaments. One patient referred his pain to the sacrum. Examination revealed that spasm of the spinal muscles existed in some decided form, varying from slight restriction of the spinal motions to complete rigidity, including also so-called "sciatic scoliosis," in thirty cases. Inspection of the teeth showed that infective foci existed in the form of necrotic teeth, crowns and fillings (potential infectious foci) in eighteen cases. Five cases showed infected tonsils or nose; seventeen were negative for pathology and eighteen showed no record had been made of an examination of the nose and throat. The treatment given consisted mainly in clearing up infectious foci, administering mixed treatment for those having a positive Wassermann reaction or who were otherwise suspected of having syphilis, and in giving occasional doses of acetylsalicylic acid and cincophen. In many cases no other treatment was required than fixation of the spine. O'Ferrall believes that too much dependence is put on the roentgen ray as an aid to diagnosis.

Felt Arch Supports.—Elmer insists on proper shoeing and the use of felt instead of steel arch supports.

Journal of Cancer Research, Baltimore

July, 1921, **6**, No. 3

Origin of Tumors in Mice. VII. Tumor Age and Tumor Incidence. L. Loeb, St. Louis.—p. 197.

Disturbances of Blood Sugar Equilibrium in Their Relation to Neoplasia. G. L. Rohdenburg, O. F. Krehbiel and A. Bernhard, New York.—p. 223.

Pregnancy and Tumor Growth. I. Kross, New York.—p. 245.

Is Cancer Mortality Increasing? W. M. Strong.—p. 251.

Journal of Experimental Medicine, Baltimore

April, 1922, **35**, No. 4

*Hemolytic Action of a Staphylococcus Due to Fat Splitting Enzyme. M. L. Orcutt and P. E. Howe, Princeton, N. J.—p. 409.

*Experimental Rickets in Rats. IV. Effect of Varying Inorganic Constituents of Rickets Producing Diet. A. M. Pappenheimer, G. F. McCann and T. F. Zucker, New York.—p. 421.

*Id. V. Effect of Varying Organic Constituents of Rickets Producing Diet. A. M. Pappenheimer, G. F. McCann and T. F. Zucker, New York.—p. 447.

Modification of Improved Anaerobe Jar. J. H. Brown, Princeton, N. J. —p. 467.

*Experimental Studies on Etiology of Typhus Fever. IV. Immunizing and Toxic Agents Found Occasionally in Filtrates of Typhus Infected Tissues. P. K. Olitsky, New York.—p. 469.

Studies on Roentgen Ray Effects. X. Biologic Action of Small Doses of Low Frequency Roentgen Rays. W. Nakahara and J. B. Murphy, New York.—p. 475.

*Id. XI. Fate of Cancer Grafts Implanted in Subcutaneous Tissue Previously Exposed to Roentgen Rays. J. Heng Liu, E. Sturm and J. B. Murphy, New York.—p. 487.

*Studies on Lymphoid Activity. VI. Immunity to Transplanted Cancer Induced by Injection of Olive Oil. W. Nakahara, New York.—p. 493.

*Erythropoietic Action of Germanium Dioxoid. II. Source of Erythrocythemia Produced by Germanium Dioxid in Albino Rat. F. S. Hammett and J. E. Nowrey, Jr., Philadelphia.—p. 507.

Effect of Flood Diuresis on Hemoglobinuria. H. Haessler, New York. —p. 515.

*Significance of Hemosiderosis of Pernicious Anemia. P. D. McMaster, P. Rous and L. C. Larimore, New York.—p. 521.

Renal Elimination of Bilirubin. H. Haessler, P. Rous and G. O. Broun, New York.—p. 533.

*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. VII. Serologic Reactions. P. K. Olitsky and F. L. Gates, New York.—p. 553.

Mutation of Bacillus of Rabbit Septicemia. P. H. De Kruif, New York.—p. 561.

Spontaneous Decrease of Surface Tension of Serum I. P. Lecomte de Nouy, New York.—p. 575.

Staphylococcus Hemolyticus in Presence of Fat.—A staphylococcus was isolated from milk by Orcutt and Howe which is hemolytic with horse blood only in the presence of fat. Similar results were obtained with two other strains of staphylococci. The hemolysis is the result of the action of a fatty acid (or soap) on the red blood cells. The fatty acid is formed by the action of a lipase elaborated by the staphylococcus. The corpuscles of different animals show slight variations in the ease with which they are hemolyzed by the staphylococcus. Attention is called to the desirability of testing for lipases in the study of staphylococci or of hemolysis.

Deficiency in Phosphates or Calcium Causes Rickets.—The basic observation has been amply confirmed by Pappenheimer et al., that lesions of the bones identical with those previously described in rats as spontaneous rickets, may be unfailingly produced by subjecting the animals to a diet containing an adequate amount of calcium, but deficient in phosphates. Similar lesions follow a diet deficient in calcium, but containing an excess of phosphates. The endochondral lesions, however, are less pronounced. A diet deficient in both calcium and phosphate induces atypical rickets. Inorganic salts other than calcium or phosphate seem to be without influence upon the development or prevention of rachitic lesions. The minimal amount of phosphate (calculated as phosphorus) required for normal calcification in young growing rats (from 30 to 50 gm.) on the diets used in these experiments is approximately 160 mg. per hundred gm. of diet. At 135 mg. individual variations come into play; at 110 mg., or less, rickets invariably follows. An excess of calcium is not necessary to the production of the rachitic lesions. A reduction of the calcium lactate to 0.6 per cent. (111 mg. calcium per hundred gm. of diet) still results in the development of typical rickets. Adult rats react to a deficiency of phosphate in the diet by the production of calcium free osteoid in abnormal amount about the spongiosa and cortex. There is not produced any alteration of the epiphyseal cartilage, as in growing animals.

Adequate Phosphorus in Diet Essential for Prevention of Rickets.—Pappenheimer et al. state that casein phosphorus does not completely prevent the development of rickets when substituted in amount equivalent to a protective dose of basic potassium phosphate. The protection given by lecithin is equivalent to its phosphorus content. The protection given by yeast is at least proportional to its phosphorus content. An amount carrying sufficient vitamin B to promote growth, but insufficient to provide adequate phosphorus, does not prevent rickets. Vitamin A, in the form of butter or butter fat to the amount of 10 per cent. of the diet, neither prevents nor cures rickets. The substitution of 10 per cent. of egg albumin improves the nutrition, but does not prevent rickets. The addition of meat, thereby supplying an abundance of phosphorus, promotes normal growth and normal bone formation. A diet consisting solely of meat and flour is inadequate for proper growth, and leads to changes in the bones comparable with those observed on a diet low in calcium, but rich in phosphorus. A diet has been found which contains the necessary food elements for approximately normal growth, and in which the only known deficiency is phosphorus. This leads regularly to the production of rickets.

Toxic Agent in Typhus Infected Tissues.—In the filtrates of typhus infected tissues of guinea-pigs Olitsky occasionally found a substances which produces in these animals thermic reactions, lesions characteristic of experimental typhus, and, still less frequently, immunity to later injections of active virus. The general indications are that this substance is not a living organism.

Roentgen-Ray Irradiation of Tissues Affects Cancer Grafts.—An erythema dose of roentgen rays given direct to the exposed subcutaneous tissue and muscle, Lin and others assert, greatly diminishes the susceptibility of the exposed area to transplanted cancer. The same dose given over the intact skin does not affect the resisting power of the underlying subcutaneous tissue. Histologic examination showed that a few days after the exposure of the subcutaneous tissue there was a lymphoid infiltration of this tissue, which infiltration sometimes included the muscle layers as well.

Olive Oil Produces Immunity to Transplanted Cancer.—Observations were made by Nakahara to determine whether the local reaction to oil is accompanied by a general lymphoid stimulation and, if so, the effect on the resistance to cancer inoculation in mice. Commercial olive oil was injected intraperitoneally. A histologic study was then made of the general condition of the lymphoid organs, with special attention to the number of mitotic figures present as this had been shown to be a fair index of the degree of stimulation. The experiments show that it is possible to render mice resistant to transplanted cancer by this means. In the course of the development of the resistance a definite period of latency is detectable following the oil injection, and the maximum degree of resistance appears at about the tenth day. This state of resistance is preceded by a proliferation of the cells of the lymphoid germ centers and, after the cancer inoculation, is associated with a lymphoid infiltration about the grafts, as well as by a second stimulation of the lymphoid germ centers and an increase in the number of the circulating lymphocytes.

Erythropoietic Action of Germanium Dioxid.—Using as an acceptable criterion of erythropoiesis an increase in the number of erythrocytes in the circulation which is accompanied by an increase in the number of young red cells, and an increased number of nucleated erythrocytes in the bone marrow, Hammett and Nowrey consider themselves justified in concluding that germanium dioxid is a potent erythropoietic agent and the source of the erythrocythemia produced by this compound is the increased production of red cell precursors by the bone marrow stimulated to increased activity by the compound used.

Significance of Hemosiderosis of Pernicious Anemia.—The selective deposition of hemosiderin in the liver parenchyma during pernicious anemia does not constitute evidence that there is a hemolytic cause for the disease located in the portal region. The repeated introduction of small amounts of free hemoglobin into the general circulation, by the subcutaneous route, leads, as McMaster and his associates have shown, to an identical siderosis. Larger amounts of hemoglobin cause a renal pigmentation equaling or exceeding the hepatic, a fact that is in keeping with what is known of the physiology of hemoglobin excretion and of the findings in human beings after outspoken hemolysis.

Serologic Reactions of Influenzal Nasopharyngeal Secretions.—Olitsky and Gates found that cultivation of *Bacterium pneumosintes* in the collodion sac dialysate of a tissue medium produces an antigen suitable for serologic tests. Injection of dialysate cultures of *B. pneumosintes* into rabbits results in the production of antibodies demonstrable by agglutination, precipitation, complement fixation, and phagocytic reactions. Four strains of *B. pneumosintes,* three from the first epidemic infuenzal wave (1918-1919) and one from the second (1920), show identical antigenic characters. The blood serum of rabbits experimentally injected with the glycerolated active material of rabbit passages contains specific agglutinins for *B. pneumosintes,* whereas normal rabbit serum does not.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1922, **7**, No. 7

Nervous Control of Pyloric Sphincter. J. E. Thomas, St. Louis, and H. Wheelon, Seattle.—p. 375.
*Blood Pressure Studies in One Hundred and Forty Cases of Diabetes Mellitus. J. Rosenbloom, Pittsburgh.—p. 392.
*Colloidal Benzoin Reaction of Cerebrospinal Fluid. F. Warnock, Chicago.—p. 400.
Laboratory Specialist as Clinical Consultant. W. H. Bailey, Oklahoma City, Okla.—p. 410.
*Method for Producing Spinal Dog. J. E. Thomas, St. Louis.—p. 417.
Spirometer for Continuously and Automatically Measuring Expired Air and Sampling for Analysis. C. C. Guthrie, Pittsburgh.—p. 421.
*Utilization of Complement Fixation Reaction in Diagnosis of Tuberculous Meningitis. R. A. Kilduff, Pittsburgh.—p. 427.
Chair for Performing Spinal Punctures. T. B. Christian, Morris Plains, N. J.—p. 430.
Devices to Eliminate Certain Objectionable Factors in Analysis of Gastric Content. J. L. Butsch and C. M. O'Brien, Buffalo.—p. 431.

Blood Pressure in Diabetes.—The results obtained by Rosenbloom in his study show that the blood pressure in uncomplicated diabetes is normal or slightly under normal. In every case in his series in which there was a high blood pressure there could be demonstrated nephritis, arteriosclerosis or aortitis. In this series, twenty-two cases were complicated by hypertension. The presence or absence of sugar in the urine had no effect on the blood pressure. A high blood pressure in diabetes Rosenbloom thinks is due to a chronic nephritis, arteriosclerosis or a cardiac hypertrophy.

Colloidal Benzoin Reaction of Cerebrospinal Fluid.—Summing up the results of her experiments on the use of the colloidal benzoin precipitation reaction for cerebrospinal fluids Warnock found that undoubtedly syphilitic cerebrospinal fluids do not regularly precipitate in any definite zone of dilutions. The benzoin reaction adds little information in doubtful syphilitic cases. Tuberculous meningitic cerebrospinal fluids do not precipitate the colloidal benzoin in any definite range of dilutions. Many nonsyphilitic cerebrospinal fluids do precipitate the colloidal benzoin suspension, and even precipitate it in the so-called syphilitic zone. Colloidal benzoin precipitation reactions repeated on the same fluid do not give uniform results. These results are based on tests performed on eighty-seven cerebrospinal fluids, twenty-nine of which were diagnosed syphilitic, either clinically or from the laboratory standpoint. Of the twenty-nine syphilitic spinal fluids twelve precipitated in the syphilitic zone. Each of them continued beyond that range. Of the fifty-eight nonsyphilitic spinal fluids fifteen precipitated in the syphilitic zone.

Method for Producing Spinal Dog.—The method described by Thomas consists essentially of injecting a mixture of chloroform and petrolatum into a carotid artery after ligating the other carotid and both vertebrals. When properly done this produces a spinal animal without convulsions or rigidity and apparently without shock.

Value of Complement Fixation Test in Tuberculous Meningitis.—In the case reported by Kilduffe, because of the absence of any pathognomonic findings, a tuberculosis complement fixation test was made on the spinal fluid and on the blood serum and conclusions based on the following premises: If the reaction occurred in the spinal fluid, the antigen being biologically specific, the positive reaction would indicate the presence of specific antibodies without, however, indicating their possible source. If, however, the reaction was negative in the blood serum, knowing that the interchange of antibodies between the blood and spinal fluid occurred only in slight degree, then it seemed fair to conclude that the positive reaction in the spinal fluid rose from the presence of tuberculous infection in the meninges. A positive serum reaction would as greatly diminish the significance of a positive spinal fluid reaction as a negative serum reaction enhanced it. The method was, therefore, tried with successful results in the case reported and the report is made because of the absence of any note in the available literature concerning this method of laboratory diagnosis in tuberculous meningitis.

Laryngoscope, St. Louis

April, 1922, **32**, No. 4

Disturbances of Metabolism and Its Relation to Certain Disorders of Respiratory Tract. G. Selfridge, San Francisco.—p. 243.
Endocrines and Nose and Throat. H. S. Wieder, Philadelphia.—p. 259.
Lateral Sinus Thrombosis Following Mastoiditis: Report of Cases. J. McCoy, New York.—p. 267.
Drainage of Mastoids as Means of Preventing "Scarlet Fever Ears." A. M. Dunlap, Peking, China.—p. 272.
Mastoiditis with an Unusual Number of Complications: Recovery. A. J. Huey and W. H. Slaughter, New York.—p. 275.
Indications for Opening Mastoid Cortex. F. P. Emerson, Boston.—p. 278.
Additional Experimental Studies in Bronchial Function. J. G. M. Bullowa and C. Gottlieb, New York.—p. 284.
Case of Early Hodgkin's Disease in Which Endoscopy Led to Diagnosis. L. M. Hurd, New York.—p. 290.
War Injuries of Larynx: Five Case Reports. J. C. Tucker, Beatrice, Neb., and R. M. Lukens, Philadelphia.—p. 292.
Value of Direct Inspection in Diagnosis of Chronic Maxillary Sinus Disease. F. L. Dennis and W. V. Mullin, Colorado Springs, Colo.—p. 300.
Two Cases of Infection by B. Proteus. J. D. Kernan, Jr., New York.—p. 304.

Mental Hygiene, Albany, N. Y.

April, 1922, **6**, No. 2

Place of Mental Hygiene in Public Health Movement. H. Emerson, New York.—p. 225.
Patient and His Attitude Toward His Neurosis. D. A. Thom, Boston.—p. 234.
Psychiatry, Psychology, Psychologists, Psychiatrists. W. Healy, Boston.—p. 248.
Next Step in Mental Hygiene Movement. C. P. Emerson, Indianapolis.—p. 257.
Nervousness: Its Cause and Prevention. A. F. Riggs, Stockbridge, Mass.—p. 263.
Social Significance of Dementia Praecox. E. M. Furbush.—p. 288.
Mental Health and Newspaper. N. A. Crawford.—p. 300.
Social-Service Department in State Hospital. M. L. Donohoe, Boston.—p. 306.
Psychiatric Social Work in Red Cross Chapter. M. Worch.—p. 312.
One Hundred Institutionally Trained Male Defectives in Community Under Supervision. M. A. Matthews.—p. 332.
Three Hundred Psychiatric Examinations Made at Women's Day Court, New York City. A. Scott.—p. 343.
Contribution to Mental Pathology of Races in United States. P. Bailey, New York.—p. 370.

Tennessee State Medical Association Journal, Nashville

April, 1922, **14**, No. 12

Mental Disease as Related to Age: Report of 1,200 Recent Admissions to Central State Hospital. W. S. Farmer, Nashville.—p. 1.
Radiotherapy in Malignancy. C. M. Hamilton, Nashville.—p. 4.
*New Abduction Traction Shoulder and Arm Splint and Its Uses. R. W. Billington, Nashville.—p. 7.
Cancer. W. T. Black, Memphis.—p. 10.
Question of Removal of Tonsils. S. M. Herron, Jackson.—p. 12.
Clinical Types of Goiter and Their Treatment. B. I. Harrison, Knoxville.—p. 15.

New Abduction Traction Shoulder and Arm Splint.—Billngton describes a splint which is made entirely of round ron, is easily constructed and easily fitted. Beginning about he sacroiliac joint of the affected side the iron rod passes upward to the upper mesial portion of scapula, is bent at ight angle with a monkey wrench, passes laterally curving lightly to fit contour of scapular and shoulder regions, hence along back of arm at desired angle of abduction and orward flexion to point of elbow; bend at right angle and ass along ulnar border of forearm and hand, there bend again to pass across palm, thence back up the radial border of forearm to elbow; thence along front of arm to front of shoulder joint, there bending slightly to pass to upper portion of sternum; thence down front of trunk to a point about two inches mesial to anterior superior spine of ilium, thence laterally at right angle curving around the pelvis to starting point; thence upward accompanying and strengthening the rod already fitted to back of trunk and arm nearly to elbow. A triangular arrangement of the two rods at upper part of back braces the arm portion and adds stability. The overlapped rods from lower back to elbow are firmly bound together by a one-inch strip of adhesive applied spirally. The portions of the frame at back of shoulder and scapula and around the pelvis are padded with felt or several turns of flannel, and this and other portions of frame are wrapped with a roller bandage. Three-inch strips of adhesive between the rods form a sling support for arm and forearm as with a Thomas splint. Two webbing straps connect the front and back portions at the top, one passing over each shoulder, carrying the weight of the frame. Another such strap around the other side of pelvis connects the front and back rods at this level and further fixes the frame to the trunk. A fourth strap connects the front and back uprights, passing under the axilla of the affected side. This one completes the fixation of frame to trunk and takes the counter-pressure against the chest wall when traction is applied to the arm. The frame should fit the body and limb snugly everywhere but not make uncomfortable pressure. The traction attachment consists of the usual adhesive strips applied to the arm and fixed beyond the elbow to a small piece of thin board attached to the iron at this point, thus holding the olecranon down to within half an inch of this rod while the amount of traction is regulated by tightening or loosening the axillary strap.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

January-March, 1922, **19**, Nos. 217-219

Symptoms and Signs in Chronic Heart Disease. G. A. Sutherland.—p. 1.
*Cases of Incontinence of Urine. A. R. Thompson.—p. 10.
Case of Erythredema ("Pink Disease"); and Question of Acrodynia ("Epidemic Erythema"). F. P. Weber.—p. 17.
Dermatopolyneuritis (Acrodynia: Erythredema). H. Thursfield and D. H. Paterson.—p. 27.
*Acute Intestinal Obstruction Due to Inspissated Meconium. E. E. Hughes.—p. 32.

Treatment of Incontinence of Urine by Dilating Bladder.—The treatment employed successfully by Thompson in four cases consisted in passing a moderate sized catheter, with the necessary precautions, and funneling fluid in, at first under a pressure of 75 cm., and if necessary, later, under a pressure of 150 cm. The quantity injected varied with the age and size of the patient. Effort should be made to put into the bladders of children under 4 years of age 6 ounces, under 8, 8 ounces and under 16, 12 ounces, or even more. At each sitting a larger quantity is introduced. The treatment aims at dilating the bladder muscle, and training the micturition-controlling muscles to work more efficiently.

Inspissated Meconium Causes Intestinal Obstruction.—Hughes records the case of an apparently healthy male child, 3 days old, who since birth had passed no meconium and no feces. For twenty-four hours the child had vomited several times, the vomit consisting of milk and bile. The abdomen was obviously distended, presented no rigidity, and was tympanitic on percussion. The anal orifice was normal, and the rectum was of normal caliber and quite devoid of even a trace of meconium. A diagnosis of acute intestinal obstruction, due, probably, to some congenital malformation of the large intestine, was made. Operative interference was deemed inadvisable and the child died a few hours later. The postmortem examination showed a large mass of inspissated meconium of solid consistence completely blocking the lumen of the transverse colon. Immediately proximal to the obstruction was a perforated stercoral ulcer three-fourth inch in diameter, through which a quantity of liquid meconium and feces had escaped into the peritoneal cavity, producing general peritonitis. Other masses of inspissated meconium were found in the descending and pelvic colon. There was no congenital malformation of any part of the intestinal tract.

British Journal of Surgery, Bristol

April, 1922, **9**, No. 36

Eponyms. D. Power.—p. 473.
*Pneumococcal Peritonitis. J. E. McCartney and J. Fraser.—p. 479.
Case of Epilepsy of Twenty-Two Years' Standing Due to Calcified Endothelioma or Perithelioma in Left Ventricle; Removal and Recovery. J. Lynn-Thomas.—p. 490.
*Use of Pituitrin in Inoperable Cancer. J. H. Norgate.—p. 495.
Inguinal Hernias: Their Varieties, Mode of Origin and Classification. R. H. Russell.—p. 502.
Hydronephrosis. C. A. Pannett.—p. 509.
*Multicentric Origin of Rodent Ulcer. G. L. Cheatle.—p. 529.
*Selenium in Treatment of Malignant Disease. A. S. Gillett and C. P. G. Wakeley.—p. 532.
*Bone Grafting: Bridge Grafts. C. M. Page and G. Perkins.—p. 540.
Excision of Os Calcis for Tuberculous Osteitis: Late End Results. C. P. G. Wakeley.—p. 553.
Recurrent Anterior Dislocation of Lower End of Ulna Complicated by Ununited Fracture of Styloid Process of Ulna. A. P. Mitchell.—p. 555.
Multiple Papilloma of Small Intestine Causing Recurrent Intussusception in an Adult. Z. Cope.—p. 558.
Inversion of Vermiform Appendix. A. Evans.—p. 565.
Duplication of Ureter. G. Keynes.—p. 566.
Exophthalmic Goiter: Death from Bilateral Femoral Thrombosis and Gangrene. W. G. Spencer.—p. 568.
Seven Large Sewing-Needles in Thigh. W. G. Spencer.—p. 569.
Traumatic Aneurysm of Splenic Artery—Rupture—Ligature. C. J. Marshall.—p. 570.
Sacculus of Urinary Bladder Which Ruptured During Micturition. L. Gordon.—p. 572.
Case of Repeated Abdominal Section for Intestinal Obstruction. A. H. Burgess.—p. 573.

Pneumococcal Peritonitis.—Fifty-six cases have been studied by McCartney and Fraser, twelve were in boys and none of these was of the primary variety. Of the forty-four cases which occurred in girls, eight were secondary to a pneumococcal chest infection. The remaining cases were primary, the result of infection of the peritoneal cavity from the genital tract. The primary type, according to the acuteness of the infection, may be subdivided into three different varieties—fulminating, acute and chronic. Primary pneumococcal peritonitis begins as a pelvic peritonitis, and in a typical case the clinical features afford strong evidence of the pelvic distribution. The course of the disease shows two distinct stages—introductory and septicemic. The mortality figures of the disease have been greatly diminished by the adoption of blood transfusion at the commencement of the septicemic stage of the disease.

Pituitary Extract in Cancer.—During a severe outbreak of enteric fever in 1919, finding that pituitary extract (posterior infundibular) controlled the hemorrhage cases without any bad symptoms, Norgate tried it in a case of sudden and severe hemorrhage from an extensive epithelioma of the tongue with enlarged cervical glands, injecting 1 c.c. into the tongue muscle. All bleeding stopped at once, and there was no repetition of it. Weekly injections into the tongue were given for three months, and the patient made rapid improvement, put on flesh, and the cachexia disappeared. He continued nine months in this state; then a hard mass formed in his liver, the growth in the tongue remaining the same, the glands slightly enlarged, and he died very emaciated. The first injection was given, May 12, 1919, and he died, April 27, 1920. His melancholy and suicidal tendencies improved up to about a month before his death. Similar results were obtained in thirty-six other cases. No claim is made by Norgate that pituitary extract is a cure for cancer, for it only delays the growth by cutting off its blood supply for a limited time; but as a general tonic to the system, as a great antagonist to cachexia and its attendant distress of mind and body, and as an agent in producing a remission for a time of the "last sentence" its value is great.

Multicentric Origin of Rodent Ulcer.—Attention is directed by Cheatle to the remarkable changes in the basal layers of the epidermis and hair follicles which occurred in the skin around a rodent ulcer. These changes indicate that their genesis is in the epithelial cells in the basal layer of epidermis and in the basal layer of hair follicles.

Selenium Worthless in Malignant Disease.—Gillett and Wakeley report the results of the use of selenium in more than 100 cases of malignant disease giving a résumé of fifty cases. Temporary improvement is the most that can be expected. Pain and insomnia are aggravated in most cases. The weight of the patient follows the same course as in every malignant lesion.

Bone Grafting.—The bridge graft described by Page and Perkins corresponds to the late J. B. Murphy's intramedullary graft and the operative technic is virtually the same in both cases.

British Journal of Tuberculosis, London

April, 1922, **16**, No. 2

Progress of Heliotherapy in Treatment of Tuberculosis. G. Hinsdale.—p. 57.
Team Work in Treatment of Surgical Tuberculosis. G. R. Girdlestone.—p. 66.
Science of Open-Air Treatment. L. E. Hill.—p. 72.
History of Horse Riding in Treatment of Pulmonary Tuberculosis. R. J. Cyriax.—p. 78.

British Medical Journal, London

April 15, 1922, **1**, No. 3198

Minor Displacements of Uterus as a Cause of Disability in Women. J. S. Fairbairn.—p. 587.
*Nature and Significance of Heart Symptoms. J. Mackenzie.—p. 590.
*Drainage in Abdominal Emergencies. A. Churchill—p. 591.
Splenomegaly with Progressive Ascites and Loud Venous Hum. A. J. Hall.—p. 592.
*Sachs-Georgi Test. P. Parthasarathy. M. M. Barratt and J. C. G. Ledingham.—p. 594.
Residual Vaccines in Acute Bacterial Diseases. C. E. Jenkins.—p. 596.
Parasitology and Clinical Aspects of Malaria in Antigua. W. M. McDonald.—p. 597.
*Application of Fascia Lata in Plastic Surgery. C. H. Cuff.—p. 599.
Case of Slipping Peroneal Tendons Treated by Kelly's Operation. D. H. Hume.—p. 600.
Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 600.
Hyperpyrexia During Influenza. W. G. McKenzie.—p. 601.
Slipping Rib. R. B. Mahon.—p. 602.
Thrombo-Phlebitis of Femoral Veins Following Lobar Pneumonia. T. S. Evans.—p. 602.

Nature of Heart Failure.—Heart failure, Mackenzie says, occurs when the heart muscle fails to supply the organs of the body with blood sufficient for the efficient performance of their functions. The symptoms of heart failure are, therefore, to be found in the symptoms produced by the impaired function of those organs that do not receive sufficient blood. In the first instance this will occur only when the heart is called on to exercise its full powers; the early symptoms of heart failure will only be produced during some physical effort. This limitation of the field of response to effort is revealed by sensations of distress. When symptoms of heart failure persist when the patient is at rest (dropsy, enlarged liver, orthopnea) the reserve force of the heart is exhausted and the rest force is being encroached on. The symptoms of heart failure are not to be found by examination of the heart.

Drainage in Abdominal Emergencies.—In the seventy-five cases which form the basis of Churchill's paper drainage was only carried out in the presence of free pus or thick purulent fluid. The fluid was not swabbed, the peritoneal cavity was not irrigated, not more than one tube was ever used, this in the great majority of cases being placed in Douglas's pouch. As soon as the patients had recovered from the effects of anesthesia they were put in the full Fowler's position, the upper end of the bed being raised on blocks three feet high. Among those treated are included cases of general peritonitis and of perforation of the stomach and duodenum. The advantages claimed for the method of limited drainage are: Shock is diminished as time is saved, and the abdominal parietes are not interfered with to the same extent. The after-treatment is less painful. Nothing is more nerve-shattering for a patient than the daily dressing with moving of three large tubes. The formation of a fecal fistula is less frequent, most fecal fistulas being due to ulceration of the bowel by tubes. Adhesions are not likely to form, and intestinal obstruction as an early or later complication is thus avoided.

Sachs-Georgi Test Not Reliable.—The routine Wassermann test and parallel flocculation tests were made by Parthasarathy et al. on 265 serums. Two antigens were employed throughout. Antigen D was that of Bordet and Ruelens with the addition of cholesterin as recommended by Dreyer and Ward. Antigen L was simply an alcoholic extract of guinea-pig's heart muscle, to which was added a 1 per cent. solution of cholesterin in the proportion of 9 parts of heart extract to 1 of the cholesterin solution. Ninety-one serums were Wassermann positive: positive flocculation (L) occurred in eighty-six serums and positive flocculation (D) occurred in seventy-four serums. Comparing the Wassermann and the flocculation tests by L antigen the total number of discrepancies in the series was 11, or 4.1 per cent., and in the case D 23, or 8.6 per cent. The 91 positive Wassermann tests are classified as 70 "full positive," 10 "partials," and 11 "slight partial." Thus five of eight missed positives with L antigen correspond to partial and slight positive Wassermann reactions, and half of those missed by D antigen are similarly accounted for. Only three serums yielded positive results with both L and D antigens. In all three the flocculation tests were recorded as "trace" reactions.

Use of Fascia Lata for Remedying Defects.—Fascia lata has been used by Cuff to fill in a deficiency in the oblique muscles from the rectus sheath medially to the remains of the extrenal oblique aponeurosis laterally; a deficiency of the muscles of the forearm; to take the place of a painful adherent scar about the middle of the subcutaneous border of the tibia; to wrap around a mandibular bone graft; to strengthen the pleural sac over a hernia of the right lung; to overcome a "drop-foot," the results of nerve injury consequent on a gunshot wound of the thigh. Fascia lata, 12 inches by 2 inches, was split from below upward for 7 inches, thus resembling a pair of trousers. The upper portion was sutured deeply to the periosteum of the tibia and fibula, and to the split aponeurosis. The lower bifurcated portion was pulled down by tunneling the subcutaneous tissues with forceps, and a limb drawn into each of the two lower wounds. Here with the foot in full dorsiflexion all slack was taken up, and the two strips sutured to the periosteum of the scaphoid and the fifth metatarsal, respectively, and to the plantar fascia. The man could walk well without any special boot.

Calcutta Medical Journal

March, 1922, **16**, No. 9

Treatment of Purulent Ophthalmia. S. C. Dutt.—p. 323.
Review of Angina Pectoris Based on Important Information Obtained from Analysis of Series of 13 Cases. U. P. Basu.—p. 333.
Retrospect Mineral Metabolism. A. Roy.—p. 343.

Edinburgh Medical Journal

April, 1922, **28**, No. 4

*Puberal Mammary Hypertrophy. D. M. Greig.—p. 153.
*Xanthoma Diabeticorum: Report of Case. D. M. Lyon.—p. 168.
Complement-Fixation Reaction in Tuberculosis. N. Smith.—p. 174.

Puberal Mammary Hypertrophy.—Greig reviews briefly 315 cases recorded in the literature since 1859 and pleads that puberal mammary hypertrophy with its fulminating puerperal congener be recognized as a disease sui generis, having distinctive symptoms and running a definite course, and urgently necessitating a definite surgical procedure.

Xanthoma Diabeticorum: Recovery from Diabetes.—Apart from the skin lesion Lyon's case presents several points of unusual interest. All the symptoms and the examinations of the blood and urine suggested a serious type of diabetes mellitus. The patient had a polyuria reaching 7,000 c.c., a gloycosuria of 5 per cent., and a daily waste of about 300 gm. carbohydrate, a high fasting level of the blood sugar, 0.388 per cent., and a very low carbohydrate tolerance as shown by the greatly exaggerated postprandial rise in the blood sugar. There was obvious difficulty in dealing with the fats ingested. Such a serious state of affairs in a man aged 25 would suggest a very bad prognosis, and yet he returned to almost perfect health. From this it would seem that in making a prognosis less weight should be given to the evidences of the severity of the disease and more to the amount of improvement that the patient is capable of under treatment. This improvement has been maintained for at least nine months.

Glasgow Medical Journal

April, 1922, **97**, No. 4

Tay-Sachs' Disease: Symptomatology and Pathology of Three Atypical Cases. H. W. Torrance.—p. 193.
*Industrial Dermatitis. A. D. McLachlan.—p. 212.
Structure of the Vertebrate Head. W. B. Primrose.—p. 223.
Facial Paralysis Complicating Acute Otitis Media. G. Young.—p. 231.

Industrial Dermatitis.—McLachlan discusses a dermatitis of the hands and forearms occurring in workers in cutting lubricants, all of which contain free fatty acids and copper. Aside from the lubricant other factors in the production of this dermatitis seem to be the bacterial content and contamination; nature of the material worked—bronze, copper, steel; habits of employees—personal cleanliness, discipline of shop, cleanliness of machine and personal idiosyncrasy. The comparative rarity of the condition among the large number of employed suggests that individual idiosyncrasy may be an important factor.

Indian Journal of Medical Research, Calcutta

January, 1922, **9**, No. 3

Bacteriologic and Laboratory Technic. IV. W. F. Harvey.—p. 405.
So-Called "Penis" of Bedbug (Cimex Lectularius L.) and Homologies Generally of Male and Female Genitalia of this Insect. S. R. Christophers and F. W. Cragg.—p. 445.
*Melanotic Growths. Researches of Alterations in Melanoblastic Layer of Vertebrates Explain Structure and Origin of These Growths. H. W. Acton.—p. 464.
Kala-Azar and Oriental Sore Problems. W. S. Patton.—p. 496.
Study of Kala-Azar (V). J. W. Cornwall and H. M. LaFrenais.—p. 533.
Histopathology of Nonulcerated Oriental Sore. J. W. Cornwall.—p. 545.
Indian Calliphorinae. Part II. Lucilia Argyricephala Macq. (Serenissima Fabr.), Common Indian Basaar Green Bottle, Whose Larvae Occasionally Cause Cutaneous Myiasis in Animals and Lucilia Craggii Sp. Nov., One of Common Blow Flies of Indian Hill Stations. W. S. Patton.—p. 548.
Id. III. Chrysomyia Megacephala Fabr. (Dux Esch). Common Indian Blue Bottle, Whose Larvae Occasionally Cause Cutaneous Myiasis in Animals and Chrysomyia Nigriceps Sp. Nov., Common Blue Bottle of Nilgiris. W. S. Patton.—p. 555.
Id. IV. Chrysomyia Albiceps Wied. (Rufifacies Froggatt); One of Australian Sheep Maggot Flies and Chrysomyia Villeneuvii, Sp. Nov. W. S. Patton.—p. 561.
Id. V. Lucilia Pulchra Wied. (Ruficornis Macq.), A Larviparous Calliphorine, and Lucilia Ballardii, Sp. Nov., Common South Indian Blow Fly. W. S. Patton.—p. 570.
Entomologic Notes on Field Service in Waziristan. J. A. Sinton.—p. 575.
Electrolytic Chlorogen. W. Hodgkinson and C. M. Hutchinson.—p. 586.
*Reliability of Gate and Papacostas' Formol-Gel Test for Syphilis as Compared with Wassermann Reaction. S. Ramakrishnan.—p. 620.
*Heart in Beriberi and Evidence of Differential Stethoscope. C. A. Sprawson.—p. 625.
Grappling Tail Hooks in Anopheline Larvae. M. O. Tirunarayana Iyengar.—p. 630.

Melanotic Growths.—A pigmented mole, according to Acton, is produced in one of the following ways: (1) Benign melanomas consist of an aggregation of melanoblasts under the dermis, and morphologically represent a portion of the primitive pigment sheet of amphibians, etc. (2) Benign melano-epitheliomas consist of a papillomatous mass of epidermal cells pigmented by melanoblasts, and morphologically represent a suppressed hair field, or hair area, in which the epiblastic element has largely persisted. (3) Benign melano-endotheliomas consist of an aggregation of melanoblasts, and angeioblasts, morphologically representing the mesoblastic elements of the hair papillae in which the epiblastic down growth has almost wholly or entirely atrophied. (4) Benign endothelioma consists of an aggregation of angeioblasts, and morphologically represents a suppressed mesoblastic papillae in which the vascular element alone remains. The malignant growths are derived in a similar manner: (1) Those arising from the melanoblasts only are of the nature of spindle-celled melanosarcomas; (2) while those arising from moles (benign melano-endothelioma) are necessarily of the nature of malignant melano-endotheliomas and contain both angeioblasts and melanoblasts. One or other of these cells may predominate in the primary or secondary growths. The mode of dissemination confirms this view. The melanotic sarcomas rapidly erode the blood vessels, and are spread broadcast through the internal organs, without any glandular enlargement. The endothelioma cells spread by permeation, and less commonly by the blood vessels, and glandular infection and metastatic growths by lymphatic permeation are the rule.

Value of Formol-Gel Test for Syphilis.—The formol-gel reaction was tested by Ramakrishnan with the serum of 539 cases sent for diagnosis of syphilis against the Wassermann reaction and the two tests have been found to agree in only 66.6 per cent. of cases. With the serums which came from well marked cases of the disease the percentage of agreement was only 73.4. The test is, therefore, considered not sufficiently reliable to take the place of the Wassermann reaction.

Heart Lesions in Beriberi.—Sprawson states that about half the number of Chinese beriberi cases seen by him showed on admission distinct evidence of myocardial debility which was usually slight enough to disappear shortly after treatment by rest in bed. Both sides of the heart may be affected, the right usually somewhat more than the left. The use of the differential stethoscope was sometimes of aid in prognosis and treatment.

Journal of Laryngology and Otology, Edinburgh

April, 1922, **37**, No. 4

Structural Type of Mastoid Process Based on Skiagraphic Examination of One Thousand Craniums of Various Races of Mankind. L. Turner and W. G. Porter.—p. 161.
*Influence of Toxic Agents on Nasal Mucosa. N. Maclay.—p. 176.
Course and Relations of Arnold's Nerve (Auricular Branch of Vagus) in the Temporal Bone. A. A. Gray.—p. 182.
Early Diagnosis and Drainage of Otitic Meningitis. E. D. Davis.—p. 186.
*Case of Malignant Disease of Nasopharynx. J. Harrison.—p. 188.

Influence of Toxins on Nasal Mucosa.—Maclay expresses the conviction that some of the common intranasal phenomena cannot be regarded as the outcome of physical defects in the nose or entirely due to microbic infection in the nose or nasal accessory sinuses, and that such phenomena can only be explained by the theory that they are the local manifestations of some general state. Such conditions as spasmodic rhinorrhea and sneezing, the so-called, and, perhaps, ill-named, "vasomotor rhinitis" and the noninfective cold, seem to justify the assumption that some blood-borne element of biochemical origin may be the root cause, and, hence, is not influenced in any great degree by the removal of the obstruction or anatomic deformity or the evacuation of the local purulent focus, and that this systemic agent perpetuates the symptoms.

Endothelioma of Nasopharynx with Metastases.—Harrison cites a case of probable endothelioma or sarcoma of the nasopharynx with metastases over the clavicle, in the neck, scalp, right axilla, region of gallbladder and lower part of femur.

Journal of Tropical Medicine and Hygiene, London

April 1, 1922, **25**, No. 7

*Recent Epidemic of Tropical Septic Ulcer in Palestine: Tropical Sloughing Phagedena. A. G. Apostolides.—p. 81.

Tropical Septic Ulcer.—Any condition, physical or hygienic, which tends to reduce the tissue vitality below par and to lessen the resisting power of the organism as a whole, Apostolides states, may rightly be regarded as a predisposing cause of tropical ulcer, but all recent observers recognize—and Apostolides' own cases and experiments confirmed their opinions—that the only causative agent, the sine qua non of the tropical ulcer, is the fusiform bacillus in association with the *Spirocheta pallida* (schaudinni). There can, then, be no doubt that it is a specific disease propagated by direct contagion from man to man. That the infection takes place through the broken skin, Apostolides says, is evident. The preponderance of the ulcers in the legs among people with bare feet is the best proof of infection through the skin. Sometimes a prick or scratch with an infected instrument may introduce the infection into the skin. Certain possible instances were demonstrable that the disease is transmissible from man to man by means of some insects which attack only uncovered parts of the body and often in the night time. This insect Apostolides believes to be the mosquito, as the insect whose habits seemed adapted for such a purpose, and whose distribution conformed to the well ascertained habits of tropical ulcer. A strong support is given to this hypothesis by the fact that tropical ulcer is endemic in the same parts of the world with malaria, and attacks persons suffering from it so frequently that some writers regard tropical ulcers as a malarial manifestation.

Annales des Maladies Vénériennes, Paris

April, 1922, **17**, No. 4

*Purpura After Arsphenamin. Lespinne and Wydooghe.—p. 241.
*Arsphenamin and Its Limits. Lehnhoff-Wyld.—p. 261.
*Syphilitic Hydrarthrosis. J. Montpellier and A. Lacroix.—p. 294.
The "Syphilitics' Pater Noster," 1540. R. Barthélemy.—p. 298.

Purpura After Arsphenamin.—Two cases are described in which repeated injection of an arsenical induced hemorrhagic purpura. It appeared in one case during the second series, after suspension for three months, and the arsphenamin was then abandoned. In the second case the purpura developed after the twelfth injection, after a total of 3 gm. of the arsenical had been given. This mild arsenical treatment had been given this young man for disseminated sclerosis. The purpura assumed a hemophilic character, grave and rapidly progressive, rebellious to calcium chlorid and epinephrin. A fatal termination seemed to be impending when a single intramuscular injection of 10 c.c. of 5 per cent. Witte peptone arrested it at once and permanently. The writers warn that the slightest tendency to purpura calls for suspension of arsenical treatment and of intravenous treatment of any kind.

The Limits of the Arsenicals. — Lehnhoff-Wyld discusses the importance of the limit of concentration below which the drug has no parasiticidal action, saying that the dose can be fractioned provided the concentration is never allowed to fall below this limit during the required period. Syphilis with lesions and syphilis without lesions are two quite different problems. The anatomic cure should be accomplished before attempting sterilization. The more diffusible the drug, the more active it is and the less harmful. The therapeutic efficacy increases rapidly with larger doses, but the danger as the limit of tolerance is approached increases still more rapidly. The drug diffuses more slowly into or from fluids in repose. He adds that the rapidity of elimination of the arsenic can be estimated by examining the urine the sixth and the twenty-fourth hours after the injection. Normal elimination probably occurs by Newton's law.

Syphilitic Hydrarthrosis.—Montpellier has been unable to find on record a case like the one he reports in which both knees were the seat of syphilitic hydrarthrosis the seventy-sixth day after the contagion, the thirty-ninth day after the appearance of the chancre. The eruption did not develop till later.

Bulletin de l'Académie de Médecine, Paris

April 4, 1922, **87**, No. 14

Glanders in Man. G. Delamare and O. Noury.—p. 381.
*Infectious Origin of Disseminated Sclerosis. A. Pettit.—p. 383.
*Scarlet Fever in Adults. C. Saloz and P. Schiff.—p. 386.
Disease Versus Malformation of Hip Joint. Calot.—p. 392.
*Otitis in Infants. M. Renaud and R. Arbeltier.—p. 394.

Infectious Origin of Multiple Sclerosis.—Pettit inoculated rabbits and a monkey with cerebrospinal fluid from a patient with multiple sclerosis but free from syphilis. The animals died, and micro-organisms resembling spirochetes were found in the cerebrospinal fluid.

Scarlet Fever in Adults.—Saloz and Schiff describe an almost explosive outbreak of scarlet fever at Geneva; almost 500 cases were reported in six days. The epidemic began December 20 and stopped December 29. Fully 62 per cent. were adults; 7 per cent. between 40 and over 60. There were only 51 men to 166 women among the hospital cases. Herpes was noted in 11 per cent. and pruritus in 35 per cent. The Schultz-Charlton skin blanching or extinction test was often very useful in the differential diagnosis, and also the fixation of complement test, especially for the retrospective diagnosis in dubious cases. Attempts to apply the Schick reaction principle to scarlet fever were not conclusive. These various tests, however, confirmed the scarlatinal nature of the infectious sore throats noted in such numbers during the epidemic and subsiding with it.

Otitis in Infants.—Renaud states that since minute and repeated investigation of the ear has been introduced in his service, the number of infants with otitis has jumped from 7.7 to 75 per cent. of the 162 infants examined. Otitis was beyond question also in 36 of 112 infants brought to the infant welfare station. The gravity of infant otitis is shown by the fact that the 29 infants free from otitis all left the hospital in good condition, excellent in 20, while only 14 survived of the 73 who had presented signs of otitis.

April 11, 1922, **87**, No. 15

*Otitis in Infants. Bar.—p. 399.
*Sterility in Persia. Mathilde Deromps.—p. 402.
Tuberculin Tests in Dairy Cows. Calmette.—p. 407.
*Malted Starch Products. Doléris and R. Lecoq.—p. 409.
*Fixation of Complement by Dust in Lung. G. Kuss.—p. 418.

Otitis in Infants.—Bar has been surprised to find evidences of otitis media in infants that had died within a few days of birth. In one child that had died during the first stage of labor, streptococci were found in the ear. The mother was infected. The infant may thus have its ears as well as its eyes infected during the birth process.

Sterility in Persia.—Deromps has been at the head of the state hospital for women and children at Teheran for the last fifteen months, and she relates that of the 3,300 women who have applied for advice, 648 came on account of their sterility. The Persian law permits a man to repudiate a wife that has not borne him a child. Of these 648 women, 362 had chronic gonococcus infection, 228 syphilis, and in only 58 were there other causes to explain the women's being sterile. In 2 of these the uterus was missing, and in the others the internal genitals were infantile or rudimentary. She ascribes this incomplete development to the effect of the early marriages. In the majority of these women menstruation did not become established until several months up to three or four years after marriage between 9 and 12. Severe lacerations were evident in some of the women.

Malted Cereals.—Doléris and Lecoq have been investigating the possibility of more effectually augmenting the digestibility of starchy foods by predigesting with malt, and the preferable technic for this. Pulverized barley malt or malt flour is the most convenient form in which malt can be used, and their research indicates that the optimal temperature is 75 C.; 30 per cent. is the optimal proportion of the malt flour, and fifteen minutes the optimal duration of the *maltage*. The porridge or other cereal is cooked first. After it is taken from the fire and waiting for two or three minutes, the malt flour is then added, about one teaspoonful for each tablespoonful of the porridge or purée. The dish is then kept warm for fifteen minutes, and is then boiled up quickly again, when it is ready to serve.

Fixation of Complement by Dust in Lungs.—Kuss experimented with guinea-pigs, having them inhale air containing magnesium dust and dust of stannic acid. The animals swallowed a large proportion of the dust in the air. The tests showed that the dust particles entered the lungs almost as abundantly and regularly as a gas is drawn into the lungs. The research reported is the more instructive as the air passages in guinea-pigs are much narrower in proportion than in large animals and in man.

Bulletin Médical, Paris

April 8, 1922, **36**, No. 15

*Pupil Sign of Pulmonary Tuberculosis. A. Martin.—p. 281.
*Goats' Milk for Infants. J. Camescasse.—p. 284.

Pupil Sign of Pulmonary Tuberculosis.—Martin instils into each eye one drop of a "0.02 per 10 atropin collyrium," and then examines the pupils day by day afterward. In the healthy, the pupils after the primary dilation gradually return to their previous diameter in four or five days. With a pulmonary process, the eye on that side shows persisting dilation of the pupil for from two to five days longer. The light reflex is also modified for from one to five days after the light reflex in the other eye has returned to normal. In forty-seven patients tested, this sign harmonized with other signs of pulmonary tuberculosis in 94 per cent. On the other hand, the atropin test gave positive findings in 13 per cent. of eight supposedly normal controls.

Goat's Milk in Infant Feeding.—Camescasse says that his extensive experience has proved that when breast milk is out of the question, goat's milk is a safer and better substitute for it than cow's milk. But he insists that the goat must be on the premises, and the milk taken raw. The ideal is to draw the milk fresh for each feeding.

April 22, 1922, **36**, No. 17

*Bismuth Treatment of Syphilis. Jeanselme and Blamoutier.—p. 317.
Deep Roentgenotherapy. P. Cottenot.—p. 318.

Bismuth Treatment of Syphilis.—The young woman developed jaundice before the roseola stage of the syphilis, during a course of bismuth treatment. In another young woman there was a pronounced Herxheimer reaction under the bismuth treatment.

Encéphale, Paris

March, 1922, **17**, No. 3

Hereditary Transmission of Mental Disease. A. Wimmer.—p. 129.
The Striate Body in Dementia Praecox. Laignel-Lavastine et al.—p. 151.
Phenobarbital in Epilepsy. Divry.—p. 169. Conc'n No. 4, p. 228.

April, 1922, **17**, No. 4

Heteresthesia in Concussion of Spinal Cord. J. Lhermitte and L. Cornil.—p. 201.
*Polygamy and Heredity. R. Mignot.—p. 212.
The "Complexes" of the Insane. E. Minkowski.—p. 219. Cont'd.
The Lipoids in Nervous and Mental Pathology. H. Biancani.—p. 234.

Heredity in the Descendants of a Polygamist.—Mignot gives a table of four generations of the family of a nineteenth century French patriarch who had 22 children by nine women. The family lived on an island in the West Indies in a restricted environment, geographically and socially, and the 151 descendants of the patriarch included 26 who were mentally abnormal; 10 of them committed suicide and 3 committed murder; there were 7 insane; 4 addicted to alcohol. The table shows that the psychopathic taint affected only males, and was transmitted only by males. The 8 daughters of the patriarch and their issue to the fourth generation were normal. The patriarch himself and his parents were normal; his father was a French colonist, his mother an African negress. The latent taint appeared in the issue from seven of his unions, all at the prime of his life. These seven women were mulattoes. Several among the 125 normal descendants were of superior mentality; 2 were mathematicians of renown and one a statesman. One of the patriarch's grandsons is now interned in Mignot's service on account of a delirium of persecution. The psychopathic taint was most prominent in the second generation and was ebbing in the third; 14 of 26 men in the second generation were abnormal and only 6 in the third, much more numerous generation. The transmission of the taint did not follow Mendel's laws regularly, but the force of the transmission is evident. The ebbing of the taint is consoling for all interested in the families of the insane, and it calls for caution in yielding to the clamor for legal sterilization of the abnormal. Several cousins intermarried, but the offspring of these consanguineous unions were all normal.

Paris Médical

April 8, 1922, **12**, No. 14

*Professional Radiodermitis. P. Degrais.—p. 293.
Radiologists' Cancer. R. Ledoux-Lebard.—p. 299.
Lipoma of Finger. Martin and Grenier.—p. 303.

Radiodermitis.—Degrais remarks that not only the skin but the tendons, bones, nerves and sexual and blood forming organs are liable to suffer from professional use of the roentgen and radium rays and emanations. Radium treatment is often effectual for roentgen-ray epithelioma as he shows by some typical cases illustrated. In one, the epithelioma on the finger returned after two operations. It had followed a radiodermitis which had developed ten years after all radiologic work had been given up. The epithelioma retrogressed completely and durably after exposure for fifteen hours to radium. He warns that professional radiologic lesions discredit radiology in the eyes of the public. Patients consider it too dangerous, not realizing that it is only the zeal of professional workers that entails these injuries. To act quicker or with greater precision, the worker is liable to discard the protecting forceps or other instruments, and seize the applicator in his hand.

Presse Médicale, Paris

April 19, 1922, **30**, No. 31

*Continent Artificial Anus. B. Cunéo.—p. 333.
*Cocain Poisoning. F. Moutier and A. Guérin.—p. 335.

Continence of Artificial Anus.—Cunéo's illustrations show how he utilizes the principle of a skin tunnel, such as are used for cinematization of amputation stumps. The bowel is brought over this tunnel and through the skin below, and a rubber covered clamp device compresses the bowel, just above the artificial anus, between the rubber covered base, slipped through the tunnel, and the pad above. This clamp device weighs only 25 gm. and is removed at will. It is not intended to be worn continuously, and he admits it is open to improvement, but regards the principle involved as great progress.

Cocain Poisoning.—Moutier and Guérin have sought to distinguish the bulbar symptoms in the clinical picture of acute poisoning from intra-orbital injection of cocain.

Revue Franç. de Gynécologie et d'Obstét., Paris

March, 1922, **17**, No. 3

*Pituitary Treatment in Obstetrics. L. Pouliot.—p. 129.
*Radium Therapy in Gynecology. S. Tsakona and J. Kopp.—p. 145.
*Hysterectomy in Puerperal Infection. J. Courbin.—p. 150.

Pituitary Treatment in Obstetrics.—Pouliot refers here to only one field in obstetrics, the posterior varieties of vertex presentation. Expulsion is always slower than with the anterior varieties. With multiparas, labor lasts four or five hours longer and with primiparas considerably more than this. The rule that pituitary extract should not be given till the period of expulsion, waiting until the os has opened considerably, does not apply here. The criterion, he explains, is not the diameter of the os but the growing thinner and more supple of the inferior segment. Nine cases are described in detail to show how the pituitary revived almost instantaneously the deficient labor contractions in women with O. I. P. presentation. In multiparas, delivery proceeded rapidly and easily. In primiparas the results were less constant and less immediate but still they were very appreciable, shortening labor and usually rendering forceps unnecessary. He repeated the effectual dose until expulsion was complete; there was no hemorrhage. In 100 deliveries under pituitary treatment, only one infant has seemed to suffer from it (born "dazed"), and this was in 1912. He gives 1 c.c. If this proves effectual, he repeats it after the effect is quite exhausted, even in an hour. But he warns impressively against a second injection if the first has failed, and he warns further that only the obstetrician should give pituitary. He has never given more than three injections; 1 c.c. each, he says, represents a total of 60 cg. of the fresh gland.

Radium Treatment of Uterine Cancer.—Tsakona and Kopp write from Athens to describe three instructive cases in which the erythem dose of radium rays induced a clinical cure of extensive cancer of the cervix. They curet the cancer beforehand as a rule. In a fourth, an apparently identical case, the malignant disease was refractory.

Indications for Hysterectomy in Puerperal Infection.—Courbin says that if we wait until after all medical measures have failed, the emergency hysterectomy will come too late in 90 per cent. of the cases. When the uterus muscle is gravely infected, gangrenous or hyperseptic, the uterus should be removed when the facies shows toxic shock, and the uterus is soft and its secretions black and fetid, if there is any secretion at all. With beginning puerperal septic peritonitis, the indications for emergency hysterectomy are the toxic facies, the softness of the uterine muscle, and Delbet's sign, namely, the immovability of the abdomen during the respiratory movements. This is the first sign of involvement of the peritoneum.

Policlinico, Rome

April 3, 1922, **29**, No. 14

Nitritoid Crises from Defective Arsphenamin. F. De Napoli.—p. 441.
Epidemic Singultus. A. Linassi.—p. 450.
*Epidemic of Apyretic Colic. R. D'Afflitto.—p. 453.
*Ureometer. L. Condorelli.—p. 454.

Epidemic Apyretic Colic.—D'Afflitto relates that last fall violent abdominal pains and pseudo-occlusion of the bowels occurred in epidemic form. The course was progressive for six or eight days; then the pains disappeared and diarrhea followed, and the slightest error in diet brought on a relapse. There were several hundred cases in the town of 8,000 inhabitants and 190 cases in a smaller town nearby, and numerous others in the rural district around. In the later course of the epidemic the clinical picture included tenesmus and pollakiuria and the disturbances dragged along for two or three months. The families affected all used flour from a certain one of the two mills in the district and it was found that the miller had been in the habit of filling up with melted lead the crevices in the grindstones.

Simple Ureometer.—Condorelli gives an illustrated description of his two-jar hypobromite ureometer, with a table from which the urea content can be estimated from the amount of gas generated. He says the findings are accurate even with as little as 1 c.c. of blood serum.

Riforma Medica, Naples,

Feb. 20, 1922, **38**, No. 8

*Treatment of Echinococcus Cysts. Taddei.—p. 169.
*Polyvalent Vaccine Therapy in Tuberculosis. F. Durand.—p. 173.
Artificial Pneumothorax for Abscess in Lung. Siro Mazza.—p. 174.
Comparative Serodiagnostic Tests for Syphilis. A. Versari.—p. 175.
Social Prophylaxis. A. Borrino.—p. 189.

Treatment of Echinococcus Cysts.—Taddei reports a case with complete recovery after removal of a large hydatid cyst in the small pelvis, one in the spleen and one in the peritoneal space. Some were very large, but he refrained from suturing any of them to the skin, fearing difficulty in getting the fistula to heal. He tried to obliterate the cavity of each cyst by *capitonnage,* taking U sutures to approximate the interior surfaces of the cyst cavities. In another case there was secondary gas bacillus infection of the large hydatid cyst in the liver. Marsupialization exposes to secondary infection, and a cyst is often opened without regard to the necessities of gravity drainage. Eventration later is common, and an operation to correct it is hampered by the preexisting adhesions. When suppuration is already installed, marsupialization may be indicated, but a counter opening is usually necessary to insure ample draining; in the lumbar region with a liver cyst. No drain tube, he adds, should ever be used. Partial resection of the cyst walls is usually an advantage, or partial *capitonnage,* as also Devé's method of sterilization of the cyst interior with formaldehyd. Removal of the cyst entire, without opening it, is seldom possible.

Vaccine Therapy of Pulmonary Tuberculosis.—Durand's vaccine was made from the bacteria obtained by direct puncture of the lung plus those from the sputum. The bacteria were killed by heat and were injected subcutaneously, on alternate days, to a total of from thirty to fifty injections. The benefit from this vaccine, made from the associated micro-organisms, testifies to the importance of this association in the clinical picture. As the vaccine includes the sputum micro-organisms it has a prophylactic influence, warding off further superposed infection. The improvement was so pronounced in some of the patients that they gained in weight 700 gm. and more in six days, but when tubercle bacilli alone were involved, no benefit was apparent. Leukocytosis follows the vaccine, and the fixation of complement and opsonic index confirm the trend to immunization.

March 13, 1922, **38**, No. 11

*Chronic Malaria in Children. L. Chimisso.—p. 241.
*Intermediate Metabolism with Kidney Disease. A. Zino.—p. 243.
*Treatment of Hypertrophy of the Prostate. G. Carisi.—p. 246.
Medical Surgery. B. Schiassi.—p. 252.
Nonspecific Treatment of Acute Infections. A. Ferrannini.—p. 253.

Chronic Malaria in Children.—Chimisso calls attention to the stunting of the growth of the young in a malarial region on the coast of the Adriatic, and the backward development. Puberty may be as late as after 20, and there may be a tardy growth after this age. Fully 26 per cent. of the population show defective development in both sexes. There seems to be a certain analogy between the arrested development with goiter in children, and that with malaria.

The Metabolism in Kidney Disease.—Zino notes that the gravity of the symptoms does not always parallel the degree of the uremia. Also that the nitrogen in the blood is not proportional to the retention of nitrogen evidenced by the urine; he assumes that the uremia may be due to hyperproduction in some cases, with or without disturbance in elimination by the kidneys. In glomerular nephritis, the nitrogen level in the blood always varied with the intensity of the disease process and returned to the previous figure as kidney conditions returned to normal. In uremia with tendency to convulsions, the nitrogen in the blood increased as the blood pressure rose. As the nervous symptoms subsided, the blood pressure declined and, parallel with this, the uremia. Ten cases illustrating different types are reported in detail.

Hypertrophy of the Prostate.—Carisi compares the ultimate outcome with different operative methods in Giordano's service and in other clinics. With the perineal method, about 50 per cent. were regarded as cured and the mortality was about 15 per cent. This list includes Giordano's 21 cases, Pauchet's 53, Gardini's 65, Albarran's 43, etc. With the Freyer transvesical technic, Giordano had 48 cured of 61 patients, with 9 deaths and 4 incomplete results; Hartmann 51 cured of 56; Gardini 17 of 21, and Israel 18 of 18. In Pelicelli's compilation of 630 Freyer cases, only one instance of persisting fistula was known. There was no return of the hypertrophy. In 2 of Giordano's cases, the enlarged kidney subsided to normal size and the symptoms of uremia disappeared. In 12 of 23 over 60, the sexual functions were unimpaired; in another patient they returned after having been abolished for a time; in 6 others only partial function was retained, and in 4 others impotency followed the operation.

Semana Médica, Buenos Aires

March 16, 1922, **1**, No. 11

A Duodenum Anomaly. A. Gutiérrez.—p. 409.
*Bacteriophagia. The d'Herelle Phenomenon. C. E. Pico.—p. 415.
Rupture of the Uterus. T. A. Chamorro.—p. 420.
Apparatus for Artificial Pneumothorax. F. Gorriti.—p. 424.
*Syphilis of the Bladder. P. Ghiso and J. J. Puente.—p. 426.
*Bacterial Autolysis: Bacteriophagia. A. Bachmann and L. I. Aquino.—p. 432.
*Granulomatosis. A. E. Bianchi.—p. 432.
Inheritance of Syphilis. J Palacio.—p. 442.

Bacteriophagia.—Articles on the Twort-d'Herelle phenomenon are appearing now in every country. Pico asserts that the phenomenon of bacteriophagia has a more general significance than has been realized hitherto. It seems to be a form of autocatalysis, a disintegration of the bacterial proteins under the action of ferments originating in the bacteria themselves or in the bowel content or blood.

Syphilis of the Bladder.—Ghiso and Puente remark that the bladder mucosa probably shares in the manifestations of syphilis during the secondary stage, but no one thinks of cystoscopy at this stage. Eleven such cases, however, are on record, and in one of them the bladder findings first gave the clue to the general syphilis. After eleven days of specific treatment the bladder was practically normal. Ulcerating gumma of the third stage is more common. Hematuria without pain was the first symptom to attract attention in 0 per cent. of Thompson's 51 cases. The hemorrhage is not influenced by position or repose, and it may keep up for days or weeks and finally subside completely. In 5 cases clots plugged the outlet, and in 2 of Nin Posada's cases the hematuria had been preceded by malaise and chill, and slight persisting fever followed. Pollakiuria is common; pain is rare, but may be violent while it lasts. One patient complained of agonizing pain in the hypogastrium for two years. The pain gradually became continuous night and day, with exacerbation when the bladder filled. The pain spread to the perineum and sometimes to muscles and glands.

In many instances the bladder lesion was the only active manifestation of the syphilis, and in cases without a clear history, the syphilitic origin sometimes escaped recognition. The cystoscopic findings are not characteristic; tuberculosis is excluded only by negative search for tubercle bacilli and inoculation of animals. Even specific treatment may be misleading as neoplasms in a syphilitic soil usually improve under specific treatment, but this is only temporary. The Wassermann reaction was positive in 16 of the 17 cases known, but it was negative in a case personally observed. The woman of 57 had aborted six times, and had had nine normal deliveries. The bladder symptoms began in December, 1921, repeated desires, especially at night, and then pain, exaggerated at micturition. After a week of this, blood appeared in the urine and the pain subsided. The hematuria continued, at intervals of a day or two, for a month with malaise, syncopes and nausea, and the cystoscope showed ulceration but the Wassermann test was negative. Under arsenical treatment the symptoms gradually subsided, and the bladder mucosa had returned nearly to normal by the sixteenth day.

Bacteriophagia.—Bachmann and Aquino report research on d'Herelle's bacteriophagia. Modifying the dysentery bacilli with cobra venom or pancreatin intensified the transmissible autolysis.

Granulomatosis.—Bianchi reports the first case to be published in Argentina of granulomatous ulcerations in the stomach. He diagnosed the lymphogranulomatosis from the blood and clinical findings, confirmed by necropsy, in the man of 45. For the last fifteen years he had been having occasional hemorrhage from the bowel for three or four days at a time.

Gaceta Médica de Caracas

Dec. 15, 1921, **28**, No. 23

Malaria in State of Zamora. R. Medina Jiménez.—p. 351.
*Spirochetal Bronchitis. P. González Rincones.—p. 365.

Spirochetal Bronchitis.—González Rincones reports a case of Castellani's bronchial spirochetosis which simulated pulmonary tuberculosis. The disease had invaded the lung and had persisted for seven months before the spirochetosis was recognized. Then it yielded to a four months' vigorous course of mixed treatment, iodin, antimony and arsenic. In another case the girl of 14 presented the spirochetal bronchitis in an acute form, and under 50 cg. of antimony and potassium tartrate in the course of a month the cure was soon complete. The symptoms had deceptively simulated acute pulmonary tuberculosis. The drug was injected daily by the vein in doses increasing from 0.02 to 0.05 gm., with intervals of repose, to the total of 50 cg. There was never any sign of intolerance.

Repertorio de Medicina y Cirugía, Bogotá

December, 1921, **13**, No. 3

Prophylaxis and Serotherapy of Yellow Fever. H. Noguchi.—p. 118.
*Climatic Fevers. P. J. Amaya.—p. 135.
Hygiene in Colombia. L. E. Aconcha S.—p. 141.
Treatment of Fracture of Neck of Femur. A. Esguerra.—p. 154.

Climatic Fevers.—Amaya explains the necessity for the emunctories being in perfect order when making a sudden change to a tropical climate. When the emunctories are working well, the excess of heat is cast off by the skin, lungs, etc. If this cannot occur, the heat accumulates, and there may be an acclimatation fever or tropical dengue or relapsing fever or fever from the invasion of malaria, or there may be actual climatic shock. The combination of the heat, change of diet, and insect bites in persons over 40, with some organic lesion of heart, kidneys or lungs, the skin functions sluggish, is liable to induce actual climatic shock, especially if the skin has been accustomed to a cool climate without much chance for functioning of the sweat glands. With headache, pains in muscles and back, and fever running up suddenly to 41 or 42 C. in a few hours or the second or third day, a comatose condition may prove fatal in four or five hours. The clinical picture is that of heat stroke, but the patient is in bed, and there has been no exposure to the sun. A change to a cooler climate is followed by rapid improvement. He advises making the change from a cool to a tropical climate only gradually.

Revista de la Asoc. Méd. Argentina, Buenos Aires

December, 1921, **34**, No. 206

Pay Patients in the Public Hospitals. J. S. Passeron.—p. 1289.
Prophylaxis of Venereal Disease. M. V. Carbonell.—p. 1317.
*Encysted Pleurisy. M. R. Castex and A. A. Raimondi.—p. 1353.
*Interlobular Pleurisy. G. Aráoz Alfaro.—p. 1389.
*Ulcerative Colitis. T. Martini and C. Bonorino Udaondo.—p. 1409.
*Interlobar Pleurisy in Children. J. P. Garrahan.—p. 1452.
Microbiology of Spirochaeta Pallida. P. I. Elizalde.—p. 1455.
*The Spermatozoa of Syphilitics. V. Widacowich.—p. 1564.
The Basis and Value of the Wassermann Test. E. Lorentz.—p. 1579.
Precipitation Reactions in Syphilis. A. Sordelli and C. E. Pico.—p. 1651.
*Tumors of the Pancreas. R. A. Rivarola.—p. 1669.
Inherited Syphilis of the Long Bones. L. A. Tamini.—p. 1702.
Present Status of Treatment of Puerperal Infection. E. A. Boero.—p. 1713.
Roentgen-Ray Treatment of Uterine Fibromas. E. Lanari.—p. 1727.
*Mishaps with Gastro-Enterostomy. P. Escudero.—p. 1736.
Access to and Mobilization of Pancreas and Spleen. A. Gutiérrez.—p. 1743.

Encapsulated Pleural Effusions.—Castex and Raimondi recall that encysted pleuritis is always secondary, as the adhesions entailing the cyst formation are relics of some previous inflammatory process. Treatment has to be both general and local, but an active tuberculous focus forbids the measures for revulsion otherwise advisable, as they might entail hemoptysis. They review the different clinical pictures as different parts of the pleura are affected. In the apex region, the process may be mistaken for apical tuberculosis.

Interlobular Pleurisy.—Aráoz Alfaro remarks that the roentgen rays have revealed that encapsulated pleurisy is much more common than previously believed possible. The encapsulated interlobular cases are the rarest, and the hardest to detect, especially when there is some lesion in the lung near by. Many a case of supposed chronic disease of the lung is merely an old interlobular pleuritis Serous pleuritis, of tuberculous nature, may have a characteristically localized pain, forking to correspond to the fissures, and the dyspnea is more intense than with pleurisy of the main cavity. A band of shadow, generally slanting across one side of the chest, but sometimes round or oval, is instructive, especially when one edge is slightly concave and the lower edge is more sharply defined than the upper. The displacement of the shadow with the roentgen tube at different angles is also instructive, and exploratory puncture is often decisive. With right interlobular pleurisy the fourth or fifth interspace, in the anterior axillary line, close to where the fissure forks, is the best point for puncture. When secondary to pneumonia or bronchitis, the small serous effusion is fleeting, but occasionally there is considerable effusion and it rapidly becomes purulent. When of tuberculous origin, the serous effusion never becomes purulent. Syphilitic pleurisy is retrospectively diagnosed by the negative findings and the rapid success of specific treatment. It must not be forgotten, however, that tuberculous pleurisy is essentially mild and heals spontaneously in a few weeks. Tuberculous pleurisy often occurs in the syphilitic. Serous interlobular pleurisy generally subsides without any special treatment, but it has been his impression that the salicylates hastened the cure. Subcutaneous injection of fluid from the effusion did not seem to display much effect. He knows of only two instances of a hemorrhagic interlobular pleurisy. When the effusion has become purulent, and the pneumococcus is the only bacterium found, puncture, repeated two or three times, may lead to a complete cure. If the effusion returns after the second or third puncture, operative measures should be considered. With purulent tuberculous pleurisy, thoracotomy always does harm, setting up secondary infection. Nothing should be attempted beyond evacuating punctures, local modifying injections and artificial pneumothorax. The prognosis is grave principally on account of the gravity of the primary lung process. In the discussion that followed, Bullrich described a case in which the encapsulated pleuritic fluid contained large quantities of cholesterin. These cholesterin cases are the ones that keep up interminably, the effusion recurring constantly, sometimes for years, but the general health keeps good. His experience with autoserotherapy has been favorable.

Ulcerative Colitis.—The writers present a study of the history, the clinical course and the outcome of ulcerative colitis. Vaccine therapy seems to be promising, they remark, and it should be given a trial in all chronic rebellious cases in which some specific micro-organism can be isolated, the typhoid or proteus bacillus, streptococcus, etc. Even if operative measures are applied, the vaccine is always a fundamental indication, unless there is cancer, tuberculosis or syphilis, or lesions in liver, heart or kidneys. They also warn against vaccine therapy during an acute exacerbation; it is liable then to aggravate the condition alarmingly. Ulcerative colitis is a form of infectious colitis for which any one or more of a number of factors may be responsible.

Interlobular Pleurisy in Children.—The prolonged course of the interlobular pleurisy in a girl of 8 and an infant of 18 months suggested its tuberculous nature, and the tuberculin test was strongly positive. Under general tonic and symptomatic treatment, clinical recovery ensued. No puncture was made.

Microbiology of the Spirochete of Syphilis.—Elizalde's long monograph is accompanied by nearly twenty pages of bibliography.

The Spermatozoa of Syphilitics.—The statements of Widacowich in regard to the unusual proportion of deformed spermatozoa in the sperma of syphilitics have already been mentioned in these columns. He found from one to four heads and from one to four tails in a surprisingly large percentage of specimens of syphilitic semen. "If syphilis can modify thus the reproductive elements in a visible way, it is logical to assume that along with these appreciable anomalies there may be invisible molecular changes." This would explain the small number that are normal of the children of syphilitic parents. The spirochete may or may not be present in the offspring. When it is not present, it is a waste of efforts to give the children specific treatment merely because they present certain bone, teeth or other anomalies showing the influence on the growth of the parental syphilis. Specific treatment is useless and does only harm in such cases.

Tumors of the Pancreas.—In the first of Rivarola's two cases the man of 45 presented symptoms suggesting cancer of the head of the pancreas, with gallstone obstruction. The gallbladder was united to the stomach, after removing a few cholesterin concretions, and complete recovery followed, permanent for ten years to date. The course was similar in a second case. They teach that a simple inflammatory tumor in the pancreas is liable to impose the diagnosis of cancer, and nothing but the subsidence of the tumor after an ample outlet for the bile has been provided, disproves the assumption of malignant disease. The inflammatory tumor usually leaves sclerosis in its wake. He has had 3 operative cases of a cystic tumor in the pancreas in children, and cites 12 other cases in Argentina, but all were in adults. The list includes only 3 men. During the development of the cyst the symptoms may suggest pancreatitis, actual pancreas colic, and there may be jaundice, intense headache, salivation, glycosuria and lipuria. This phase does not last long, and the patient may then recover apparently complete health for months, until the discovery of a tumor or the reappearance of some of the symptoms calls for medical aid. Two other cases are described, one a pseudocyst in a man of 34, the other a traumatic cystadenoma in a boy of 9. Six liters of a clear fluid were evacuated from the cyst in the man and 500 c.c. from the child. In both cases the cyst was sutured to the skin. With a persisting fistula of the kind it may be necessary to give a special diet consisting of fat and protein, avoiding carbohydrates, and giving sodium bicarbonate. Two cases of hydatid cyst of the pancreas are also reported; the diagnosis had been made before the operation in one of them. n the discussion that followed, Arce reported 2 cases of hydatid cyst of the pancreas with persisting fistula and death rom recurring hemorrhages in the wound. Passeron related hat in one case of cystadenoma of the pancreas, the tumor was so movable it could be pushed from side to side and was afely enucleated; the gallbladder was removed at the same ime. Escudero has found the duodenal tube very useful n aiding in differentiation of pancreas disease.

Mishaps with Gastro-Enterostomy. — Escudero reports ome cases in which no benefit followed the gastro-nterostomy. In one the anticipated ulcer did not exist; in ome others, syphilitic disease of the stomach, nervous dys-epsia or aerophagia persisted unmodified by the gastro-nterostomy or developed after it. In others, the patients ailed to realize the necessity for care in the diet afterward. n another group the gastro-enterostomy itself was defective. n conclusion he urges resection rather than gastro-enteros-omy when conditions permit, wedge resection or gastrectomy.

Revista Española de Medicina y Cirugía, Barcelona

February, 1922, **5**, No. 44

Technic for Total Laryngectomy. R. Botey.—p. 61.
Therapeutic Dietetics. A. Arteaga Pereira.—p. 71. Cont'd.
Industrial Accidents. S. García-Tornel.—p. 78.

Technic for Total Laryngectomy.—Botey gives an illus-ated description of his technic for total laryngectomy by luck's method. The scarcity of lymphatic glands in this egion and the protection afforded by the larynx walls render he prognosis of a cancer strictly within the larynx excep-onally favorable, if the larynx can be removed, even when he growth is of several months' standing. Recurrence is ess liable in the vigorous elderly than in the young, and a reliminary tracheotomy is not necessary, but the teeth and owels must be in order, and the heart action kept under onstant supervision. His technic differs in several points om Gluck's. In about 25 per cent. the voice is excellent, ut in the others there is no pharyngeal voice. Most of them iscard sooner or later the phonetic devices provided. It is mystery why some can speak intelligibly and others not, in onditions apparently identical.

Industrial Accidents.—This is a detailed report of the cent Spanish congress on industrial accidents, the first of s kind. The address of the president, Dr. Oller, was titled "Medical Reforms necessary to introduce in the ll now pending on industrial accidents." A resolution was lopted to the effect that when an operation is necessary and armless, the injured workman should be given the choice submitting to the operation or relinquishing his claim for demnity. Another resolution referred to a conflict of opinion tween medical experts in cases involving workmen's com-nsation. In this case the workman should be examined by e local professor of surgery, a hospital surgeon and a sur-on member of the Academy of Medicine or, if not available, corresponding trio appointed by the local medical society. ne resolution stated that hernia and lumbago should not be nsidered as permanent disabilities.

Siglo Médico, Madrid

March 11, 1922, **69**, No. 3561

rotracted Epidemic Encephalitis. E. Fernández Sanz.—p. 253.
ongenital Luxation of Shoulder. J. Decref.—p. 256.
eloid Cicatrices. Sicilia.—p. 259.
he Kidney and Glycosurias. J. Caballero y Fernández,—p. 260. Conc'n.

Protracted Epidemic Encephalitis.—Fernández Sanz states at polymorphous encephalitis would be a better term, as the ultiplicity and variety of the symptoms induced is its main aracteristic. He quotes Hassin to the effect that all the fferent types of symptoms may be presented by the one tient in time. Fernández Sanz describes a case in a robust rmer of 31 apparently free from pathologic antecedents of y kind. Since March, 1920, he has had epidemic encepha-is, presenting a kaleidoscopic clinical picture of the eight rms of the disease, and this is still kept up. The tendency lethargy has been more constant than the other symptoms. was pronounced after the opening phase of violent delirium and agitation. Then came a phase of paresis, a phase of pains, and the existing parkinsonian phase.

Congenital Dislocation of the Shoulder.—Decref protests against the prevailing assumption that the inability to use the arm is the result of paralysis from injury of the brachial plexus during extraction of the child. This may explain some cases, but in the majority the trouble is actual dislocation of the shoulder, the humerus pulled out of place by the stretching of the capsule and ligaments. Treatment should be immobilization on a light splint to hold the arm in abduction and outward rotation. Even if there is paralysis from injury of the plexus, this can only gain from the procedure, while it is the only cure for dislocation. The mother soon learns to apply this ruler splint every day, after gentle manipulation of the shoulder, elbow and hand. When plexus paralysis is assumed, treatment is apt to be delayed and the crippling becomes more pronounced and harder to correct.

Kidney and Glycosurias.—This is the conclusion of Caballero's long study of this subject, presented as his graduation thesis. The special points he seeks to emphasize are the presence of sugar in normal urine, the large proportion of sugar in the renal artery, the small portion in the renal vein, the share of the kidney in experimental phlorhizin glycosuria, and the lesions in the kidney consecutive to glycosuria. The glucose reaching the kidney is partly destroyed, partly transformed into other bodies, and a small proportion is eliminated. Glycosuria occurs when an excessive amount is received or the kidney functioning is insufficient. This is liable to happen under various conditions and must not be confounded with diabetes.

Deutsche medizinische Wochenschrift, Berlin

March 10, 1922, **48**, No. 10

Parenteral Nonspecific Proteotherapy. R. Stintzing—p. 311.
Material Basis for Functional Superiority of the Left Cerebral Hemisphere. Förtig.—p. 312.
Detoxicating Effect of a Secretin Solution, Derived from Spinach, on Strophanthin. K. Miyadera.—p. 313.
Distribution of Leukocytes in the Blood Stream. Stahl.—p. 314.
Vein-to-Vein Transfusion in Surgical Cases. Hempel.—p. 316.
Etiology of Köhler's Disease. W. Baensch.—p. 318.
Poisoning from Barium Preparations in Roentgen Examinations. P. Krause.—p. 319.
Eunuchoidism in Rabbits with Spermatozoa in the Vas Deferens and Underdeveloped Interstitial Cells. Lipschütz, Bormann and Wagner.—p. 320.
Personal Prophylaxis to Prevent Infection from and of Prostitutes. R. Habermann.—p. 322.
A Quick, Clean and Reliable Method of Testing the Stool for Occult Blood. R. Weiss.—p. 323.
Euresol to Ward Off Mosquitoes. Klein.—p. 324.
Pathologic Relations of Female Genitalia and Adjacent Organs. Liepmann.—p. 324.

April 14, 1922, **48**, No. 15

*Diabetes and Balneology. O. Minkowski.—p. 475.
Radiothorium and Its Therapeutic Application. P. Lazarus.—p. 477. Conc'n.
*Cancer Therapy. J. Wetterer.—p. 480.
Lymphogranulomatosis. H. von Hecker and W. Fischer.—p. 482.
A Benign Pancreatic Tumor. E. Heymann.—p. 484.
Treatment of Tuberculosis with Colloidal Gold. G. Schellenberg.—p. 487.
Two Cases of Zinc Poisoning. R. Engelsmann.—p. 488.
Swine Erysipelas Contracted from Cadaver. Esau.—p. 489.
Intracranial Traumatic Hemorrhages. G. Ledderhose.—p. 489.
Course in Venerologic Technic: Syphilis. M. Joseph.—p. 491.

Mechanism of Diabetes.—Minkowski, in considering the disturbance of metabolism in diabetes, takes up the much discussed problem as to whether such disturbance is due to an overloading of the organism with sugar as the result of increased production or from defective utilization of sugar. While an exponent of the theory of a disturbance in the utilization of sugar, he has never contended that there may not be also an increased production of sugar in diabetes. He emphasizes, that an increased production of sugar cannot of itself explain the processes that take place in diabetes—that the assumption of a disturbance in sugar utilization is imperative; furthermore, that this disturbance must be traced back to the impairment of some essential pancreatic function. This disturbance of pancreatic function is, he believes, inherent in all cases of true diabetes mellitus. He rejects the idea that this disturbed pancreatic functioning results solely in an unrestrained production of sugar, brought about, it is said, by the breakdown of the inhibiting influence of the pancreas on the action of epinephrin in the liver. He still holds that the pancreatic disturbance consists in the interruption of some positive duty that the pancreas is supposed to perform in the utilization of sugar.

Cancer Therapy.—Wetterer has for many years supported the theory that the blood of persons who have been cured of cancer, either through operation or by irradiation, contains carcinoma-destroying substances, and that such substances, if introduced into the blood stream of carcinoma patients, would have therapeutic value in combating the cancer. He also assumed that, since cancer is, as a rule, an affection of persons past middle life, the blood of younger persons must contain especially large quantities of the substances that inhibit the growth of carcinoma. Therefore, he reached the conclusion that by injecting the blood serum of youthful persons into the veins of carcinoma patients a therapeutic effect could be secured. Strictly homogenous serum is less likely to cause untoward by-effects than heterogenous serum. Therefore, he employed in his experiments the serum of children or grandchildren. He reports good therapeutic results in two cases. One case was that of a woman, aged 68, with a large, deep-seated skin cancer in the right temporal region, the bone having already become involved. Roentgen irradiation had proved unavailing and was abandoned for fear further irradiation might cause necrosis of the bone. Accordingly, an intravenous injection of serum derived from the 14 year old granddaughter of the patient was administered. In addition, stimulative irradiation of the spleen, the thymus and the underlying bones was applied. The third day following the injection of serum the erythrocyte count rose by 750,000 to around 4,000,000; likewise, the hemoglobin content improved. A week later, a second injection was given, the irradiation being omitted, whereupon the erythrocyte count became normal. After two further injections, the patient gained in weight and her general health was better. The carcinoma retrogressed; the previously profusely discharging tumor dried up, and a large portion healed over, leaving a good scar. The second case was that of a man, 66 years old, with an inoperable carcinoma of the stomach. His general condition was very bad. He was given an intravenous injection of blood serum derived from his daughter, aged 21, plus stimulative irradiation of the spleen, thymus and bones, and deep roentgen irradiation of the tumor. Following the injection, a marked increase of erythrocytes was noted. At the end of a week, the erythrocyte count became normal. After the second injection, the tumor became much smaller and the general health had improved. An increase in weight of more than 5 pounds was noted. Shortly after the fourth injection, the tumor was no longer palpable. At the last examination of the patient, his general condition was good and the gain in weight amounted to 11 pounds. It remains to be seen, Wetterer says, whether such results will be constant and whether other physicians will, after investigation, confirm them. Wetterer states that his method is being tried out in several large hospitals.

Klinische Wochenschrift, Berlin

Jan. 28, 1922, **1**, No. 5

Psychology in Relation to Psychiatry. O. Bumke.—p. 201.
The Body's Natural Means of Defense Against Syphilitic Infection; How Affected by Mercury. S. Bergel.—p. 204.
Arsphenamin Death with Cerebral Symptoms. Henneberg.—p. 207.
Therapeutic Value of Bulbus Scillae. J. Markwalder.—p. 212.
Serotherapy and Chemotherapy of Otogenous and Rhinogenous Meningitis. O. Fleischmann.—p. 217.
*Test Glycosuria as Early Sign of Pregnancy. R. Roubitschek.—p. 220.
Treatment of Abortion. G. Siefart.—p. 221.
Saprophytism and Parasitism in Bacteria. K. Kojima.—p. 221.
Pathogenesis of Infantile Tetany. Freudenberg and György.—p. 222.
Anaphylaxis in Isolated Organs of Frogs. M. Kochmann and P. Schmidt.—p. 222.
Treatment of Early Syphilis. G. A. Rost.—p. 223. Conc'n.
Prophylaxis of Diphtheria. K. Kassowitz and B. Schick.—p. 225.
Selection of Tuberculous Patients for Institutional Treatment. H. Ulrici.—p. 227.

Test Glycosuria in Pregnancy.—Roubitschek has the woman drink, fasting, 200 c.c. of tea with 10 gm. of glucose. Then in twenty minutes a subcutaneous injection of 0.5 c.c. of a 1 : 1000 solution of epinephrin is given. Sugar appeared in the urine thereafter in twenty pregnant women, some only six or five weeks since the last menstruation. The blood sugar content averaged 0.15 per cent. when the glycosuria appeared. He styles this a simple and rapid test for early pregnancy.

Medizinische Klinik, Berlin

March 12, 1922, **18**, No. 11

Psychanalysis and Medicine. A. Mäder.—p. 329.
*The Hemoclastic Crisis a Sign of Vagotonia. F. Glaser.—p. 331.
*Pathologic Relations Between Stomach and Heart. L. Roemheld.—p. 334.
Transverse Tracheotomy. A. Bingel.—p. 337.
Hydrotherapy in the Home. P. Groag.—p. 338.
Loss of Weight at Close of Pregnancy. L. Nebel.—p. 339.
Case of Febrile Syphilitic Meningitis. Bock.—p. 340.
Angiosclerotic Intestinal Dyspragia. P. Heilmann.—p. 342.
Treatment of Abortion in the Home. Pentz.—p. 343.
Some Practical Obstetric Questions. E. Runge.—p. 346. Conc'n.

The Hemoclastic Crisis a Sign of Vagotonia. — Glaser states that the vagus system predominates in the young and the sympathetic in the elderly. A child with pronounced sympatheticotonia is as rare as an elderly person with vagotonia. The latter is physiologic in children, and the drop in the number of leukocytes after ingestion of a glass of milk —the hemoclastic crisis—is a manifestation of the vagotonia, as also in persons with liver disease. With this there is retention of bile acids, and the bile acids irritate the vagus and induce vagus reflexes. The alimentary leukopenia in children and in adult vagotonia subjects can be transformed into alimentary leukocytosis by epinephrin and atropin—convincing proof of the juvenile physiologic vagotonia. It possibly has some connection with the hypothetic internal secretion of the thymus in children and of the genital glands in adults. Vagotonia induced by pilocarpin responds with leukopenia to the ingestion of the glass of milk, the same as natural vagotonia. Among certain practical points brought out is that vagotonic exophthalmic goiter subjects are exceptionally predisposed to anesthesia fatalities. Hence it is important to test them for the abdominal vagus reflex before attempting to operate on them.

Pathologic Relations Between Stomach and Heart.—Roemheld discusses here one special field of gastrocardiac disturbances, the heart disturbances with dyspepsia of the subacid and anacid type. Romberg recently stated that in 463 private patients consulting him for heart disturbances, forty-four were of this gastrocardiac type. Treatment of the heart disturbances does little good. Not until the dyspepsia is properly treated is benefit apparent. When the heart disease is the primary disturbance, the stasis gastritis may be the first sign of trouble, and the stomach may return to normal when the heart gets the needed aid in treatment. The stomach and the heart are separated only by the thin diaphragm so they may suffer in unison, particularly as they are both innervated by the same nerve. The anacid stomach is a restless neighbor; even when empty the hypermobility may keep up. The excessive motor functioning and the weakness from the overhasty emptying of the stomach may induce discomfort which is usually ascribed to the heart region rather than the stomach. The heart suffers particularly when the stomach is distended with air.

Münchener medizinische Wochenschrift, Munich

March 3, 1922, **69**, No. 9

Postoperative Peritoneal Adhesions. H. Martius.—p. 299.
Pathologic Anatomy of the Brain in Relation to Psychiatry. B. Klarfeld.—p. 302.
Esophagoplasty; Methods and Results. P. Frangenheim.—p. 303.
Roentgen Irradiation in Bronchial Asthma. F. Klewitz.—p. 305.
Iodin in Prophylaxis of Influenza. E. Stettner.—p. 306.
The Skin in Relation to Tuberculosis Immunity. W. Böhme.—p. 306.
Treatment of Abortion. M. Samuel.—p. 308.
Intracardiac Injections of Epinephrin in Heart Failure in Infants During Anesthesia. C. Bliedung.—p. 309.
Intravenous Injection of Camphor in Infants. R. Schelcher.—p. 310.
Specific Therapy and Prophylaxis of Yellow Fever. Olpp.—p. 311.
Physician's Observation of War Neurosis in Self. Ambold.—p. 311.
Nocturnal Cramps in Calf of Leg. K. Ochsenius.—p. 312.
Treatment and Prognosis of Acute Otitis Media. Scheibe.—p. 315.

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Function of the Cortex of Suprarenals. R. Stephan.—p. 339.
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Securing of Contents of Small Intestine. Ganter.—p. 347.
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Treatment of Septic Abortion. L. Handorn.—p. 350.
My Experiences with Neo-Silver-Arsphenamin. E. Galewsky.—p. 352.
Enrichment for Bacteria in Human Urine. Huntemüller.—p. 353.
Use of Aluminum Strings in Cardiographic Work. A. Weber.—p. 356.
Diagnosis and Treatment of Empyema of the Mastoid Cells in Acute Otitis Media. Scheibe.—p. 358.

Wiener klinische Wochenschrift, Vienna

Feb. 23, 1922, **35**, No. 8

- *Bacteriophagia. Bail and Watanabe.—p 169.
- Method of Separating Out Human Leukocytes. Starlinger.—p. 172.
- *Nonspecific Wassermann and Meinicke Reactions. K. Bauer.—p. 173.
- Diagnosis of Volvulus of the Cecum. H. Lehmann.—p. 175.
- Succinic Acid in the Cyst Contents of a Glioma. Corvin.—p. 178.
- Ascariasis of the Biliary Ducts. A. Neudörfer.—p. 179.
- Tuberculin Treatment in Extensive Lupus. W. Böhme.—p. 180. Reply. —M. Strassberg.—p. 181.
- *The Cancer Questionnaire. S. Peller.—p. 182. Conc'n.
- Medical Conditions in Soviet Russia. Pappenheim.—p. 185. Cont'd.

March 2, 1922, **35**, No. 9

- Tuberculin in Treatment of Eye Disease. J. Meller.—p. 193.
- Tuberculosis of the Eye and Specific Treatment by the General Practitioner. E. Nowak.—p. 194.
- Diagnosis and Therapy of Flatfoot. S. Romich.—p. 195.
- Praeputium Clitoridis and Gonococcal Infection. E. Clodi and K. I. Schopper.—p. 197.
- Eye Injuries and Determination of Compensation. Hanke.—p. 199.

Mixed Bacteriophagi.—Bail and Watanabe refer to their ecent report that careful examination of a Shiga bacterio- hagus showed that it was composed of two different "par- ial" bacteriophagi, one of which produced large holes or ings on the agar plate and the other small (sometimes tiny) oles. Further investigations reveal that besides these two partial" bacteriophagi they have discovered a third which characterized by rings of medium size on the Shiga plate; ere may also be combinations of these three types, which resent accordingly still different characteristics.

Positive, Nonspecific Wassermann and Meinicke Reactions ollowing Digitalis Therapy.—Bauer reports several cases show that through the effects of digitalis medication nega- ve Wassermann and Meinicke reactions may become posi- ve though there is no syphilitic infection. Blood for the Vassermann or Meinicke test should be taken only when the atient is not under the influence of previous medication.

Analysis of Replies to Questionnaire Sent Out by the ustrian Society for Cancer Research and Control.—Peller grets that only 389 physicians, or less than 10 per cent. of e number addressed, returned replies to the questionnaire, hich covered sixteen points pertaining to cancerous growths. hile some physicians reported an increased morbidity or increased mortality in certain houses or in certain streets localities, the evidence was not conclusive that these con- tions were not due to chance. As to an increased mor- lity in certain industries and among certain professions, ost physicians denied any such connection; others stated at innkeepers, physicians, chimney sweeps, the rural pop- ation and merchants were especially affected. There were any reports of families in which all the brothers and sisters ere affected. Cancer à deux, occurring in both husband d wife, was reported in several instances but not frequently ough to prove contagion. Nothing new was brought out ith respect to the effects of soil, nutrition, habits of living, redity and transmission. Of 2,070 cases of carcinoma men in the Eiselsberg clinic, 9.3 per cent. were under 40; per cent. under 30, and all were past 20. Of 1,600 cases women in the same institution, 14.8 per cent. were under ; 2.8 per cent. were under 30, and there were two cases der 20.

There were many instances in which previously benign owths had, after various periods, become malignant. Many ported that they had seldom found carcinoma in tuber- lous persons. Some found that carcinoma was favored by philis, alcoholism and emotional strain. Others incrim- ate disturbances of the endocrine system. One Vienna ysician had found Jews more disposed to cancer than other habitants. In 2,000 cases of carcinoma of the female gen- l organs only 7 per cent. were virgins, but many physi- ns denied that there was any connection between rcinoma and sexual conditions. Febrile diseases, espe- lly erysipelas, were said by many to have had a favorable luence on carcinoma. Others had noted bad effects from er. In many cases anemia and cachexia were the first ns of the existence of carcinoma. As to the good effects operation, the replies, on the whole, betrayed a pessimistic e. However, of 2,000 carcinoma colli cases coming to operation, 38 per cent. had not recidivated during periods of five years and longer. In another series of 20, three patients are still living after 10, 12 and 24 years, respectively. Many physicians speak of a great difference in the virulence of carcinomas, and state that enduring results depend greatly on this factor.

Zentralblatt für Chirurgie, Leipzig

Jan. 21, 1922, **49**, No. 3

- *Fate of Sutured Tendons. A. Salomon.—p. 74.
- Mesenteric Cyst Containing Milky Fluid. A. Candea.—p. 77.
- *Treatment of Volvulus of Sigmoid Flexure. Gussew.—p. 78.
- Wide Clamps for Operations on the Intestine. V. E. Mertens.—p. 79.
- Operation for Harelip and Cleft Palate. R. Milner.—p. 80.

Fate of Sutured Tendons.—Salomon points out that the functional prognosis of tendon sutures is far from being as favorable as the textbooks would lead us to suppose. The functional results for the extensor tendons are much better than for the flexor tendons. Hägler figured for the extensor tendons a complete cure in 77 per cent. of the cases; for the flexor tendons only in 46 per cent. According to Volkmann, the prognosis for the flexor tendons of the fingers and the palm of the hand is exceedingly unfavorable. This coincides with Bier's personal observations. As the cause for the bad results with tendon sutures, especially on the flexor side, adhesions of the tendon with its sheath and the surrounding soft parts are usually cited. To prevent such adhesions, systematic exercise of the sutured tendon as soon as possible after the suture was advocated. But the tearing out of the suture in two cases in Bier's service led to the discontinuance of this practice, and even cautious movements are not begun now until a week after the wound has healed. According to Bier's investigations, early movements have not materially improved the situation. In flexor sutures, Bier found good results in only 20 per cent. Analysis showed that these were all cases in which the sutured region of the tendon was not shut up tight in its sheath. Salomon, therefore, proposes that in the region of the suture a considerable portion of the sheath be removed, so that the surrounding tissues can be utilized to bring about a firmer union of the stump ends. Experiments on animals invariably confirmed the solid union that resulted when the tendon suture was thus left open and not imprisoned in its sheath. Fixation of the fingers in a strongly flexed position, as often done in connection with flexor tendon sutures, should be avoided, he thinks, as it tends to produce contracture.

Treatment of Volvulus of the Sigmoid Flexure.—Gussew discusses the unsatisfactory features of the common methods employed to prevent the recurrence of volvulus of the sigmoid flexure; sigmoidopexy, sigmoido-anastomosis and resection of the flexure. Sigmoidopexy is seldom effective; he has often noted that the bowel worked loose and the volvulus recurred. The same thing is true, in part, of the anastomoses. Gussew describes a fourth method which was first introduced by Grekow, and has been tried out by several surgeons in recent years. The method consists in invagination of the redundant bowel. The mesosigmoid at the base of the flexure is detached and resected. A rubber tube is introduced through the rectum as far as the apex of the portion of the intestine to be invaginated. The bowel is then tied to the upper end of the tube and is drawn down with it and out through the anus as the tube is withdrawn. At the base the invagination is secured by a few seroserosa sutures. The invaginated portion of the intestine necroses and is cast off. The writer thinks the method is adapted to a considerable number of cases, even when the intestine is gangrenous.

Jan. 28, 1922, **49**, No. 4

- *Gastropexy Before Irradiation of Carcinoma. E. Kreuter.—p. 106.
- Resection or Gastro-Enterostomy in Gastric Ulcer Distant from Pylorus. J. Dubs.—p. 108.
- Fibroma in Appendectomy Scar. A. Cahn.—p. 110.
- *Maneuver to Demonstrate Gravity Abscess. Elsner.—p. 111.
- Transient Compression of Carotid Artery as Aid in Operating Cerebral Abscess. O. Muck.—p. 112.
- "Suprarenalectomy in Epilepsy." H. Fischer.—p. 113.
- "A Peculiar Metatarsal Affection." E. Jacobsen.—p. 116.
- Tetanus. E. Schultze.—p. 118.
- Management of Stump in Goiter Operations. H. Flörcken.—p. 120.

Gastropexy Preliminary to Roentgen Irradiation of Carcinoma of the Stomach.—Kreuter utilizes the round ligament of the liver to draw up and fasten inoperable carcinomas close to the umbilicus and thus immobilize and make them more accessible for roentgen irradiation. A portion of the gastric wall can be folded over the ligament. Kreuter has applied this method in four cases, and he thinks the prospects are more favorable than when the tumor is sutured into the abdominal wound.

Maneuver to Demonstrate Gravity Abscess in Abdomen.—Elsner has found that in endeavoring to locate a gravity abscess in a child, he can best overcome restlessness in the patient or undue tension of the abdominal walls by allowing the subject to assume the knee-elbow position during the examination.

Zentralblatt für Gynäkologie, Leipzig

Jan. 21, 1922, **46**, No. 3

Development of Myoma After Transplantation of Ovaries. C. Fleischmann.—p. 82.
Roentgen Irradiation of Fibroma in Two Sittings. Driessen.—p. 83.
The Place of Suggestion in Gynecology. B. Liegner.—p. 89.
*Diphtheria Bacilli in Vagina. F. Lönne and P. Schugt.—p. 93.
*Indications for Ventrifixation. H. Doerfler.—p. 95.

The Occurrence of Diphtheria Bacilli in the Vagina.—Lönne and Schugt refer to recent reports that diphtheria bacilli were found in from 14 to 23 per cent. of the vaginal secretions examined. The writers examined 209 vaginal smears for diphtheria bacilli, including 58 healthy gravidae, and 30 cases of retroflexion, or dysmenorrhea prolapse, oophoritis or adnexitis. In none of the cases were they able to discover genuine diphtheria bacilli, although spurious diphtheria bacilli were found in 45 per cent. of the smears.

Indications for Ventrifixation.—Doerfler refers to statements that all forms of ventrifixation are reprehensible. He takes the opposite stand, holding that ventrifixation is today an absolutely indispensable operation, which has shown its great value in many ways. He thinks that the Alexander-Adams method should be given up for a less dangerous and more certain method. For twenty years he has used a method which resembles somewhat the Doléris method but which takes better account of the anatomic relations and does away with the danger of ileus. He describes his method in detail. The round ligament is drawn through a slit in the fascia, muscle and peritoneum, the slit in the fascia being about 1 cm. inside and a little below the inguinal ring. The loop drawn out is about 1 or 1.5 cm. long, and it is sutured to the slit in the fascia and to the fascia below to distribute the traction. Each round ligament is thus brought out and sutured, the loops symmetrical so that the uterus will be held horizontal, without special strain, and swinging freely. The round ligaments preserve almost exactly their normal direction; there is no vacant space into which an intestinal loop can slip and lead to ileus. Recurrence is almost impossible, and the fixation of the uterus in an almost normal position gives better results than the Alexander-Adams or any other method, while the ligaments can be shortened more or less according to needs. He gives also what he regards as the indications for the operation.

Jan. 28, 1922, **46**, No. 4

*Intracranial Hemorrhage in New-Born. M. Henkel.—p. 129.
*Pregnancy After Bilateral Adnexitis. J. Arnold.—p. 139.
*Glucose to Promote Labor. M. Müller.—p. 140.
Comment on Sachs "Extraction of After-Coming Head of Dead Infant." W. Sigwart.—p. 144.
The Fourth Maneuver. H. Baumm.—p. 145.
Cullen's "Discoloration of Umbilical Region as Sign of Ruptured Extra-Uterine Pregnancy." H. Hellendall.—p. 147.

Asphyxia in Relation to Intracranial Hemorrhage in the New-Born.—Henkel states that in a series of 12 cases of intracranial hemorrhage in infants, aside from three forceps cases, there was only one, or, if we count also the case in which rupture of the uterus occurred, two cases in which trauma could be shown to have been associated with the intracranial hemorrhage. In all the other cases he could find no cause for the intracranial hemorrhage other than asphyxia. This supposition, he thinks, gains further support by the fact that at necropsy in cases of asphyxia in which there was no intracranial hemorrhage, minute hemorrhages in heart muscle and endocardium were observed. If asphyxia is actually the cause of intracranial hemorrhages, an otherwise remediable asphyxia might become fatal. This opens up important therapeutic possibilities. Since his cases have shown that trauma from the use of forceps must not be exaggerated as the cause of intracranial hemorrhages, and other injury of mother and child, he raises the question as to whether we should not more frequently use the forceps to prevent intracranial hemorrhages induced by the asphyxia. The use of the forceps would apply only to cases in which asphyxia occurs during the last stage of birth.

Pregnancy Following Severe Bilateral Adnexitis.—Arnold reports an unusual case in which a patient became pregnant and gave birth to a living child five years after a severe bilateral adnexitis, which was treated conservatively.

Glucose to Promote Labor Pains.—Müller reports, on the basis of clinical observations, that glucose, administered intravenously in a from 40 to 50 per cent. solution, in 10 c.c. doses, is a good remedy to promote labor contractions, especially when the patient is suffering from weakness due to labor.

Zentralblatt für innere Medizin, Leipzig

Jan. 21, 1922, **43**, No. 3

Indications That Acute Diffuse Glomerulonephritis Is a Primary Diffuse Vascular Affection. E. Kylin.—p. 41. Conc'n No. 4, p. 65.

Acta Medica Scandinavica, Stockholm

Feb. 16, 1922, **56**, No. 1

*Roentgen-Ray Diagnosis of Gout. H. Jansen.—p. 1.
*"Functional" Paralysis of the Arm. G. H. Monrad-Krohn.—p. 9.
*Pathogenesis of Auricular Fibrillation. G. Fløystrup.—p. 12.
*Internal Secretion Between Mother and Fetus. A. Tanberg.—p. 33.
*Improved Technic for Colorimetry. H. C. Gram.—p. 52.
General Mechanism of Respiratory Movements. H. Gertz.—p. 71.

Unusual Case of Chronic Gout.—Both hands of the man of 47 showed spongy enlargement of the finger joints with edema of the back of the hand. These disturbances had begun at the age of 19. There was no fever, no enlargement of glands, and nothing to suggest gout at any other point, or arthritis deformans, syphilis, tuberculosis or cancer. The wrist was as large as the forearm, and the ulna and radius could be easily pried apart. Palpation was not painful, and one elbow was also thickened. The roentgen rays showed circular clear patches surrounded by a darker margin in the thickened bones—actual urate tophi in the bone. Jansen found similar evidence of bone tophi in a second case. The urate gout had attacked the hands also but there were other manifestations. (In English.)

"Functional" Paralysis of the Arm.—Krohn discusses the function of the latissimus dorsi muscle, and describes some tests which prove a functional dissociation of the action of this muscle when the alleged paralysis of the arm is of neurotic, hysteric or hypnotic origin or is factitious. (In English.)

Pathogenesis of Auricular Fibrillation.—Fløystrup has been making a special study of the heart after death from auricular fibrillation. In nine of the twenty-eight cases he examined the hearts himself; the others are from the literature. In every instance the auricles had to work against absolutely or relatively increased resistance. This suggests that overworking, fatigue and exhaustion are what entail fibrillation of the auricle. Transient fibrillation is another thing. This may occur suddenly without any disease of the heart or evident occasion for the arrhythmia, or as a nervous palpitation from fright, and it may be induced in curarized dogs by synchronous irritation of the vagus and sympathetic nerves. (In English.)

Internal Secretion Between Mother and Fetus.—In this analysis of the interaction between the endocrine systems of mother and fetus, Tanberg lays great stress on the mother's diet. This can be studied experimentally. In all probability, he asserts, internal secretion is influenced to a high degree by the composition of the diet. (In English.)

Improved Technic for Colorimetry.—Gram comments on the successive darkening of acid hematin by the colorimetric method of Autenrieth, and explains how to prevent it. This can be accomplished by adding 2 per cent. hydrogen peroxid to the diluting fluid. (In English.)

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HYDATIDIFORM MOLE AND CHORIO-EPITHELIOMA

A CLINICAL AND PATHOLOGIC STUDY *

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No group of neoplasms is more interesting than that represented by hydatidiform mole and chorio-epithelioma. When one considers that even the normal chorionic epithelium possesses distinctly invasive qualities, one can appreciate the difficulties inherent in the study of the various types of new growth which may spring from this epithelium. This field, perhaps more than any other in pathology, illustrates the inter-relationship of a perverted physiology and an abnormal histologic structure. Its study means much more than the study of mere histologic details, and it carries one far afield into the domains of embryology, pathology, physiology and even endocrinology. The solution of such a problem as this is certain to throw a great light on the problem of tumor formation in general.

INCIDENCE

Until recently, hydatidiform mole has been looked on as an exceedingly rare affection. Statistics on the point exhibit wide variations. Essen-Möller, for example, gives the incidence as 3 per thousand, while Madam Boivin considered it far more rare, occurring only once in 20,000 cases. Williamson gives an incidence of 1 in 2,400 cases. Pozzi is quoted as having stated that he had never, in an experience of more than 5,000 cases, encountered a case of hydatidiform mole. Meyer [12] calls attention to the overlooked investigations of Gierse,[13] in 1847, who found that the characteristic changes of hydatidiform disease are found in many abortions and, indeed, constitute a most common cause of abortion in the early months. Gierse believes that hydatidiform degeneration is an extremely common ondition in spite of the rarity of the full-blown form of the disease to which authors have usually confined heir attention. Storch,[14] in 1878, likewise emphasized the frequency of hydatidiform disease in early pregnancy. Meyer urges that the cases of hydatidiform degeneration reported in the literature are merely end-results of a process, which, in its early stages, is a common cause of early fetal death. He estimates the incidence of these earlier forms of the disease among the fetuses in the Mall collection, including some of the specimens classed as normal, as 10.9 per cent. among the uterine specimens and 20.8 per cent. among the tubal. He estimates, tentatively, that as many as from 4 to 10 per cent. of all conceptions end in hydatidiform degeneration. These figures are rather startling, for they indicate an incidence fully 240 times as great as that given by Williamson, and 33.3 times as great as that given by Essen-Möller.

In view of the relationship between hydatidiform mole and chorio-epithelioma, it is not surprising that statistics indicate a close correspondence as to the age incidence in the two conditions. The average age of patients with chorio-epithelioma, according to Teacher, is 33 years. Of 169 cases, six occurred between 17 and 20 years; seventy-three between 21 and 30; fifty-four from 31 to 40; twenty-eight from 41 to 50, and nine from 51 to 55. The same author gives the following figures with regard to the nature of the preceding pregnancy, based on 188 cases: Seventy-four occurred after hydatidiform mole; fifty-eight after abortion; forty-nine after full-term labors, and seven tubal or ovarian. Teacher very wisely adds that some of the so-called "abortions" probably represented only the throwing off of masses of blood clot or necrotic tissue, so that the proportion of cases following full-time labor is probably greater than is indicated by the foregoing figures.

In a study of 240 cases, Hitschmann and Cristofoletti [17] found that 116 followed mole (48 per cent.); seventy-three followed abortion (30.4 per cent.), and fifty-one followed normal delivery (21 per cent.). Teacher, from a study of 188 cases, showed that seventy-three, or 36.6 per cent., developed after hydatidiform mole; fifty-nine, or 31 per cent., after abortion; forty-nine, or 28 per cent., after labor at or near term, and seven, or 4.4 per cent., following extra-uterine gestation. The figures usually given by other writers on the subject likewise indicate that something like 50 per cent. of all cases of chorio-epithelioma follow hydatidiform mole. There is no reason to feel that this proportion has been overestimated.

On the other hand, I am strongly inclined to the opinion that the statistics to be found in the literature exaggerate the frequency with which hydatidiform moles become chorio-epitheliomatous. Hitschmann and

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* From the Gynecological Department of Johns Hopkins Medical chool.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Obstetrics, Gynecology and Abdominal urgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[12] Meyer: Hydatidiform Degeneration in Uterine Pregnancy. Contributions to Embryology, Carnegie Institute of Washington **12**: 203, 921.

[13] Gierse, August: Ueber die Krankheiten des Eies und der Placenta, Verhandl. d. Gesellsch. f. Geb. **2**, 1847.

[14] Storch: Fälle von sog. partiellen Myxom der Placenta, Virchows Arch. f. path. Anat. **72**: 582, 1878.

[17] Hitschmann and Cristofoletti: Zur Pathologie und Klinik des malignen Chorionepithelioms, Wien. klin. Wchnschr. **24**: 655, 1911.

Cristofoletti found, in the study of 200 moles, that fifteen became malignant. Teacher is inclined to believe that the proportion given by Hitschmann and Cristofoletti, i. e., 7.5 per cent., is too high, because the series included fifteen cases recorded by Krömer, in which the diagnosis of malignancy was open to criticism. The subtraction of this group would give a proportion of 5 per cent. in which malignancy supervened after hydatidiform mole, and even this figure, Teacher feels, is perhaps too high.

It is difficult to explain such figures as those collected by Findley,[18] who found that malignancy supervened in fully 26.2 per cent. of 500 cases, except on the assumption that his group contained an overwhelming proportion of very advanced and doubtful cases. In nineteen cases from the Mall collection, none was reported to have developed malignant changes. My own series of eight cases also presents a clear record in this respect. When one considers, on the one hand, the frequency with which cases of hydatidiform mole are overlooked or not reported, and, on the other hand, the relative rarity of chorio-epitheliomatous disease, it seems certain that the proportion of cases of mole followed by malignancy must be very much smaller than has been supposed. Furthermore, if the very great frequency of early hydatidiform degeneration be established, the proportion will be a very small figure, probably only a small fraction of 1 per cent. Up to 1917, Vineberg [19] was able to compile 533 cases of chorio-epithelioma from the literature.

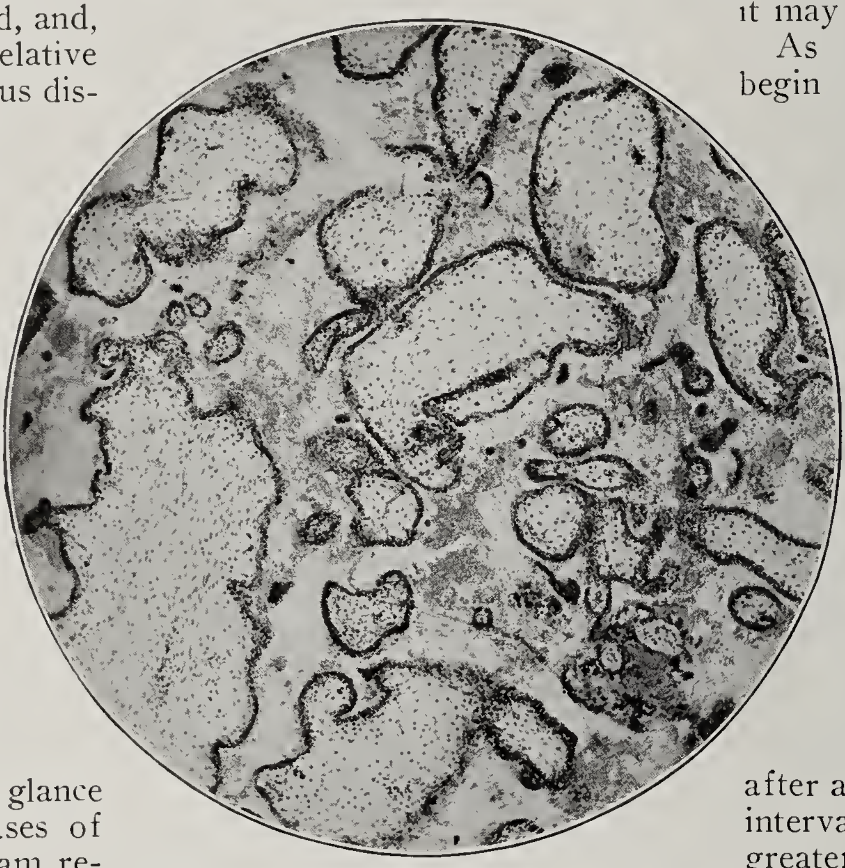

Fig. 1.—Normal chorionic villi of early pregnancy. The stromal blood vessels are clearly seen here and there. Note also the two layers of the trophoblast and the numerous syncytial giant cells (normal).

SYMPTOMS

Hydatidiform Mole.—A glance over the histories of the cases of hydatidiform mole which I am reporting in this paper will show a striking similarity in the symptoms, and the same uniformity is noted in the vast majority of the cases reported in the literature. The characteristic clinical picture is, briefly, the occurrence of bleeding in early pregnancy, associated with a uterus which is disproportionately large for the supposed stage of pregnancy. It is not uncommon, for example, to find a uterus enlarged to the level of the umbilicus at the third month of pregnancy. It is true that in a small proportion of cases, especially of the incomplete variety, the uterus may show little or no enlargement. At times the organ may even be smaller than expected, although I am convinced that most of these are cases in which portions of the mole had previously been expelled without the patient's knowledge.

The bleeding, as has already been mentioned, puts in its appearance early in pregnancy, usually in the second or third month. It is more or less continuous, and may be very profuse, so that the patient often becomes very anemic and at times almost exsanguinated. There is little or no complaint of pain in most cases, although some discomfort may be caused by the expulsion of clots or molar particles.

Chorio-Epithelioma.—Here likewise the most constant symptom is uterine hemorrhage. In some cases it follows almost immediately after the termination of the pregnancy, or occurs during the pregnancy itself. According to Teacher, fifty-four of 107 cases showed bleeding during pregnancy, or within fourteen days after its termination; of the remainder, thirty-five exhibited bleeding within a month, while in only eight was this symptom delayed more than a year. In the latter group, as Teacher adds, it is difficult to rule out the possibility of a fresh pregnancy in the meantime. Bleeding is not by any means an invariable symptom in the earlier stages of the disease, and even amenorrhea may occur, as in the case of Caturani. As with hydatidiform mole, bleeding may be very moderate, or it may be alarming in degree.

As soon as necrotic changes begin in the tumor and this is usually quite early — an offensive vaginal discharge makes its appearance. This is likely to be thin and watery in consistency, and of brownish or bloody appearance. In the last stages this discharge is often indescribably fetid, as in Case 10 of my series.

According to Williams, the first indication of the tumor in more than one half of the cases is the appearance of vulvar or vaginal metastases. In his own case, such a growth appeared within a week after a full-term labor, although the interval is usually considerably greater. These growths are situated most frequently on the anterior vaginal wall, and have a rather characteristic dark bluish, varix-like appearance. Another clinical manifestation of dissemination of the growth is the occurrence of hemoptysis, indicating pulmonary metastasis, a frequent occurrence. I may add, however, that I have observed hemoptysis five days after curetting of the uterus for simple hydatidiform mole. In this case there has been no recurrence of unfavorable symptoms after two years, during which time the woman has passed through a perfectly normal pregnancy and confinement. The later stages of the disease are marked by progressive weakness, anemia, rigors, emaciation, and gradually increasing pelvic pain.

PATHOLOGY

Two facts are worthy of preliminary emphasis in discussing the histologic features of choriomatous tumors: (1) that the histologic elements in hydatidiform mole and chorio-epithelioma are identical with those seen in normal pregnancy, and (2) that even the normal trophoblast is a distinctly invasive tissue, the malignant choriomatous tumors differing from it only

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18. Findley, P.: Hydatidiform Mole: An Analysis of Five Hundred Cases, Am. J. Obst. 75: 968 (June) 1917.

19. Vineberg, H. N.: Clinical Data on Chorio-Epithelioma with End-Results of Operative Treatment, Surg., Gynec. & Obst. 28: 123 (Feb.) 1919.

in degree. These two considerations are chiefly responsible for the difficulties of diagnosis and prognosis which are presented by many of these tumors. As for the actual histogenesis of these two neoplasms, there has in the past been much difference of opinion, as has been briefly indicated in the opening paragraphs. The evidence at present appears to be quite conclusive that both trophoblastic layers, i. e., the syncytium and the layer of Langhans, are of fetal origin; that both hydatidiform mole and chorio-epithelioma arise from the cells of the trophoblast rather than from the decidual cells of the mother, as was formerly believed, and (3) that both layers are commonly involved, though in varying proportion.

The cardinal histologic features observed, respectively, during normal pregnancy, hydatidiform mole and chorio-epithelioma may be briefly summed up as follows:

Normal Pregnancy.—The chorionic villi are made up of a stroma of light textured myxomatous-looking connective tissue whose consistency varies somewhat according to the stage of pregnancy. After the earliest stages it contains definite blood vessel channels (Fig. 1). Its covering trophoblast, in early pregnancy, consists of two layers, the syncytium and the layer of Langhans. The latter, which adjoins the stroma, is made up of well-defined cuboidal or polygonal cells. The syncytium forms a narrow ribbon of protoplasm in which nuclei are placed at rather frequent intervals. The Langhans layer, while distinct in early gestation, disappears after about the first half or even earlier, so that only the syncytium covers the villi during the later stages.

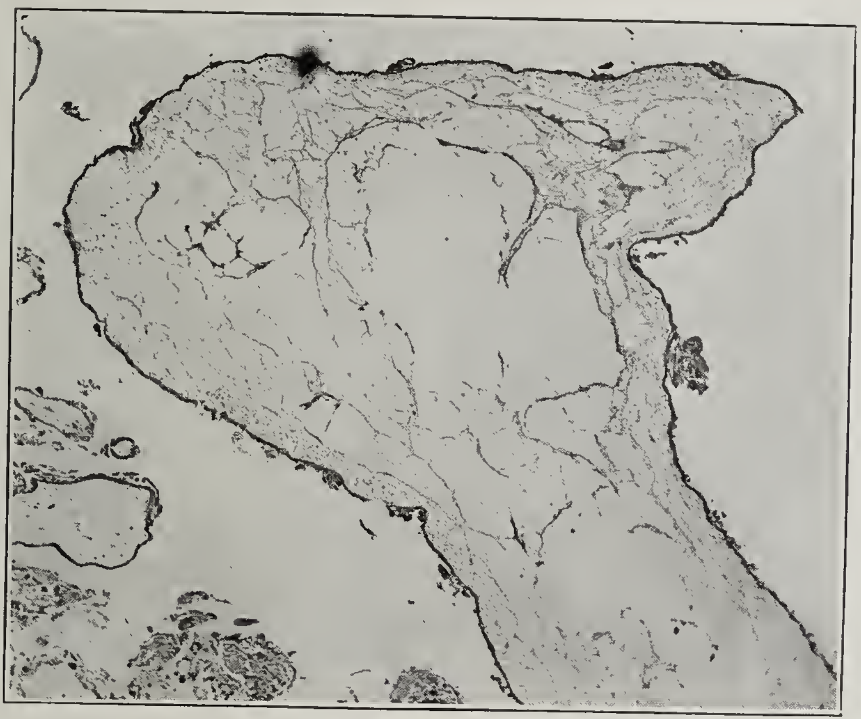

Fig. 2.—A large villus (hydatidiform degeneration), with almost no trophoblastic involvement. A similar picture is presented in other parts of the section.

Without going into details concerning the formation of the placenta, suffice it to add that the trophoblast, more particularly the syncytium, is often found pushing into the uterine veins and musculature, even in normal pregnancy. Syncytial wandering cells are often found at quite a distance beneath the placental site. Kworostansky,[20] in 1903, showed that fetal elements, especially syncytial giant cells and Langhans cells, may be found in the musculature of all pregnant uteri at any time from the first to the tenth month of pregnancy, and even for a few weeks after delivery. The recognition of this fact is of great importance from the standpoint of the diagnosis of malignancy, as will be emphasized later. The invasion of venous channels is often associated with the separation and deportation of masses of syncytium, or even of entire villi themselves. Schmorl,[21] in 1905, published the results of his examination of the postmortem material obtained from 150 pregnant women. He found lung emboli of such deported placental material exceedingly common, especially in the eighty-three eclamptic women included in the series. In only one case, however—and even this was rather doubtful—did he find a proliferative tendency in this transported tissue. Among the cases of pregnancy in the earlier stages, especially during the first month, he twice found such proliferative activity, although in these two cases he could not be sure that the placenta was normal, as examination of this tissue was impossible. While it thus seems that there is no tendency to active growth of these lung emboli in normal cases, Schmorl adds that, in three cases of hydatidiform mole which he examined from this standpoint, he found evidence of active proliferation in these transported masses.

I have already referred to my Case 4, in which hemoptysis occurred on the fifth day after removal of a hydatidiform mole. The further progress of this case was watched with considerable trepidation, for it was feared that malignant metastasis had occurred. No recurrence of the lung symptoms took place, however. Furthermore, there was no recurrence of uterine bleeding, and the patient has not only remained perfectly well, but has recently passed through a normal pregnancy. Such incidents illustrate well the vagaries and uncertainties attendant on both the diagnosis and the prognosis of these conditions.

Hydatidiform Mole.—The three pathologic changes which characterize hydatidiform mole are trophoblastic proliferation, hydropic degeneration of the stroma, and degeneration of the blood vessels. Since the epoch-making investigations of Marchand, the custom has been to stress the predominant importance of the first of these elements, i. e., the proliferation of the trophoblastic layers. I have personally been impressed, however, with the absence or the slight degree of trophoblastic change to be observed in many hydatidiform moles. It is not unusual, even in the most extreme cases of vesicular mole, to find that the distended villi are covered with only one or two layers of epithelium (Fig. 2). A number of other writers have called attention to these facts (Langhans, Meyer), and there is little doubt that the importance of trophoblastic proliferation has been exaggerated. That it frequently occurs, and that at times it may be very striking (Figs. 3 and 4), cannot be gainsaid; but it can scarcely be considered essential for the microscopic diagnosis of this condition. In this connection it must be borne in mind that different pictures are likely to be encountered in different parts of the mole, and that trophoblastic proliferation may be striking in one area and absent elsewhere. These peculiarities are perhaps chiefly due to the environmental conditions surrounding the villi, depending on whether the villus has separated from the uterine wall or whether it still receives abundant nutrition from the maternal tissues. It is easy to differentiate the areas of proliferated Langhans cells from the syncytial masses. The latter take a characteristic homogeneous eosin stain, are commonly markedly vacuolated, exhibit no cell differentiation, and often contain large and perhaps multiple nuclei. The Langhans cells, on the other hand, possess the morphologic characteristics of epithelium, appearing as clumps of polygonal cells beneath the syncytium, but not infrequently breaking through the syncytial zone to form large trophoblastic nodules.

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[20] Kworostansky, P.: Ueber Anatomie und Pathologie der Placenta; Syncytium in dem schwangeren Uterus; Werkung der Herz- un Nierenkrankheiten auf die Muskulatur und Placenta; Atonie des Uterus, Placentar- Adhäranz, Uterus-Ruptur, Arch. f. Gynäk. **70**: 113, 1903.

[21] Schmorl, S.: Ueber das Schicksal embolisch verschleppter Placentarzellen, Zentralbl. f. Gynäk. **29**: 129-137, 1905.

Far more important, according to Meyer, are the stromal and vascular changes that take place with vesicular mole. Meyer states that "a villus with a normal stroma and normal vascularization never was found to have undergone true hydatidiform degeneration, but one with a normally active epithelium—both Langhans' layer and syncytium—often was truly hydatidiform." The recent studies of this investigator led him to conclude that the earliest recognizable changes are those which involve the stroma and blood vessels. This observation is of importance because it is these very early stages of the process with which we should endeavor to become familiar. It is difficult to determine whether it is the blood changes or the stromal alterations which come first, but both may be definite even though the trophoblast appears quite normal.

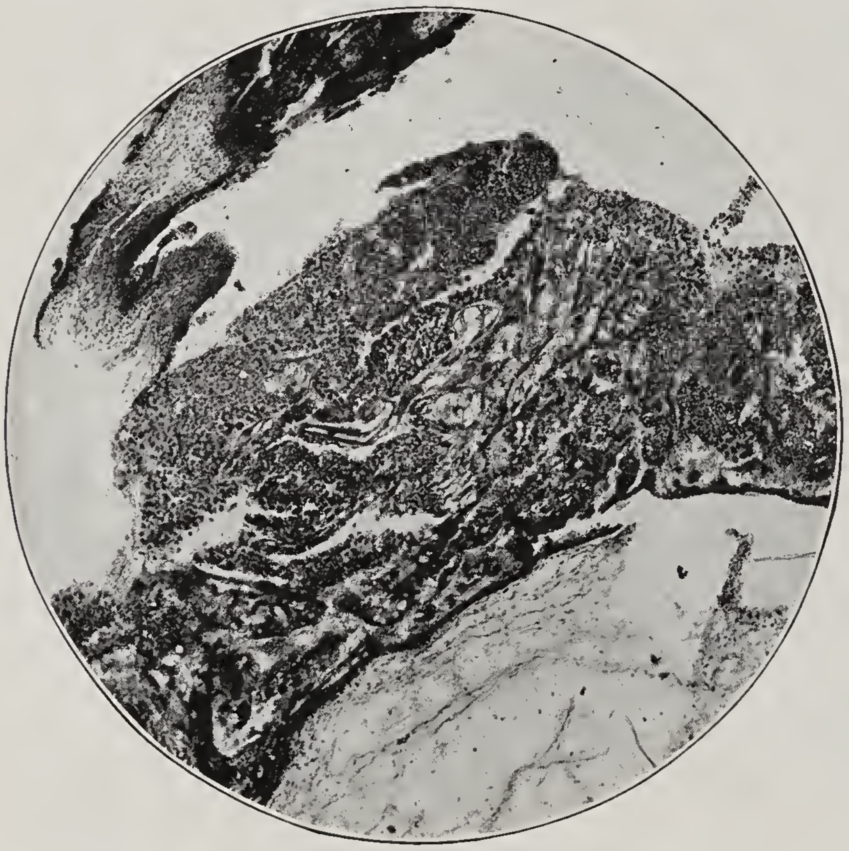

Fig. 3.—Below and to the right is the edge of a hydatidiform villus (Case 5). The trophoblast shows enormous proliferation of both layers. The vacuolated syncytial masses are clearly distinguishable from the masses of Langhans cells. The examination of curettings from such a case might easily lead to the diagnosis of chorio-epithelioma.

Reference has already been made to the fact that Gierse many years ago, and Meyer more recently, believe that these early hydatidiform degenerations explain many abortions for which no other cause is apparent. The very great practical application of such an observation, if it can be verified, is evident. I have recently been studying many sections of retained embryonic tissue from this point of view, but have not as yet been able to convince myself as to the great frequency of genuine hydatidiform changes in cases of abortion. In a number of tubal specimens which I have recently examined, however, there seems to be no question as to the character of the villous changes. On this point, however, I trust to be able to report more fully at a later date.

The stromal changes, aside from the degeneration of blood vessels, consist of the gradually increasing edema, fenestration and liquefaction of the connective tissue, changes which in the late stages are responsible for the characteristic grapelike appearance of gross specimens. The stroma not infrequently shows numbers of the so-called Hofbauer cells, to which Hofbauer[22] and others formerly attached considerable importance as indicating malignancy. This belief, as will be seen later in the paper, has been quite generally abandoned.

The fetus usually disappears by absorption, although exceptions to this rule are more common than is usually believed. This is especially true in those cases in which the hydatidiform disease is of the partial or incomplete variety.

CHORIO-EPITHELIOMA

If there is any one feature which distinguishes chorio-epithelioma from its benign prototype, it is its invasiveness. Indeed, without definite histologic evidence of the latter, it is as a rule hazardous to make a diagnosis of chorio-epithelioma. One may or may not find chorionic villi still present. When they persist, they are likely to be enormously enlarged. The villi, instead of lying comparatively free, are buried in the tumor cells, which are arranged after a rather characteristic honeycomb pattern. Large islands of cells, obviously derived from Langhans' layer, alternate with masses of syncytial tissue in an alveolar meshwork about blood spaces. Strands of these cells may be followed for considerable distance into the uterine muscle, much of which is necrotic and consequently poorly staining. Almost invariably, large masses of blood and fibrin are seen, accounting for the grumous consistency and the dark reddish appearance presented by these growths in the gross.

CRITERIA OF MALIGNANCY IN CHORIOMATOUS TUMORS

Although, from time to time, various authors have asserted the possibility of distinguishing malignant tendencies in hydatid moles from the microscopic picture alone, it is significant that those of greatest experience with such tumors maintain the unreliability of all such criteria. Marchand, Teacher and others whose experience has been widest do not hesitate to admit their ignorance of any reliable indication of malignancy. I have already stressed the fact that the degree of trophoblastic proliferation is not a safe index, since this varies between very wide limits in tumors which clinically appear to run similar courses. In other words, malignancy may develop whether there is little or much proliferation, and whether one or both layers are involved. Diagnosis from curettings is exceedingly hazardous, for the picture of chorio-epithelioma is often closely mimicked by benign vesicular mole, or even by normal pregnancy. There can be no question that many normally pregnant uteri have been removed mistakenly for chorio-epithelioma, when the diagnosis has been made from curettings. Of five uteri which were sent to Dr. Cullen for examination in a short period of time, and which had been removed on the diagnosis of chorio-epithelioma, only one was really the seat of this disease.

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[22] Hofbauer, J.: Ueber das konstanten Vorkommen bisher unbekannter zelliger Formelemente in der Chorionzotte der menschlichen Placenta und über Embryotrophe, Wien. klin. Wchnschr. **16**: 871-873, 1903.

Even when sections of the uterine wall are available, the diagnosis may present difficulties. This is easy to understand when one recalls what has been said as to the invasiveness of the normal trophoblast, and of the fact that trophoblastic elements are not infrequently found in the uterine musculature, far beneath the actual embryonic area. Practically always, however, this invasion is of a somewhat sporadic nature. Strands of trophoblastic cells, especially syncytium, extend into the muscle for a short distance, while, beyond these, scattered syncytial wandering cells may be followed to a much greater depth. When, however, large masses of trophoblast, and especially Langhans cells, advance destructively into the muscle, and when they present the characteristic alveolar grouping about blood spaces, there is no difficulty in diagnosing chorio-epithelioma (Fig. 5). It cannot be too strongly emphasized that the finding of syncytial or even villus masses in the uterine veins, perhaps far removed from the placental area, is not an indication of malignancy. Figure 6 shows such a trophoblastic mass in a uterine vein. It is taken from Case 8, and the patient is alive and well twenty years after operation.

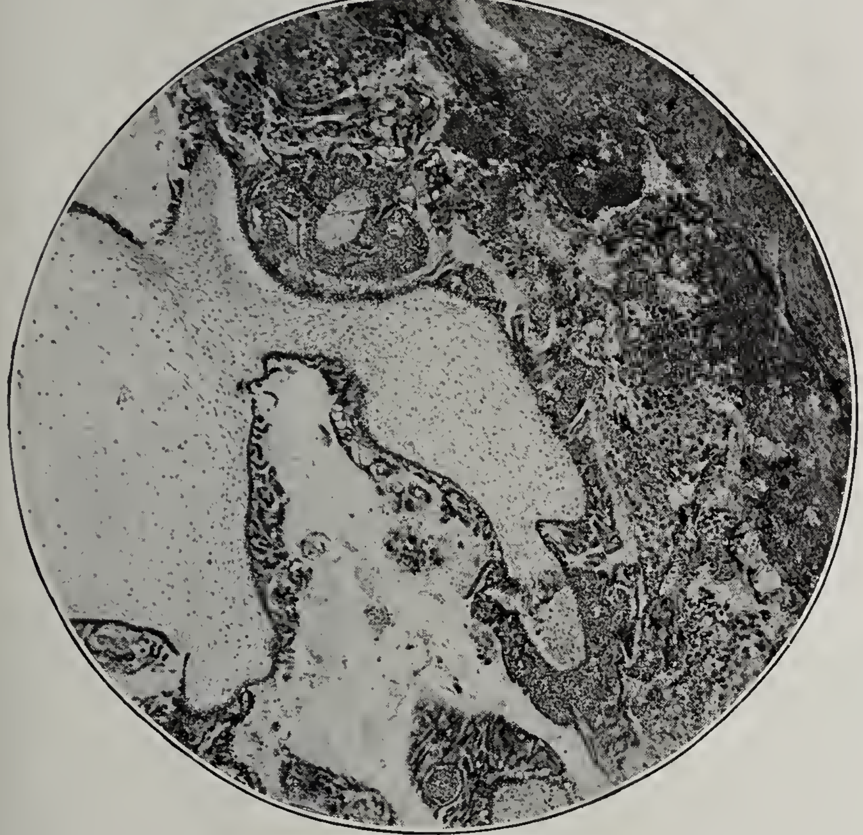

Fig. 4.—Invasion of uterine wall by hydatidiform villus (Case 8), whose trophoblast is markedly proliferated. Note the areas of fibrin and hemorrhage. In this case villi and syncytial masses were found far out in the uterine veins (compare Fig. 6), but the patient is alive and well after twenty years. This case conforms to the type designated by Ewing as chorio-adenoma destruens.

Reference has already been made to the frequncy with which metastases occur with chorio-epithelioma. They may properly be considered as evidences of malignancy, although, as has already been noted, recovery is possible even after the occurrence of metastases. Hofbauer, some years ago, described certain large, globular, acid-staining cells, often with eccentric nuclei, and not infrequently multinuclear, which occur in the stroma of the villi of some moles. He considered these cells of trophoblastic origin and as indicative of malignancy. This idea has been abundantly disproved. The subject has been recently reviewed by Meyer, who comes to the conclusion that these cells merely represent degeneration phases of the mesenchyme cells, an explanation which is probably correct. I have seen such cells in moles which, from both their histologic structure and their subsequent course, were undoubtedly benign. On the other hand, they are often absent in the obviously malignant cases.

ASSOCIATION OF LUTEIN CYSTS OF THE OVARY WITH CHORIOMATOUS TUMORS

There is no aspect of the general subject of choriomatous tumors more interesting than the frequent association with such growths of multiple lutein cystic conditions of the ovaries. Statistics as to the frequency of this association vary. Of 144 cases of choriomatous tumors compiled by Runge, there was no note as to the ovarian condition in sixty-three; in twenty-four, the ovaries were more or less cystic; in eleven, palpation showed no changes, and in twenty-eight no cystic changes were found at operation. Of twenty-eight cases of vesicular mole, no note as to the ovarian findings was made in sixteen, while twelve showed cystic degeneration.

Many authors, unfortunately, make no effort to discriminate between the simple cystic degeneration which is so common during pregnancy and the remarkable multilocular lutein cysts which are far more characteristic of the condition under discussion. Indeed, these interesting lutein tumors are found only in association with choriomatous neoplasms. When one reads, therefore,[23] that as many as 91 per cent. of choriomatous tumors were found to show bilateral cystic change in the ovary, one must qualify this statement in the light of the distinction which has just been drawn. Although all of my eight patients with hydatidiform mole were carefully examined for these ovarian changes, the findings on palpation were negative in all except one. Of the four chorio-epitheliomas I am reporting, moreover, none showed the really characteristic ovarian lesion,

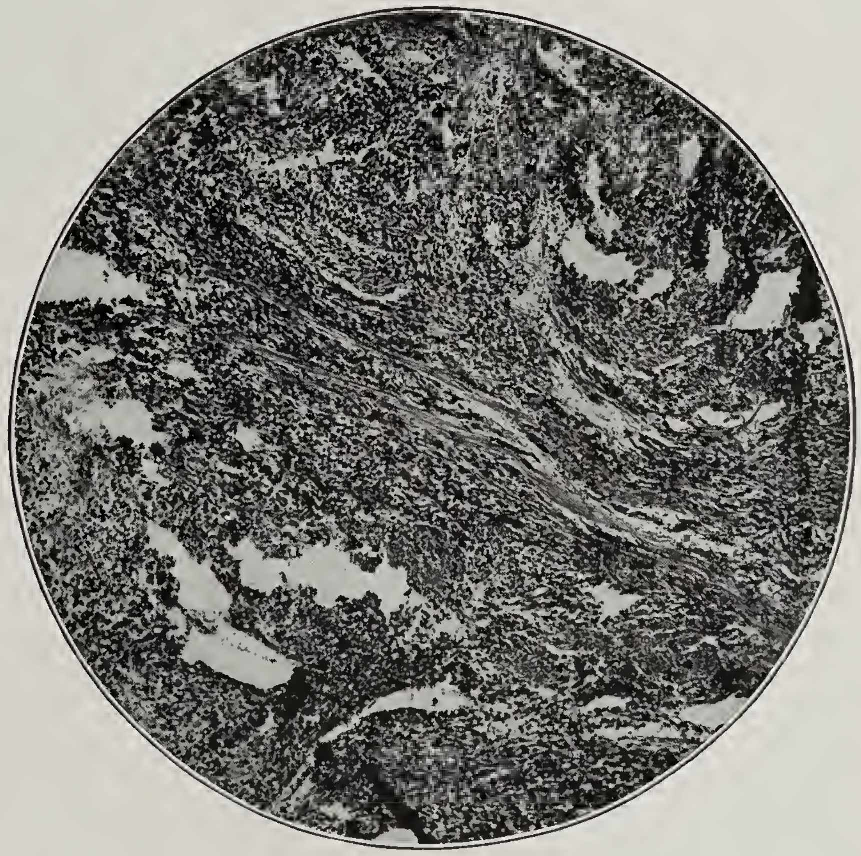

Fig. 5.—Chorio-epithelioma (Case 9). The trophoblast, especially the Langhans cells, is seen invading and destroying the uterine muscle, vestiges of which are seen near the center of the field. No trace of villous structure is left.

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[23] Patellani, S.: Zur Frage der Ovarialveränderungen bei syncytialen Tumoren und Blasenmolen, Zentralbl. f. Gynak. **29**: 388, 1905.

although at least one showed a large cystic ovary. It is only fair to state, however, that no great importance can be attached to these figures, as in only one of the hydatidiform moles and three of the chorio-epitheliomas was there an opportunity for microscopic study of the ovaries.

In the most recent study of this subject, Cottalorda [24] found lutein cysts present in 59 per cent. of the cases of hydatidiform mole, and in 9.4 per cent. of those of chorio-epithelioma. He believes that the presence of these ovarian cysts with hydatidiform mole is indicative of a malignant tendency, and should therefore be looked on as an indication for total hysterectomy and removal of the ovaries. This deduction, to my mind, is not justified by past experiences, and certainly should not be accepted until far more convincing evidence is produced than is now available.

The histogenesis of the lutein cells which are so abundantly found in these ovarian tumors has been differently interpreted by different authors. Schaller and Pförringer, many years ago, interpreted such a case as representing an infiltrating carcinomatous activity on the part of the lutein cells. Stoeckel, in 1902, gave the first adequate description of the condition, and showed the characteristic participation of the lutein cells. Since then Seitz,[25] Wallart [26] and others have urged that the lutein cells are of the type of theca-lutein cells, and that the process is merely an exaggeration of what happens during normal pregnancy.

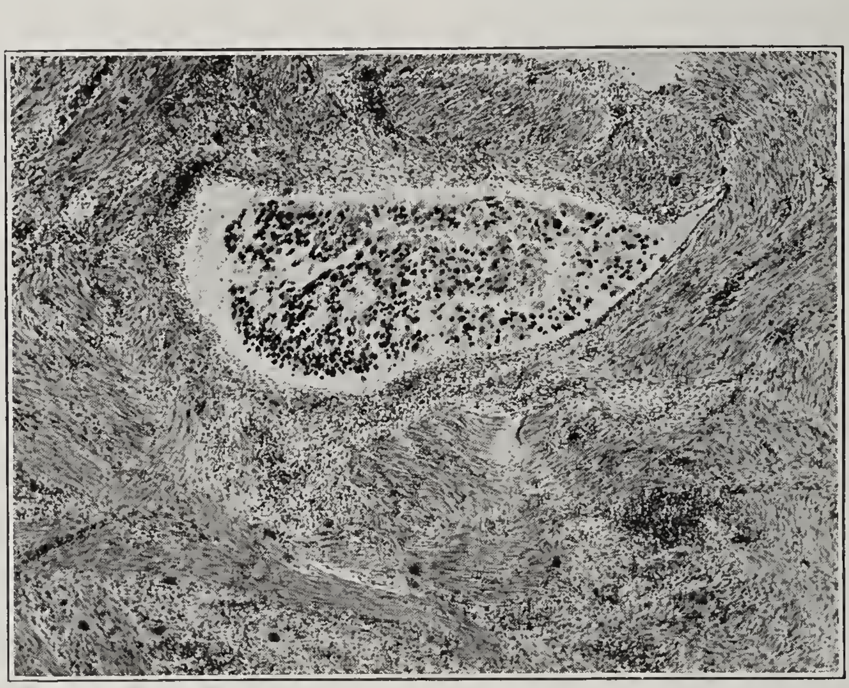

Fig. 6.—Trophoblastic mass plugging large uterine vein in Case 8, the same hydatidiform mole from which Figure 4 was made. Note also the numerous "syncytial wandering cells" in the uterine muscle.

A study of the unusually fine specimen of this ovarian lesion which was found in my Case 8 convinces me of the general correctness of this view. During normal pregnancy, the theca cells of the atretic follicles in the ovary undergo definite hypertrophy and assume lutein-like characteristics, so that they have been designated as theca lutein cells. This term distinguishes them from the granulosa-lutein cells, which are the essential cells of the ordinary corpus luteum. Presumably, the stimulus for the formation of the theca-lutein cells emanates from the embryo, probably the trophoblast.

With hydatidiform mole or chorio-epithelioma it would seem that the trophoblastic overgrowth is responsible for an enormous increase and perhaps perversion of this causative stimulus, so that the ovarian response is correspondingly increased. The number of atretic follicles is increased and the lutein-like changes in the theca cells become pronounced. Even the theca cells of follicles which have long since become atretic or which have already become converted into corpora fibrosa are wakened into activity by this stimulus, to which they appear to be specifically sensitive. This explains why the theca-lutein cells are so often found beneath a deep layer of connective tissue, and why they often appear to be buried deep in the ovarian stroma (Fig. 7). It was this characteristic, no doubt, which led Schaller and Pförringer [27] to interpret the condition as a carcinomatous infiltration.

The peculiarity of distribution of the theca-lutein cells, even more than any innate morphologic differences, serves to distinguish them from the granulosa-lutein cells of either the normal corpus luteum or the corpus luteum cyst. In the latter, for example, the lutein cells occur as a more or less well defined zone, corresponding to the lutein zone of the original corpus luteum. From such facts as these, the evidence seems quite convincing that the multiple ovarian cysts seen in some cases of chorioma are to be looked on as multiple lutein cysts, but not corpus luteum cysts.

If the foregoing deductions are correct, these cysts are secondary to the chorioma, instead of vice versa, as Pick [28] and Jaffé [29] have maintained. These authors believe that the ovarian changes are actually the cause of the hydatidiform mole or chorio-epithelioma, as the case may be. Aside from its other discrepancies, such a theory offers no explanation for those cases in which this ovarian change is absent. This group, as has already been said, constitutes the great majority.

A combination of the two theories has been suggested by Penkert [30] within the past year, to the effect that chemical substances may be elaborated during pregnancy, perhaps as a result of endocrine disturbance, which may exert their effect in any one of various ways: (1) on the embryo, with the production of hydatidiform mole or chorio-epithelioma; (2) on the ovaries, especially on the atretic follicles, causing a "hyperreactio luteinalis" with multiple lutein cyst formation; (3) on both embryo and ovaries, which are, therefore, both the seat of pathologic change.

That the multiple lutein cysts which we are here considering are not to be looked on as genuine neoplasms is indicated by the fact that their spontaneous disappearance, after removal of the pathologic conceptus, has been noted by a number of observers (Santi, Fraenkel, Ballerini, Gouillod, Courant and others).

CLASSIFICATION OF TYPES

Various efforts have been made to divide choriomatous tumors into types or groups. The most authoritative have been those of Teacher and of Ewing. The former divides these conditions into (1) the simple hydatidiform mole; (2) the malignant or destructive hydatidiform moles, which differ from the former chiefly in a little more trophoblastic overgrowth, infiltration of the decidua, and invasion of vessels, and also in the establishment of metastases; (3) the pure chorio-epithelioma; (4) a group between the last two, made up chiefly of epithelium and showing a few villi.

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[24] Cottalorda, J.: La mole hydatidiforme, le chorio-épithéliome et les kystes lutéiniques de l'ovaire: rapports étiologiques, cliniques et opératoires. Gynéc. et obst. **4**: 119, 1921.

[25] Seitz, L.: Zur Frage der Luteinzellenwucherung in atretischen Follikeln während der Schwangerschaft, Zentralbl. f. Gynäk. **29**: 257, 1905.

[26] Wallart, J.: Zur Frage der Ovarialveränderungen bei Blasenmole und bei normaler Schwangerschaft, Zentralbl. f. Gynäk. **29**: 385, 1905.

[27] Schaller und Pförringer: Zur Kenntnis der vom Corp. lut. ausgehenden Neubildungen, Beitr. f. Geburtsh. u. Gynäk. (Hegar's) **2**: 91, 1899.

[28] Pick, L.: Zur Frage der Eierstocksveränderungen bei Blasenmole, Zentralbl. f. Gynäk. **27**: 1033-1043, 1903.

[29] Jaffé, J.: Blasenmole und Eierstock: Ein Beitrag zur Pathologie des Corpus luteum, Arch. f. Gynäk. **70**: 462, 1903.

[30] Penkert, M.: Zur Frage der ursächlichen Zusammenhangs zwischen Blasenmole und cystische Ovarialveränderungen (Luteinpseudokystom), Arch. f. Path. Anat. u. Physiol. **229**: 113-136, 1921.

Somewhat simpler is the classification of Ewing, who groups chorioma under three heads: (1) hydatidiform mole; (2) chorio-adenoma destruens, and (3) chorio-carcinoma. It is probable that the term applied to the third group will not supplant the one which has come into general usage, chorio-epithelioma. The first and third subdivisions are clear-cut enough. The second, chorio-adenoma destruens, embraces those cases which exhibit definite invasiveness, trophoblastic proliferative activity, and other evidences of malignancy, but in which chorionic villi are still present. I do not see the wisdom of classifying these as a separate group. The mere finding of a few chorionic villi has no decisive bearing on the malignant characteristics of the tumor, any more than does the finding of areas of normal epithelium in a section of cervical cancer. Furthermore, the finding of villi is in a measure an accidental matter, depending on the portions of the tumor which happen to be cut for microscopic examination. It is probable that many cases placed in the third group, the outspoken chorio-epitheliomas, would show chorionic villi if examined sufficiently thoroughly.

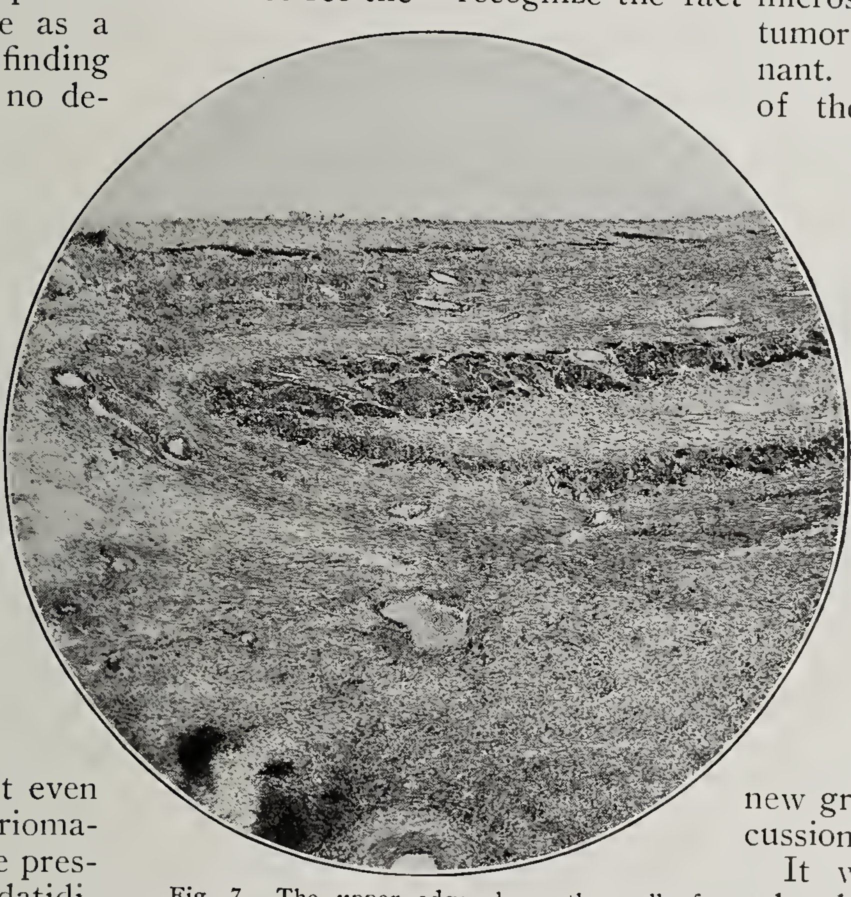

Fig. 7.—The upper edge shows the wall of one of the multiple lutein cysts found in the ovaries in Case 8. An imperfect layer of dark-staining theca-lutein cells is seen just beneath the connective tissue of the cyst wall. Deeper down is an old obliterated atretic follicle (corpus fibrosum) whose walls show a marked theca-lutein reaction. These cells are morphologically not unlike liver cells. A similar "hyperreactio luteinalis" is seen throughout the large cystic masses found in both ovaries.

It is easily conceivable that even in a definitely malignant choriomatous tumor there might still be present some of the normal or hydatidiform villi from which the tumor takes its origin. It is true that in the outspokenly malignant cases, as in my Case 9, no trace of villous structure is left. On the other hand, the preservation of a typical villous pattern constitutes histologic evidence against advanced malignancy. An excellent illustration of this borderline group is furnished by my Case 8. The pateint had previously expelled a large mass of what was evidently hydatidiform molar tissue. Even when the uterus was removed, vesicles (i. e., hydropic villi) were still present in large numbers. Figure 4 shows clearly the relation of the greatly enlarged hydatidiform villus to the uterine wall. The latter is invaded by the greatly proliferated trophoblast, more especially the syncytium. But an invasion like this may be seen even in normal pregnancy, as I have already emphasized. Furthermore, in Figure 3, which shows an unquestionably benign mole, we see a degree of trophoblastic overgrowth fully as marked as in Figure 4. Case 5, from which Figure 3 was made, would no doubt have shown a picture similar to that seen in Figure 4 had the uterus been removed and examined microscopically. Unless such careful microscopic examinations are made, cases similar to my Case 8 go down in the literature as instances of chorio-epithelioma, when as a matter of fact they represent an essentially benign form of chorioma. Here, as elsewhere, it is not always possible to say where the benign process ends and the malignant one begins, and it is, of course, quite probable that many of these proliferatively active moles already represent an early form of malignancy. But as soon as they become malignant, they pass over into the domain of chorio-epithelioma. There would thus seem to be no advantage in speaking of benign and malignant hydatidiform moles, any more than speaking of benign and malignant papilloma. The latter is to all intents and purposes a carcinoma, and the malignant hydatidiform mole is a chorio-epithelioma, though perhaps in a still early stage.

In other words, whether or not we are able to recognize the fact microscopically, these choriomatous tumors are either benign or malignant. Moreover, the applicability of the term "chorio-adenoma" is open to question. Ewing's statement that the chorionic villus is anatomically and physiologically to be compared to a gland will not be conceded by all. It is really more properly compared to an intestinal villus. It is unfortunate that the term "hydatidiform mole" has come into such general usage. It is founded on an earlier and, of course, incorrect conception of the nature of the disease. In one sense it is to be looked on as a degenerative process, but the trophoblastic new growth perhaps entitles it to discussion among neoplastic growths.

It would seem sufficient, from what has been said, to recognize as the two fundamental types of chorioma (1) chorioma benignum, or hydatidiform mole, and (2) chorioma malignum, or chorio-epithelioma. The latter may or may not exhibit remnants of the chorionic villi from which it arises. In the more advanced stages, villi are not ordinarily seen. On this basis, the relation existing between the normal chorion, hydatidiform mole, and chorio-epithelioma would be somewhat analogous to that which exists between the normal skin epithelium, the benign papilloma, and the malignant epithelioma. As in the diagnosis of carcinoma, the destruction of the normal villous pattern would seem to be the especial feature of the malignant chorioma. On the other hand, the benign chorioma, while it may show marked trophoblastic proliferation and a certain amount of invasiveness, is characterized by a preservation of the characteristic branching pattern of the normal placental structure.

BEARING OF PATHOLOGY ON TREATMENT

It is not my intention in this paper to discuss at any length the matter of the prognosis or treatment of chorioma, except to touch on one or two points which are closely related to our knowledge of its pathology. In the first place, it is quite certain that thorough evacuation of the uterus will cure hydatidiform mole in the great majority of cases. Following this procedure, the patient should be kept under close observation for many months. In the event of a persistence of bleeding, it is perhaps best to proceed at once to a panhysterectomy, although it is undoubtedly true that in a certain number of cases the condition will be found to be nonmalignant after removal of the uterus. The danger of waiting is so great, however, and the diagnosis from microscopic examination of scrapings so hazardous, that hysterectomy in such cases is fully justified. This is especially true in view of the warning of Hitschmann and Cristofoletti that curettage increases the danger of disseminating the disease. The importance of thorough pathologic study of the uterus after removal cannot be too strongly emphasized. Diagnostic pitfalls are more frequently encountered in this field than in any other in gynecologic pathology, as has already been pointed out.

Although chorioma is so suggestive of carcinoma in many of its characteristics, it differs from the latter in that it is spread chiefly along the vascular channels, after the manner of a sarcoma. For this reason, it would seem to be sufficient to perform simple panhysterectomy, unless the parametrial veins are the seat of local thromboses, owing to the immediate invasion of the growth. In this case, a more extensive extirpation would be demanded.

ABSTRACT OF DISCUSSION

Dr. Fred Taussig, St. Louis: The terms Dr. Novak used—benign and malignant chorio-epithelioma, the benign applying to the hydatidiform mole—is a very good definition. We encounter here the same difficulty that we do in dealing with tumors of the ovary. Even after we have removed the tumor, we are not certain as to the extent of the malignancy. What shall we do under these conditions? In a study I made many years ago of the hematomole, I was impressed with the occasional finding of specimens showing edema of the chorionic villi; in fact, very marked swelling of the chorionic villi resembling, to a slight degree, the hydatidiform mole may be found, especially in retained abortions. Then, there are the more definite placental changes, those in which at least one half or more of the placental tissue has been converted into a grapelike mass. They are the borderline conditions—cases that might or might not be malignant. How are we to differentiate? Schuman of Philadelphia suggested opening the abdomen, doing a hysterotomy, and, if the uterine wall was not definitely invaded by the mole, removing the mole and leaving the uterus. In case of invasion of the wall, a hysterectomy is done. I am not certain as to the possibility of implantation metastasis occurring at the time of such procedure; but if that should prove not to be of importance, the procedure is justifiable and advisable. However, one other point should be kept in mind. After a woman has had one, two or three children, the uterus no longer possesses the same value that it does in a younger woman. When we are dealing with a hydatidiform mole in a woman who has had one or more children, I believe that the relatively high incidence of chorio-epithelioma following such moles justifies hysterectomy. We should assume the same attitude that we do in the treatment of other so-called precancerous lesions. After the condition has become malignant, particularly in the case of chorio-epithelioma, it is almost hopeless to effect a cure. Therefore, let us be radical, at least in the treatment of those women in whom the uterus has already functioned in child bearing and to whom the possession of that organ is not of vital importance.

Dr. Herbert A. Black, Pueblo, Colo.: There are three especially striking features in connection with chorio-epithelioma. The first is the indefinite length of time that the chorionic villi may remain alive and dormant within the maternal tissue; second, the marked tendency which these growths have to metastasis; third, the large number of reported cases of recovery following the removal of the primary growth. Of all malignant neoplasms, none may run a more rapid course, or be followed by more complete recovery after removal of the primary growth than chorio-epithelioma. How long the chorionic cells may remain alive within the maternal tissues, we do not know. They may remain dormant for weeks or even years, and then suddenly take on a malignant proliferation and development. As to metastases, there is no record of a death from chorio-epithelioma in which extensive metastasis was not found at the necropsy. Usually metastasis takes place early and quite extensively. For some reason the removal of a primary growth will seemingly be followed by a complete clinical recovery. A few cases are on record of spontaneous recovery from chorio-epithelioma. I reported a case that seemingly was of this variety. The woman had a distinct chorio-epithelioma so extensively involving the pelvic walls and the intestines that at the time of operation the abdomen was closed without further operative procedure. The diagnosis had been established by examination of the contents of the uterus obtained by a previous curettage. She developed marked metastasis with mental derangement, suggesting metastasis in the brain. After about a year she began to improve. She is still living. After a period of nearly five years, she has recovered her health to such a degree that she is doing her own work and, clinically, she is well.

Dr. Otto H. Schwarz, St. Louis: Dr. Novak stated that Meyer paid particular attention to the absence of blood vessels. It is my opinion that blood vessels are not found until after the twelfth week in any degree at all. Therefore, how can so much importance be laid on this particular point? I have examined a considerable number of incomplete abortions microscopically, and have not been able to make out anything like early hydatidiform mole. That experience tallies somewhat with Dr. Novak's. I am also interested as regards the occurrence of lutein cystomas. My experience is limited to three cases. In one instance the mole was expelled, and the operator, finding these palpable tumors, immediately went in from above and removed both ovaries, as they contained multiple lutein cystomas. In another case a diagnosis of ovarian tumor was made in connection with a uterine pregnancy. These tumors, which proved to be multiple lutein cystomas, were removed. The woman is now about twenty weeks pregnant, and no fetal heart beat or fetal movement has been made out. I would like to ask Dr. Novak if he has ever seen these tumors in association with anything but hydatidiform mole or chorio-epithelioma. The third case was one in which a palpable tumor was made out at the time of operation, under anesthesia. The left ovary was palpated very definitely. It was about the size of one's fist. The mole was expelled. The patient was treated conservatively, and returned in three months with marked hemorrhage. Chorio-epithelioma was suspected. Without any diagnostic curettage, the tumor, uterus and adnexa were removed. The tumor, noted three months previously, had disappeared entirely. The suspected lutein tumors had undergone involution. I was very glad to note the conservative manner in which Dr. Novak treated cases of hydatidiform mole. I feel that the same conservatism should be applied to the frequently accompanying lutein cystomas. It is my opinion that in most instances these tumors are removed without their true nature having been recognized.

Dr. J. Earl Else, Portland, Ore.: I wish that Dr. Novak would tell us a little more about this matter of the extension of cells and chorionic villi into the uterus which he states occurs normally sometimes. As I remember the teaching of Virchow, he stated that when a group of cells extended in this manner in a normal condition, interstitial cells would also be found; that any extension of cells, as shown by Dr. Novak, would mean metastasis with prima facie evidence of malignancy. I would like to ask him how he obtained these benign cases; whether from operative procedure or postmortem. May it not have been possible that this would have developed into a malignant process? Can we really say that it is a normal condition occurring in pregnancy? Is it not evidence of malignancy?

DR. T. J. WATKINS, Chicago: Dr. Novak has emphasized two very important points: First, that the dangers of these moles' becoming malignant is not so great as the literature has led us to believe. Second, that malignant tissue is easily mistaken for normal tissue in cases of hydatidiform moles. In an experience of thirty years, I never encountered a malignant degeneration of one of these moles. I would strongly recommend, in cases of this kind, that radium be inserted into the cavity of the body of the uterus as a prophylactic measure. This type of cell is very susceptible to radium.

DR. MOSES CHILDRESS, Oskaloosa, Iowa: I have had no experience with mole per se, but I did have an interesting case of chorio-epithelioma following pregnancy. The woman was about 26 years of age, and this followed her second child. She had a normal labor. One month later the physician was called on account of hemorrhage. He curetted, getting a large quantity of what he thought was placenta. In two or three weeks the same process was repeated. Before I saw her, they had curetted five times, getting placenta every time. I recommended that the woman be taken immediately to the hospital. Her hemoglobin percentage was 28. A transfusion was done. Hysterectomy followed. The uterus was found perforated. There were several blood clots in the peritoneal cavity. I completed the operation, supposing that there would be a speedy recurrence. That was eight years ago. The patient is strong and healthy, weighing 170 pounds. So I would make a plea not to turn these cases away without making an effort. They are malignant, very much so, and maybe there will be a speedy recurrence; but if there is not a recurrence in six months, probably the patient is well.

DR. J. P. GARDINER, Toledo, Ohio: I had hoped that Novak would give us some idea as to the cause, or rather as to what he thought the cause may be of hydatidiform mole and of chorio-epithelioma. Those of us who are doing obstetric work meet hydatidiform mole in its beginning, and it often puzzles us to make a differential diagnosis between a hydatidiform mole and a dead fetus. My experience has been that hydatidiform mole is more frequent than is generally believed. The uterus is enlarged, and we know from examination that something is wrong. With a dead fetus, the uterus is flatter and softer than normal; with a mole, the uterus is rounder and also softer than normal. These two points will often assist us in our difficulty. Then, too, there may be a little vaginal discharge containing some of the grapelike cysts, which clinches the diagnosis. In making microscopic sections of hydatidiform moles, we find that the only live structures are the syncytium and the layer of Langhans. The stroma of the villus has degenerated, and the blood supply has also disappeared. Therefore, the active growth of this disease must be due to these live structures. It seems to me that the differentiation between hydatidiform mole and chorio-epithelioma may be very much like that between the ordinary papilloma or wart and the malignant papilloma. The wart grows and finally disappears; the malignant papilloma causes metastasis and the patient dies. Berry Hart of Edinburgh several years ago reported a case of hydatidiform mole in which he curetted six times and each time it recurred. He simply kept on curetting, and finally the patient recovered. If we take time to curet carefully and clean out the uterus properly, that is the thing to do, and then wait for further developments. Usually nothing develops, and the disease is cured. Rarely, as in Hart's case, there may be a recurrence, or, if there are hemorrhages, malignancy may be suspected, at which time appropriate treatment must be rendered.

DR. J. CRAIG NEEL, San Francisco: Two or three years ago I saw a young Spanish woman who had two children. She stated that she had missed no periods previously, although later we obtained the history that probably she missed the last period by two weeks or more. When I was called to see the patient, she was almost completely exsanguinated. The vaginal vault was filled with a growth and blood clots. The character of the growth we could not determine. However, thinking that it was probably chorio-epithelioma, I advised that we give her some chance by stopping the hemorrhage. We took her into the hospital, and evacuated the uterus and packed it. We recovered many ounces of a growth, not a hydatidiform mole, however. It was an irregular mass of tissue, which we submitted to a number of men who are recognized leading pathologists of this country. Some said it was chorio-epithelioma. The others would not commit themselves. But, thinking that we would give her a chance, we gave her three radium treatments. The uterus contracted; the bleeding stopped, and the patient remains well today. Whether it was a chorio-epithelioma or whether it was a benign tumor, I do not know, and I do not know how we are going to tell. At any rate, the radium did no harm, and I am rather inclined to think that it did some good. So, as Dr. Watkins has suggested, I believe it is safe and important to give some radium treatment in any suspicious case of this kind.

DR. EMIL NOVAK, Baltimore: In reply to Dr. Schwarz' question, embryologists tell us that blood vessels make their way into the villi within the first few weeks of pregnancy—certainly long before the twelfth week. One of the slides which I showed was made from a case in which only one menstrual period had been skipped, and yet it showed well formed blood vessels quite clearly. The multiple lutein cystomas which I described in my paper occur only in association with either hydatidiform mole or chorio-epithelioma. So far as I know, they have never been observed under any other conditions. As to Dr. Else's question concerning the presence of endometrium, I am convinced that this is a matter of no importance in the diagnosis of malignancy. Even in normal pregnancy the villi are usually not covered by endometrium, and, of course, there is no endometrium in the pulmonary deportations seen so frequently under normal conditions. I am glad that there has been such general agreement on the matter of the proportion of cases in which hydatidiform mole is followed by malignancy, and that all the speakers agree with me that this proportion has in the past been greatly overrated. If this point has been established, a useful service has been performed, for there are still not a few men who believe that hysterectomy should be the treatment of hydatidiform mole. The removal of the hydatidiform tissue, however, is all that is necessary in the overwhelming majority of cases, as I emphasized in the paper.

Intravenous Use of Quinin in Malaria.—When quinin is given intravenously by routine in malaria treatment, according to Dr. K. F. Maxcy, it can hardly be claimed that the procedure is without danger. The sudden introduction of a concentrated solution into the blood stream tends to cause circulatory depression and distressing nervous phenomena. Accidental extravasation into the tissues at the point of injection is apt to cause local necrosis and sloughing. Against these dangers is the unquestionable rapidity with which the drug is brought into contact with the parasites in the blood stream. Except for this there is no clear evidence at present that in ordinary malaria infections the method is more effective than mouth administration in curing an acute attack, in ridding the blood of sexual forms, or in preventing relapse. Its proper field of usefulness seems to be upon urgent clinical indications of two sorts: first, in cases in which prompt absorption by the gastro-intestinal tract, following mouth administration, is not to be expected because of violent gastro-intestinal disturbance or other cause, or in which it is impossible to give the drug by mouth on account of delirium, coma, etc.; and second, in patients who are gravely ill when first seen by the physician and in whom it is deemed imperative to secure immediate cinchonization. It does not seem necessary nor desirable to use the intravenous route of administration in the simple acute or chronic infections ordinarily encountered, whether tertian or aestivo-autumnal. All the precautions which are observed in giving a dose of arsphenamin should be observed in giving quinin.

ALCOHOLIC INJECTION OF SECOND AND THIRD DIVISIONS OF TRIGEMINAL NERVE

CLINICAL RESULTS WITH MORE EXACT TECHNIC *

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PHILADELPHIA

The injection of alcohol into the three divisions of the trigeminal nerve has long been recognized as a procedure of marked value in the treatment of trifacial neuralgia. In cases of malignant growths about the mouth and jaws, permanent blocking of the sensory pathways leading to the parts involved relieves the pain caused by the growth and does much to ameliorate a very distressing condition. A case of bilateral masseter spasm has been treated by alcoholic injection of one mandibular sensorimotor branch with considerable temporary improvement. To be entirely effective, the alcohol must be injected directly into the nerve trunk, enter the nerve sheath, and actually come in contact with each individual fasciculus. Infiltration of the tissue immediately about the nerve with alcohol may cause a partial loss of sensation, but the effect will be neither so complete nor so lasting as an accurate injection.

With the idea of standardizing our methods of performing these injections, an instrument called a zygometer was devised.[1] A study in the dissecting room on cadavers was undertaken,[2] using this instrument to give a uniform point of entrance for the needle through the cheek. When the needle was seen to be actually in the nerve, the angles in the horizontal and vertical planes formed by the needle-shaft and the cutaneous surface were carefully measured by a protractor, and the distance from the skin at which the nerve was reached was noted. As a result of this investigation, it is possible to make the following suggestions for injecting the maxillary and mandibular divisions of the trigeminal nerve: When the zygometer is in place, the button on the instrument is in the external auditory meatus, and the inferior edge of the anterior end of the lower bar on a level with the masseteric border of the malar bone. The injection of the mandibular division is made through a point opposite the 2 cm. mark on the lower bar of the zygometer, the needle passing just below the zygoma. The needle-shaft should make an angle with the skin of 110 degrees from above downward in the vertical plane, and 90 degrees from before backward in the horizontal plane. The nerve should be reached between 4.5 and 5 cm. from the surface. For the maxillary division, a point opposite the 3 cm. mark on the lower bar of the zygometer is chosen. The needle passes below the zygoma upward and slightly forward, the shaft subtending an angle of 100 degrees on the protractor in the horizontal (above downward) and 115 degrees in the vertical plane (before backward). At a depth of from 5 to 5.5 cm. from the surface, the nerve should be encountered.

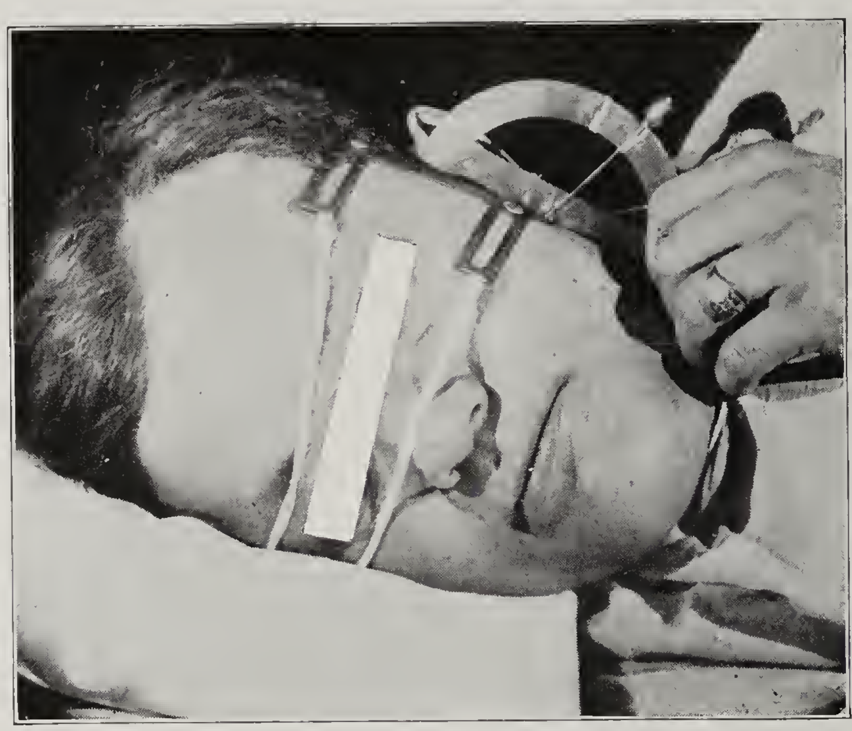

Fig. 1.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (110 degrees) in vertical plane with protractor.

With these facts in mind we have kept a careful record of the injections in clinical cases during the past year. Seventy-five patients have been treated by alcoholic injection, sixty-six for neuralgia, eight for malignancies about the face and jaws, and one for masseter spasm. In all, ninety-four injections were made in seventy-five cases, forty in the second division and fifty-four in the third division. Curiously enough, the right fifth was involved in forty-six cases, and the left in twenty. In the neuralgia cases the average age was 55 years, the youngest 23, the eldest 81. Tic douloureux is predominantly a disease of later life. The pain is typical, paroxysmal, flashing, burning and tearing in character, distinctly localized in the peripheral distribution of the nerve, most commonly unilateral, when unilateral limited strictly to the side involved and never crossing the midline, and the course of the pain is horizontal rather than vertical. Patients who complain of pain which starts in either lip and shoots vertically upward through the nose and eye to the vertex should be regarded with suspicion, and the diagnosis of true trigeminal neuralgia made with reservation. The second and third divisions are most usually involved, in our series, with equal frequency. Both second and third divisions were implicated six times. With regard to the ophthalmic division, injection was used but once in this series. Open avulsion under local anesthesia with the incision placed in the eyebrow, thus leaving no visible scar, is a simple and effective method of dealing with supra-orbital neuralgia. It has seemed much easier to avulse the nerve than to inject it. The supra-orbital foramen may be extremely difficult to enter with the needle, particularly if the supra-orbital ridge is prominent and the opening well hidden by a projecting bony shelf.

Local anesthesia should be used in all trigeminal injections. The only definite indication of the penetration of the nerve trunk by the needle is pain referred to the peripheral distribution of the nerve. The skin should be well infiltrated with procain, but no more anesthetic employed until the patient's reaction shows that the nerve is reached. If the deep tissues about the nerve are filled with procain, enough of the solution may pass into the nerve trunk to deaden sensation momentarily, in which case it will be very difficult to determine the penetration of the nerve by the needle.

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* From the Clinic of Dr. Charles H. Frazier, University Hospital.

[1] Frazier, C. H.: S. Clin. N. A. **1**: 101 (Feb.) 1921.

[2] Grant, F. C.: Anatomic Study of Injection of Second and Third Divisions of Trigeminal Nerve, J. A. M. A. **78**: 794-797 (March 18) 1922.

Once the nerve is pierced, procain may be injected into it or the patient lightly anesthetized with gas-oxygen anesthesia before the 95 per cent. alcohol is injected. Not more than 0.75 c.c. of alcohol should be used, as the nerve trunk will not absorb a larger quantity.

The criteria by which the effectiveness of an injection is judged are the pain of which the patient complains when the needle enters the nerve, and complete peripheral anesthesia to pain in the distribution of the nerve following the injection of the alcohol. No injection should be considered successful unless the peripheral anesthesia is absolute.

There have been no serious complications as a result of these injections. None should be anticipated if the needle is not allowed to penetrate too far. Occasionally the side of the face becomes swollen, but this is controlled by immediate application of iced compresses. In one case there was a corneal ulcer after infiltration of the entire ganglion, which occurred unexpectedly following a successful third division injection. Complete peripheral anesthesia resulted in all three divisions, and the ulceration appeared in twenty-four hours. It cleared up subsequently under appropriate treatment. In three other cases all three divisions were affected following effective third division injection. No corneal complications resulted. A temporary facial weakness was observed once. In the anatomic room it has been noted that the ganglion may be injected through the foramen rotundum in a large percentage of cases.

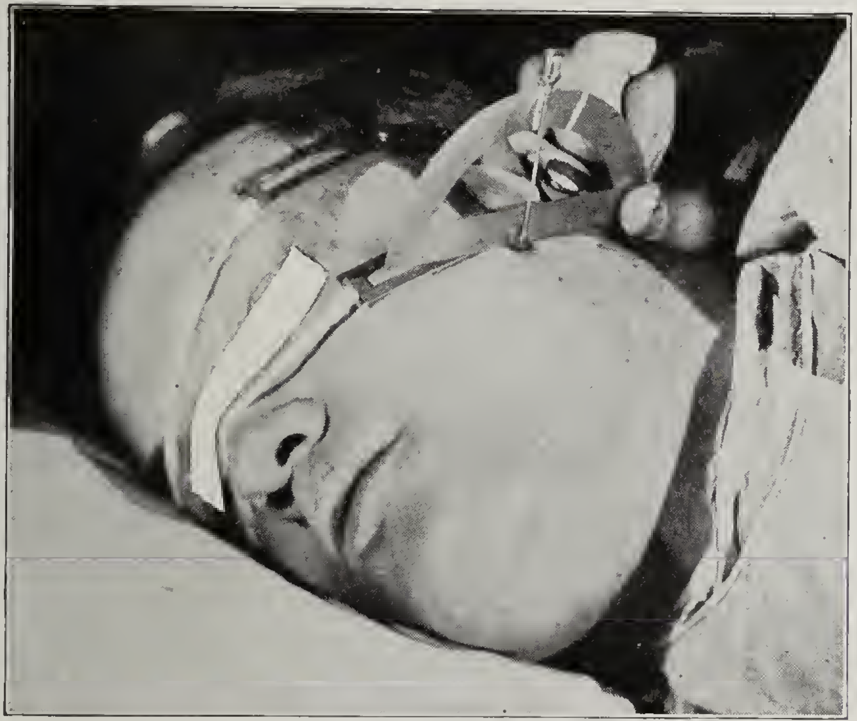

Fig. 2.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (90 degrees) with protractor in the horizontal plane.

In this series of injections, in the attempts made to reach the third division for the relief of neuralgia, thirty-three were successful and twelve failed, at the first attempt. In every patient who returned for subsequent injection, the nerve was eventually reached. Eight injections of the third division were made in the presence of a malignant growth. Five were successful, and three unsuccessful. In the cases in which the neoplastic tissue has infiltrated the cheek, distortion of normal relationships may occur; it may be impossible to open the jaw, and accurate injection is much more difficult. Including all cases of third division injections, numbering fifty-four, thirty-nine were successful, and fifteen failed at the first attempt, a rate of failure of 28 per cent. The average angle in the vertical plane was 105 degrees, and in the horizontal plane 90 degrees; the average penetration was 4.75 cm. All third division injections were made from the 2 cm. mark. In the second division series, forty injections were performed: thirty-eight for neuralgia, and two for carcinomatous degeneration. Of the thirty-eight injections for neuralgia, thirty-one were successful, and seven unsuccessful in the first instance, an average of 18.6 per cent. of failure. Both injections for relief of pain consequent to malignant change were effective. In forty injections of the maxillary division, seven were failures, an average of 17.5 per cent. All second division injections were made from the 3 cm. mark; the average angle in the horizontal plane (before backward) was 98 degrees, in the vertical plane (above downward), 112 degrees. The nerve was reached from 5 to 5.5 cm. from the skin surface. While we have no carefully recorded series of cases treated by injection before the introduction of this more exact technic, there is nevertheless a very strong feeling that hitherto if a success was scored in 50 per cent. of our cases it was satisfactory. In this series of cases, small though it is, the percentage of successful injections has been markedly raised. As the number of cases increases and careful records are kept of the horizontal and vertical angles and depth of penetration, it will be possible to give even more exact directions for accurate infiltration of these nerve trunks.

CONCLUSIONS

1. Alcohol injections of the three divisions of the trigeminal nerve are of much value in treatment of tic douloureux, as an adjunct to the treatment of painful growths about the face, tongue and jaws and in masseter spasm.

2. By the use of the zygometer and protractor, an attempt has been made to render more accurate the description of the technic for injecting the maxillary and mandibular divisions of these nerves.

3. Clinical experience has coincided with anatomic studies. Injections of the maxillary division should be made from the 3 cm. mark. The needle should subtend an angle of 100 degrees from above downward in the horizontal plane, and 115 degrees from before backward in the vertical plane. The nerve is reached from 5 to 5.5 cm. from the surface.

4. Injections of the mandibular division should be made from the 2 cm. mark. The needle should subtend an angle of 90 degrees in the horizontal plane and 110 degrees from above downward in the vertical plane. The nerve is reached from 4.5 to 5 cm. from the surface.

5. By applying these facts to a series of injections clinically, the percentage of failures to reach the nerve trunks has been materially reduced.

3600 Walnut Street.

Syphilitic Interstitial Pneumonia.—The reasons for thinking this interstitial pneumonia syphilitic are: (1) the presence of typical syphilitic stenosis of the rectum and probable syphilis of the liver in the same body; (2) the situation of the interstitial pneumonia in the lower lobe, the presence of multiple white foci with radiating bands, without necrosis or calcification; (3) the enormous growth of vascular interstitial connective tissue containing many round cells in foci and perivascular concentrations.—R. Floyd, *Proc. New York Path. Soc.* **21**:64 (Jan.-May) 1921.

A TEST FOR DIPHTHERIA IMMUNITY AND SUSCEPTIBILITY

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A method of testing the blood for the presence of diphtheria antitoxin has been devised, which is quantitatively accurate, and in this respect superior to the Schick test; also, it has the further advantage that it is applied at a central laboratory on blood which can be sent long distances by mail.

The greater accuracy of this method over the Schick test can best be shown by first reciting some of the difficulties inherent in the Schick test.

Diphtheria toxin is subject to a progressive loss in its toxic power. The rate at which this deterioration takes place varies with the age of the toxin and the conditions of light and temperature under which it is kept, but it is always progressive and continuous. There is not, however, a corresponding loss in its combining value with antitoxin.

The accuracy of dosage is such an important factor that it is essential in the Schick test to use a very recently standardized and carefully kept toxin. A further inconvenience is the necessity of making dilutions on the day they are to be used, as the deterioration of diluted toxin is only a matter of hours. The process of accurately finding the minimal lethal dose of a toxin is so tedious, and so many guinea-pigs are required, that only the most conscientious manufacturers put out a reliable product.

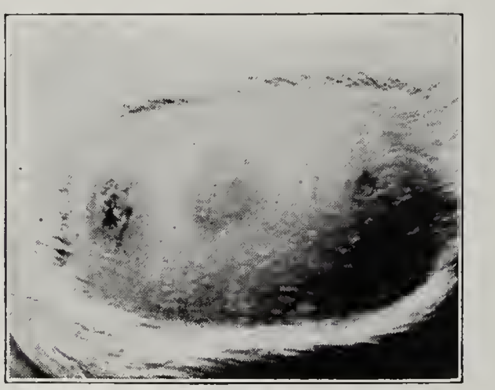

Fig. 1.—Varying degrees of reaction with varying amounts of antitoxin in the serum: The central lesion represents exactly $1/30$ unit of antitoxin. The lesion showing necrosis had the antitoxin diminished by $1/100$ unit per cubic centimeter of serum, and the lesion showing only the needle puncture had the antitoxin increased by $1/100$ unit per cubic centimeter.

These difficulties with toxin probably account for more variation in Schick test results than do faulty readings from inexperience and the occurrence of pseudoreactions.

There is another reason for aberrant results when the toxin is above suspicion and the operator is experienced, which may possibly be more than theoretical. The proportion of toxic units to combining units in toxins varies, no two being alike. If the toxin used is of a low minimal lethal dose value in proportion to its L + value, it may contain so much toxoid, which has as great an affinity for antitoxin as the true toxin, that a false positive reaction could result, which would be thus explained:

According to Schick, $1/30$ unit of antitoxin per cubic centimeter of the patient's blood is necessary before the $1/50$ minimal lethal dose of toxin used in the test is neutralized sufficiently to prevent a reaction. If $1/30$ unit is all the patient possesses, and the toxin used is so low in toxin units that the minimal lethal dose contains sufficient binding units to absorb twice that amount, it is conceivable that the antitoxin in the patient's blood, although sufficient to protect him ($1/30$ unit) is bound by the toxoid fraction of the toxin to such an extent that free toxin elements are left uncombined, thus giving a positive reaction which would be interpreted falsely.

It is hoped, in a future communication, to give the results of experiments verifying or disproving the foregoing contention. For the present, it is considered sufficient that the fault, if it exists, is, with the others mentioned, met by the test herein described.

Pseudoreactions in the Schick test, due to protein hypersensitiveness, are common and the source of much confusion in the hands of those whose experience in the application of the test is limited. Children with a moderate degree of protein sensitization and a sluggish reaction from it, and with an antitoxin content barely sufficient to give a negative reaction when all conditions are favorable, will give reactions that cannot be satisfactorily read by the most expert.

In the new test, advantage is taken of the fact that the skin of the guinea-pig is sensitive to the minutest amount of diphtheria toxin, and, as shown by Römer,[1] the results of intracutaneous injections of this substance are far more uniform in different animals than are the effects of subcutaneous injections.

This uniformity of intracutaneous reaction, regardless of the weight of the guinea-pig, is one of the features of the intracutaneous virulence test with throat cultures, as developed by Force and Beattie,[2] which method has proved so far superior to subcutaneous inoculation that it has been adopted as the standard method of the California State Hygienic Laboratory.

Zingher [3] has used a modification of Römer's technic for the estimation of the antitoxin content of serum; but, so far as I have been able to find, no one has suggested a modification of Römer's method for replacement of the Schick test in routine work.

One three-hundredth minimal lethal dose of toxin will produce a definite sharp reaction characterized by redness with some induration about 15 mm. in diameter, reaching its height in forty-eight hours and subsiding without necrosis. The reddened area fades quickly to a brownish color, and there is some furfuraceous scaling of the skin.

The smallest amount of toxin that will produce a definite necrosis of the skin is about $1/40$ minimal lethal dose. In the test, a predetermined strength of toxin is mixed with an equal volume of blood serum from the person to be tested, the mixture allowed to stand for half an hour at room temperature, and then 0.2 c.c. of the mixture is injected intracutaneously into the shaved skin of a white guinea-pig. The toxin used is standardized so that the amount contained in 1 c.c. is one thirtieth of the L + dose.

Since the L + dose of toxin is the amount that will neutralize one standard unit of antitoxin, leaving 1 minimal lethal dose of toxin free, it follows that 1 c.c. of one-thirtieth the L + dose mixed with 1 c.c. of serum containing $1/30$ unit of antitoxin will leave a balance of $1/30$ minimal lethal dose, and 0.1 c.c. of each will have a surplus of $1/300$ minimal lethal dose of toxin. The volume of mixture injected, 0.2 c.c., therefore, represents one three-hundredth of the L + dose of toxin, plus whatever antitoxin may be in 0.1 c.c. of the serum.

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[1] Römer: Ztschr. f. Immunitätsforsch. **3**: 344, 1909.

[2] Force, J. N., and Beattie, M.: An Intracutaneous Test for the Virulence of Diphtheria Bacilli in Field Cultures, to be published.

[3] Zingher, Abraham: A Modification of Römer's Intracutaneous Method for the Determination of Small Amounts of Diphtheria Antitoxin in Blood Sera, J. Infect. Dis. **19**: 557-564 (Oct.) 1916.

The reading is made in from forty-eight to seventy-two hours.[4] If the serum tested contains exactly $\frac{1}{30}$ unit of antitoxin per cubic centimeter, the amount stated by Schick as being the minimal protective amount, $\frac{1}{300}$ minimal lethal dose of toxin, will be free in the mixture and produce the reaction as noted above.

If the amount of antitoxin is greater, even by so small a margin as $\frac{1}{100}$ unit, no reaction will appear. If the amount of antitoxin is less than $\frac{1}{30}$ unit, even as much less as $\frac{1}{100}$, superficial necrosis will be plainly evident.

The reason for the sharpness of these differences with such small amounts of antitoxin can be appreciated when it is recalled that the L + dose of toxin (which just kills a 250 gm. pig when mixed with 1 unit of antitoxin) may contain more than 100 minimal lethal doses.

In the particular toxin used in the work on which this paper is based, there were 57 minimal lethal doses in the L + dose. This means that $\frac{1}{100}$ unit will almost neutralize 0.57 minimal lethal dose of toxin, and that 0.1 c.c. of a serum containing $\frac{1}{100}$ unit will neutralize 0.057, or $\frac{1}{17}$, minimal lethal dose.

A variation of $\frac{1}{17}$ minimal lethal dose one way or the other from the $\frac{1}{300}$ required to produce a definite reaction produces either necrosis or absolute lack of reaction, as the case may be. Figure 1 shows these three grades of reaction very distinctly. Figure 2 shows three actual tests with serum from three members of the laboratory staff. Between the two positive reactions is one negative showing no redness at all, indicating more than $\frac{1}{30}$ unit of antitoxin.

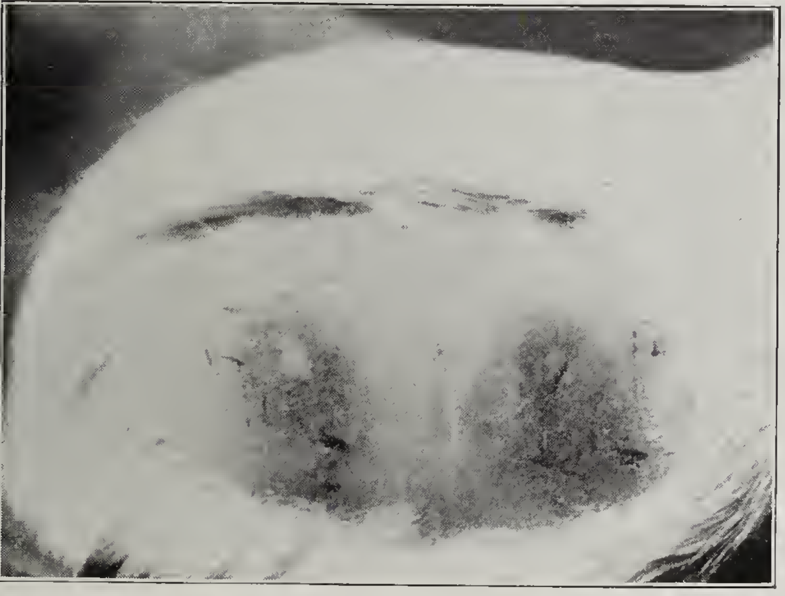

Fig. 2.—Three tests with human serum: A negative reaction (more than $\frac{1}{30}$ unit of antitoxin per cubic centimeter) is shown between two positive reactions. In the center of the red areola (to the left) a white area of necrosis is visible.

The extreme delicacy of reaction in this test, plus the fact that the guinea-pig is never sensitive to the proteins of diphtheria toxin, mean that the test is absolutely clear cut, definite, certain, and free from all confusing pseudoreactions. The great usefulness of the test, aside from its superior accuracy, lies in the fact that it is performed in the laboratory, blood specimens being sent in the same as for the Widal test. The technical difficulties in the application of the Schick test have militated against its use by physicians for occasional cases, and its principal use has been by those especially equipped, and particularly for the testing of large groups of children. The experimental work leading up to the conclusions expressed above was conducted with a standardized antitoxin from the Hygienic Laboratory of the United States Public Health Service. The method has been applied to the testing of a number of persons, some of whom had given unsatisfactory Schick tests, and the results were satisfactory in all respects.

The California State Hygienic Laboratory has added the test to its activities, and special outfits for the collection of the few drops of blood required are being distributed.

CHANGES IN FINGER NAILS AFTER RHEUMATIC FEVER AND TUBERCULOSIS *

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BALTIMORE

Since the time of Hippocrates, and perhaps before, postinfectious changes in the finger nails have interested clinicians. The nails are extremely sensitive to slight nutritional variations. Their manner of reaction may be very different. There are those older clinicians who have gone so far as to say, "Show me your nails and I will tell you whether you have passed through many infectious diseases."[1] Leon Parisot[2] aptly said that the nails and the skin are mirrors which reflect the disturbances of nutrition which fever and constitutional diseases have produced in our organism. "Show me your nails, and I will tell you who you are." While this assertion is by no means entirely true, it expresses well the hypersensitiveness of the nails to disease.

Changes in the nails have been described as following practically every disease. It might be well before proceeding to the substance of this paper to relate the course of events which led to these observations. The observations cover a period of more than eighteen months. The work was started at the Johns Hopkins Hospital in Baltimore and completed in the Pirquet Kinder-Klinik in Vienna.

I noted that, following acute rheumatic fever, the finger nails showed small depressions in the nail plate. These depressions for the most part presented a punched-out appearance. Their size varied from that of a pin point to that of a pin head. Some depressions were very superficial, and others were deep. They moved forward with the growth of the rest of the nail, and finally disappeared. They were generally distributed over the surface of the nail plate. Their arrangement presented no regular pattern. The depressions occurred with equal frequency on the nails of the two hands, most frequently on the index and ring fingers. Their number varied from one to ten, reaching in extreme cases, as high as twenty-two on each nail, the average number being from two to four.

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[4] A reading can be made in twenty-four, or even in twelve hours, when the serum tested has a marked increase over the 1/30 unit giving the standard reaction, for in this case no redness will be evident except a very small spot at the side of the needle puncture. Also, if the serum contains much less than the 1/30 unit, the result may be read as early, for in this case a small, white spot of beginning necrosis will be visible in the center of the red area, which is likely to be as large as from 20 to 25 mm. in diameter. With serum containing no antitoxin, the necrosis is severe in proportion to the ratio between L + dose and minimal lethal dose strength of the toxin used. In a later article the result of tests to perfect the technic in such a manner as to avoid severe reaction in the guinea-pig, and thus enable more tests to be applied to a single animal, will be given.

* From the Medical Department of the Johns Hopkins Hospital.

[1] Heller, Julius: Die Krankheiten der Nagel, Berlin, Hirschwald, 1900.

[2] Quoted by Heller (Footnote 1).

These changes were observed early following an attack of acute rheumatic fever in five cases, and late, namely, after nine years, in one case. All of these cases were characterized by the association of cardiac changes (endocarditis, etc.). These observations then led to a comparative study of the nails of normal persons and of those who had had acute rheumatic fever or chorea (rheumatic conditions—Cheadle's cycle). The object of this work was to determine the relationship of these nail changes to the rheumatic diseases. The observer, without knowing the history or diagnosis of any patient examined, made observations in the medical wards of the Johns Hopkins Hospital, in order to obtain statistics concerning the occurrence of these depressions (holes, stippling, pocking of the nails). At a later date those patients, in the medical or pediatric services, with a history or diagnosis of rheumatic fever or chorea, were selected for further observations.

RESULT OF OBSERVATIONS

When the diagnosis of those patients examined and the nail changes found were compared, it was discovered that of the 100 patients without a history of rheumatic fever, without cardiac changes, only four, or 4 per cent., showed the characteristic depressions (two patients, one each; one patient, two, and one patient, three); in marked contrast, of the twenty-two cases with a positive history of rheumatic fever or chorea, eighteen showed these changes in the nails to a greater or less degree (81.9 per cent.). Two of the negative cases were seen in the early stages of rheumatic fever at a time too early to expect the nail changes to be manifest.

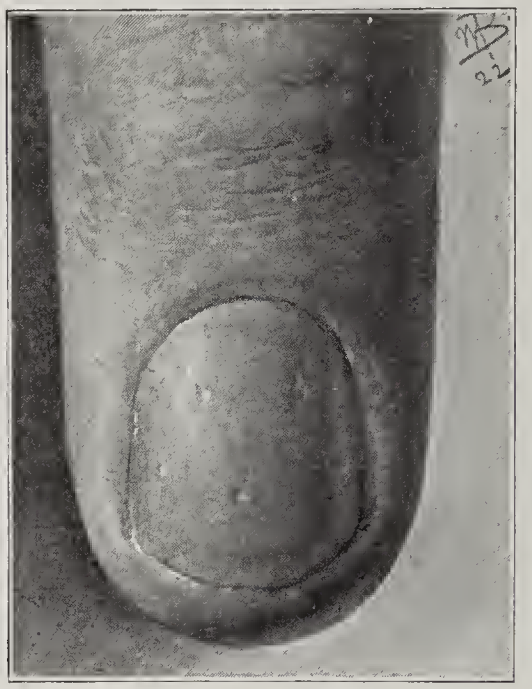
Fig. 1 (W. R., man, aged 24).—Ring finger of right hand; patient had rheumatic fever ten years before observations; depressions disappeared for three months to recur following an attack of grip. Typical depressions, varying in size and depth, scattered diffusely over the nail plate.

These nail changes are not apparent earlier than from six to seven weeks after the onset of acute rheumatic fever (in exceptional cases in five weeks), as it takes this length of time for nail changes occurring in the root to grow forward sufficiently to be observed on the visible portion of the nail plate. In one of the negative cases of the foregoing group the patient had had an attack of acute rheumatic fever thirteen years previous to observation, and in the other, three years before. Considering two of the cases observed as too early for the nail changes to be apparent, we are justified in omitting these cases from our consideration, leaving eighteen positive cases out of the twenty, or 90 per cent.

These facts were most suggestive, and further observations were then made. It should be mentioned that the material examined at the Johns Hopkins Hospital at this time did not afford a sufficiently good opportunity adequately to study the nail changes that occur after active tuberculosis, smallpox and other diseases that may lead to such nail changes. Hence, it was thought at this time that these changes were nearly conclusive in indicating previous acute rheumatic fever, chorea or some of Cheadle's cycle, particularly when cardiac changes were present. At the end of a year's period of observation this view was somewhat modified. I then believed that these changes in the finger nail occurred with greatest frequency following the rheumatic fever, chorea group, but that they also infrequently occurred in a small number of patients with no history of rheumatic fever. I had seen these nail changes following some cases of typhoid fever, scarlet fever, empyema, tuberculosis, etc. It was felt, however, that the presence of these depressions in a given case of endocarditis pointed to rheumatic fever as the most probable etiologic factor.

It was my good fortune, while at the Pirquet Kinder-Klinik in Vienna, to see several children with definite cardiac lesions who gave a history of rheumatic fever, and one child with a history of chorea. All of these patients showed the characteristic changes most clearly. When this work came to the attention of Prof. B. Schick he remarked that such depressions had been observed by him some years before in children with active tuberculosis. Their frequency suggested to him the possibility of their being characteristic of tuberculosis (and perhaps might be the result of tubercle formation in the nail root). After a period of observation, Professor Schick noted that these depressions in the nails occurred not infrequently with conditions other than tuberculosis. His opinion, therefore, is that these changes could not be used as a specific diagnostic sign for certain diseases. He suggested that observations of the nails of children in the pavilion for tuberculosis of the Pirquet Klinik be undertaken. The nails of sixty-five children in the pavilion for tuberculosis were examined, of which number more than 70 per cent. showed pocking or depressions.

ANATOMY OF THE NAILS

The nails are the corneous plates which cover the dorsal surface of the terminal phalanx of the fingers and the toes. The entire nail is not to be seen, the central (posterior) and lateral portions being hidden from view by the overlying skin. Proximal to the visible nail plate, the nail continues concealed from the naked eye as far as the proximal end of the terminal phalanx, at which point the nail begins. The concealed central (posterior) portion is called the nail root (radix unguis); the visible anterior portion, the nail body or nail plate (corpus unguis). That portion of the skin which lies immediately under the nail body is the nail bed (solum unguis). The nail bed runs without lines of demarcation into the skin of the finger tips. The fact that a portion of the nail is concealed (the central portion, radix unguis) is most important, as it is evident that changes brought about by alterations of the germinal epithelium of the nail root will not be seen until a sufficient amount of time has elapsed for growth to take place from the central end of the terminal phalanx, where the changes are first present to the visible portions of the nail plate. The matrix is that portion of the nail bed which lies under the white portion of the nail plate. Its distal end coincides with the convex line of the lunula, where the nail wall covers part of the posterior portion of the nail plate, resulting in a white convex bowing over the base of the nail plate. It is generally accepted that the matrix can produce normal nail substance. That the nails are supplied by nerves is well known.[1]

PHYSIOLOGY OF THE NAIL

Normally, the nail grows on the average of 1 mm. in ten days (i. e., in one day 0.1 mm.).[3] The growth is most rapid in adults, and slowest in old age,[2] and more rapid in summer than in winter.[1] Berthold[4] found that normally the nails on the right hand grew more quickly than the nails on the left hand. It is well known that nail growth is often diminished in acute infections (conditions with fever), a process similar to the cessation of the growth of hair in the course of or following some infections. A physician reported to me that, subsequent to an attack of acute rheumatic fever at the age of 45, he had noted the cessation of the growth of one of his finger nails for more than a year.

On the average, according to various authorities, the nail completely renews itself in 105 or 106 days.[5] However, I found the average size of the nail of the adult to be 13 mm. Accepting that the nail grows 1 mm. in ten days, it should take 130 days for the nail to be regenerated, if the nail is of normal size. In small children the rate of growth found was 0.64 mm., and in older children 0.84 mm. in ten days.[5] Since the nail of the child is smaller than that of the adult, one can readily understand why the nails are regenerated within from eighty to ninety-six days[6] in the child, and in from 120 to 132 days in the adult, despite the slower rate of growth given by Dufour.

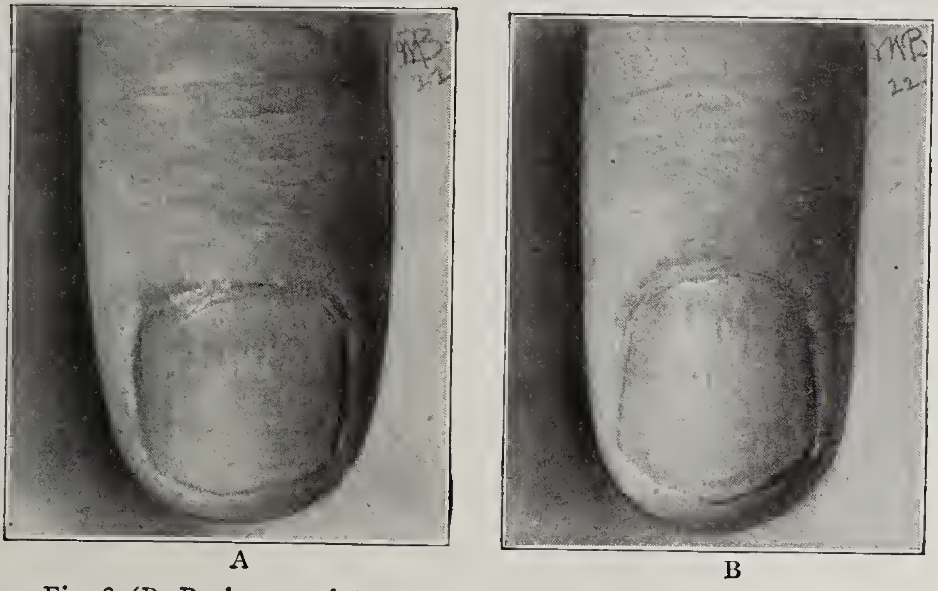

Fig. 2 (R. R., boy, aged 11, Johns Hopkins Hospital).—Patient had acute rheumatic fever six months before observations; at present, subacute bacterial endocarditis. *A*, Thumb of left hand: Small depressions arranged in horizontal rows; incomplete lengthwise furrows. *B*, Big finger, right hand: Many very small and superficial depressions; also complete and incomplete lengthwise furrows.

Schick[6] found that the period of appearance of the physiologic transverse furrow of the newly born was on about the thirty-seventh to the fortieth day after birth. The thirtieth day was the earliest and the ninth week the latest time of appearance. The average duration of the period that the transverse furrow was visible was fifty days; in an exceptional case its duration was 100 days. These observations have both a practical and a medicolegal interest. An infant with a transverse furrow of the finger nail which is located 1 mm. from the proximal end of the visible nail plate is at least 28 days old, and is apparently not older than 9 weeks.

CHARACTER OF THE NAIL CHANGES

Small depressions, superficial for the most part, varying in size from that of a pin point to that of a pin head, are seen in the nail plate. These depressions appear punched out, as if a curet had scooped out small areas (Figs. 1, 2, and 3). The depressions are usually deepest in the center, with slightly sloping sides. They most frequently occur scattered diffusely over the nail plate with no regular arrangement, but they may also occur in horizontal and longitudinal rows (Figs. 2 and 3). These all grow forward with the nail plate and are eventually cut off. They may be found in large numbers (twenty-two) in a single nail, or there may be only a single depression.

These depressions may occur on all of the fingers, but have special preference for the index and ring fingers. Their frequency is as great on the right hand as on the left. These changes can also be observed on the toe nails; but they are much less distinct, largely owing, probably, to the use of shoes. However, that the wearing of shoes is not the sole causal factor in obscuring the changes in the toe nails is shown by the fact that the physiologic horizontal furrows seen in the newly born are not to be seen distinctly on the toe nails.

I have never found these depressions or stippling or pocking of the finger nails before five weeks have elapsed after the onset of acute rheumatic fever, chorea, etc. This period corresponds to the time required for the growth of that portion of the affected unguis beneath the skin, so that the injury to the nail germinal tissue can be seen. This time relationship makes it extremely probable that the injury to the nail is dependent on the acute rheumatic fever or chorea. These depressions may appear much later, depending on the time of onset of the damage to the nail germinal tissue, and the rate of growth of the nail. They may remain stationary on the nail plate, if temporary cessation of nail growth takes place. Since normally it takes from 120 to 130 days for the nail to be completely regenerated, these depressions should disappear about this time if nail growth is not retarded.

Depressions have been seen in patients who have had acute rheumatic fever five, eight, ten and even fifteen years previously. One may observe these depressions for a period of months and years, and then suddenly they may disappear, not to return again, or to reappear at some subsequent time. I had the opportunity of seeing these depressions disappear entirely in a patient in whom they had been very marked, and then recur to a marked degree three months later following an attack of grip (Fig. 1). I have noted the depressions appear after rheumatic fever in patients whose nails I had inspected and found unmarked before the onset of the acute illness.

Virchow[7] described similar circular depressions appearing as if punched out deep in the nail folds.

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[3] Dufour, L.: Bull. Soc. Vaudoise d. sc. naturelles **11,** 1872. Schick, B.: Jahrb. f. Kinderh. **67,** 1908.

[4] Berthold, A. A.: Verhandl. d. Göttingen gelehrten Gesellsch., 1850.

[5] Dufour (Footnote 3).

[6] Schick (Footnote 3).

[7] Virchow, Rudolf: Cellular Pathology, 1860, translation by Chance, London.

These occurred in smallpox when the pocks developed in the nail folds.

Heller[1] saw small furrows in the posterior third of both thumbs of a man, aged 30, with acute rheumatic fever. These furrows did not extend over the entire breadth of the nail plate, but were situated in the center of the nail plate with a breadth of from 2 to 3 mm. These furrows of Heller fall into the third group of the classification given below. These are the only two references in the literature in which I found a description at all like that of the depressions here given.

Other nail changes of importance occurring in association with depressions in the nail are:

1. *Transverse grooves or horizontal furrows.* These are particularly common in active tuberculous disease, and less frequent in the rheumatic fever group; they are common following scarlet fever,[8] and have been described following measles, typhoid, atrophy (decomposition), pemphigus[9] and congenital syphilis.[10] One should not fail to mention the physiologic transverse furrows of the newly born.[6] Recently I had the opportunity of observing transverse furrows in the finger nails following epidemic (lethargic) encephalitis.

2. *Lengthwise grooves or longitudinal furrows.* These are not uncommon in the rheumatic fever group and tuberculous disease, and also following many acute infectious diseases.

3. *Incomplete or transitional group.* These are incomplete lengthwise and transverse furrows varying in size. A case described by Heller corresponds to the incomplete transverse furrow group. They are seen commonly in the rheumatic fever group (Fig. 2) and tuberculous disease (Fig. 3).

4. *Deformity of the nail, clubbing, etc.* These may be associated in both disease groups.

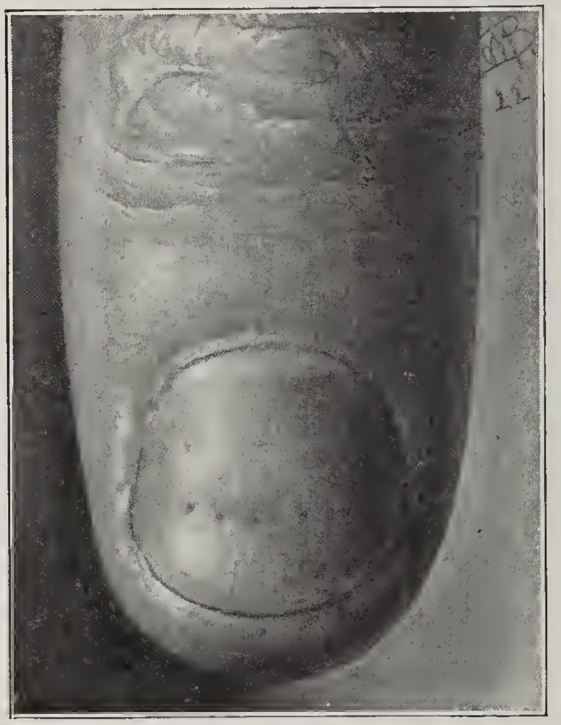

Fig. 3 (H. D., girl, aged 15, Pirquet Klinik).—Thumb of right hand. Patient had had pulmonary tuberculosis with cavity formation for one year; horizontal row of depressions, some of sufficient breadth to belong to the group of incomplete transverse furrows. (Reproduction from moulage made in Vienna.)

CLASSIFICATION OF CHANGES

Hypothetically, one may classify the changes that occur in the nail root so as to explain easily the various alterations in the nail plate that have been described:

A. General diffuse injury to the nail germinal epithelium of short duration.

B. Focal or local punctate injury to the nail germinal epithelium of short duration.

C. Focal injury to the nail germinal epithelium: (*a*) of long duration; (*b*) of permanent duration.

D. General diffuse injury to the nail germinal epithelium: (*a*) of long duration; (*b*) of permanent duration.

E. Tendency of diffuse or focal (punctate) injury of short or long duration to recur (on basis of locus minoris resistentiae).

A. *General Diffuse Injury to the Nail Germinal Epithelium of Short Duration.*—The nail bed is thrown out of normal function across its entire breadth. The result is that, for a very short period of time, the germinal epithelium does not function normally, and, during this period of dysfunction, produces inferior and thinner nail substance. When the nail substance is again produced normally, this period of dysfunction is represented on the nail plate by a transverse groove, proximal and distal to which is normal nail substance. The breadth of the groove depends on the length of time that the germinal epithelium is thrown out of function.

B. *Focal, Local, Punctate Injury to the Nail Germinal Epithelium of Short Duration.*—Wherever there is an area of germinal epithelium thrown out of function for a short period of time, that area of the nail plate which is produced by the injured portion is inferior and thinner in quality than the remaining nail substance which is being produced by normal uninjured germinal epithelium. The result is a small depression or pit in the nail. But if the injury is more widespread, the result is a short, horizontal groove. Dependent on the size of the injury is the production of depressions or grooves.

C. *Focal, Punctate Injury to the Nail Germinal Epithelium.*—(*a*) Of Long Duration: Here it is easy to see that the resulting change in the nail plate will be a longitudinal or lengthwise groove, as the injury is in only one portion of the nail root, and this area alone is thrown out of normal function, while the other portions of the germinal epithelium are functioning efficiently. It need not be mentioned that one may see all degrees of change between a focal injury of fleeting and one of long duration, according to the duration of which one will find a depression in the nail plate, a short longitudinal groove or a complete longitudinal groove.

(*b*) Of Permanent Duration: The result is a permanent longitudinal groove.

D. *General Diffuse Injury to the Nail Germinal Epithelium.*—(*a*) Of Long Duration: The result is first the appearance of a horizontal furrow due to the line of demarcation between the normal and thinner nail substance, with its final disappearance and the formation of an inferior and deformed nail.

(*b*) Of Permanent Duration: The result is the scar and permanent malformation of the nail.

E. *Tendency of Diffuse or Focal Injury to Recur on Basis of Locus Minoris Resistentiae.*—For example, the recurrence of the depressions following grip in a rheumatic fever case. I have previously mentioned the fact that these depressions disappear to reappear. My interpretation is that a certain area of the germinal epithelium of the nail root is thrown out of function temporarily. This is represented by a small depression if, after a short interim, the injured area is able to produce comparatively normal nail. However, a locus minoris resistentiae exists which may react to slight nutritional disturbances of the nail (infectious, circulatory, toxic, trophic, embolic, internal secretory, nervous, etc.). The spot of recovered function is again unable to perform its work properly, and one finds either a recurrence of depressions and transverse grooves, or the production of longitudinal furrows.

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[8] Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, Ed. 2, **2**: 145.

[9] Swoboda: Tr. Gesellsch. f. inn. Med. u. Kinderh., May, 1907.

[10] Hochsinger: Tr. Gesellsch. f. inn. Med. u. Kinderh., May, 1907.

It is well known that rheumatic fever, chorea and tuberculosis are diseases in which relapses and recrudescences frequently occur. It is in just these diseases, therefore, that one would expect to find most frequently recurring changes in the nails.

It should be emphasized again that these changes are found in active tuberculous disease. They are not found in tuberculous infection without active disease. It is interesting to note that Heller, in discussing the changes in the nails following tuberculosis, does not mention the depressions described here.

The observations on which this study is based were made in more than 300 cases. Sixty-five of the patients had active tuberculosis (70 per cent. positive). Two hundred patients, without rheumatism or active tuberculosis, served as controls, with nine positive changes (4.5 per cent.). Of thirty-three patients with a history of rheumatic fever, more than 90 per cent. showed these depressions. Of eight patients with chorea, 100 per cent. had these changes. The pocking was found in one case of Hodgkin's disease, two cases of subacute bacterial endocarditis (perhaps the old valvular lesions were rheumatic in origin), following scarlet fever, empyema, thromboangitis obliterans and heart block. A small number was found in which the origin of the changes was obscure. The possibility exists that these patients had passed through abortive, unrecognized forms of rheumatic fever or active tuberculous disease.

As to syphilis, a large number of control patients were studied from Ward M of the Johns Hopkins Hospital, where the incidence of this disease is very high. In this group no depressions were found.

Examinations of the capillaries of the nail bed of selected patients from this group by the method used by Lombard,[11] Weiss,[12] and Danzer and Hooker [13] revealed no characteristic alterations.

PATHOLOGIC EXAMINATION OF THE NAIL

In only one case were sections of the nail studied. Macroscopically, there was a depression in the nail bed immediately beneath the depression in the nail plate. It would not be justifiable to venture an opinion on the histologic study of one case. At a later date I hope to undertake a thorough histologic study of the changes.

One must be careful not to forget that trauma may produce most unusual changes in the nail. Whenever a history of trauma to a nail was obtained, the case was eliminated from the series. Manicuring of the nail often affects the nail root as well as the nail plate and nail bed. It is important, therefore, to secure information as to whether the patient's nails are frequently manicured.

COMMENT AND CONCLUSIONS

1. Small, circumscript depressions (pocking, stippling) occur in the nails following acute rheumatic fever and chorea in approximately 95 per cent. of the cases, particularly when heart complications are present. These changes are temporary and may disappear, to reappear after a recurrence of the same disease or some other infectious disease. One may see these changes as late as fifteen years after the last attack of rheumatic fever. These changes do not appear, as a rule, before six weeks have elapsed after the patient is taken ill, and often appear at a later date. The earliest time of their appearance is five weeks. These depressions are not infrequently associated with horizontal furrows, most often incomplete, and are not uncommonly seen together with lengthwise furrows, complete and incomplete.

The nails of all patients with heart disease (endocarditis, etc.) should be examined for these changes. It is felt that these changes, occurring in the absence of active tuberculous disease and with an associated heart lesion, are confirmatory, though not definite evidence, that the patient has passed through an attack of acute rheumatic fever or chorea, and that a heart lesion, if present, is probably rheumatic in origin. Several cases of valvular disease of undetermined etiology have shown these changes.

CHANGES IN NAILS OF VARIOUS GROUPS OF PATIENTS

	Number of Patients	Changes Positive	Changes Negative	Percentage Showing Changes
1. Definite history and diagnosis of acute rheumatic fever; nails examined 5 weeks or more after onset	33	31	2	93.9
2. Definite history of rheumatic fever; nails examined before 5 weeks after onset; no further observations	4	0	4	0
3. Definite history and diagnosis of chorea; nails examined 5 weeks or more after onset	8	8	0	100
4. Definite history and diagnosis of chorea; nails examined before 5 weeks after onset; no further observations	4	0	4	0

5. Possibility of rheumatic fever:	Number	Positive	Negative
(*a*) Aortic insufficiency without syphilis	1	0	1
(*b*) Mitral insufficiency	1	0	1
(*c*) Pericarditis, unknown etiology	1	1	0
(*d*) Subacute bacterial endocarditis	3	2	1
(*e*) Heart block, boy, aged 11 years	1	1	0
Total	7	4	3

Percentage showing changes, 57.1

5. Conditions other than rheumatic fever group and tuberculosis:	Number of Cases
Scarlet fever	2
Hodgkin's disease	1
Empyema	1
Typhoid	1
Following trauma	6
Thromboangitis obliterans	1

	Number of Patients	Changes Positive	Changes Negative	Percentage Showing Changes
7. Active tuberculous disease	65	46	19	70.8
8. Control group	200	9	192	4.5

Total number of cases in Groups 1 and 3 41
Total number of cases in Groups 1 and 3 showing positive nail changes 39
Percentage of rheumatic fever-chorea group (seen 5 weeks after onset of disease) showing positive changes 95.1

2. These changes also occur in active tuberculosis in 70 per cent. of the cases, but they are often associated with transverse and longitudinal grooves and clubbing of the finger nails.

3. The depressions have been found in 4.5 per cent. of control cases in which no definite etiology could be ascertained, and they have also been found occasionally after a variety of diseases, such as scarlet fever, smallpox, empyema, typhoid and Hodgkin's disease.

1515 Eutaw Place.

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[11] Lombard: Am. J. Physiol. **29**: 335.
[12] Weiss: Centralbl. f. Physiol. **28**: 1375, 1914.
[13] Danzer, C. S., and Hooker, D. R.: Am. J. Physiol. **52**: 136 (May) 1920.

The London Foundling Hospital.—The old Foundling Hospital in London, made famous by Dickens and other writers, is soon to be moved from the present site in central London to a less expensive location.

OBSERVATIONS ON THE USE OF MILK INJECTIONS IN THE TREATMENT OF CHRONIC ARTHRITIS

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Having been struck with the inefficacy of the various types of treatment in many cases of chronic arthritis, and having sought in vain to relieve those patients who had followed the usual procedures, as removal of foci of infection, diet, electrotherapy, hydrotherapy and salicylate therapy, with little or no avail, I turned to the use of foreign proteins parenterally, and treated a series of such patients with the injection of milk intramuscularly, and have made certain observations.

These observations include, in all, fifty patients, with a total of 135 injections. They are not selected cases, excepting that certain requisites were laid down before beginning treatment: that (1) no case should have had a duration of less than six months, or longer than five years; (2) the deformity, swellings and interference with function should be but slight or moderate, as it would be unfair to judge in marked or hopeless cases, and (3) no other treatment should be attempted during the period of observation. Many of these patients had previously had various suspected foci of infection removed—apical abscesses, tonsils, etc.—but many had such suspected foci as metritis, salpingitis, appendicitis, cholecystitis and colitis, which required further operation or treatment, and which for one reason or another they were wont to neglect. During the course of this treatment and observation no attempt was made further to attack these foci or to administer any other medication.

PREPARATION OF THE MILK AND ADMINISTRATION

The milk was prepared by heating in a closed vessel at 100 C. (in boiling water) for twenty minutes. By excluding the air in the container, no film of caseinogen formed, and to further insure ease of administration the milk was filtered (although this was unnecessary). The dose administered was from 4 to 6 c.c. for the first injection, from 5 to 8 c.c. for the second, and from 7 to 10 c.c. for the third, fourth or fifth injection. Usually two or three injections were administered to a patient, and if of no value, the treatment was discontinued after the second or third injection. Five patients received five injections. The interval between injections varied from three to seven days, depending on the reaction. The site of administration was deep into the buttock, prepared in the usual manner.

TABLE 1.—DISTRIBUTION OF INJECTIONS

Number of Cases	Number of Injections	Total Number of Injections
5	5	25
5	4	20
10	3	30
30	2	60
Total 50		135

THE REACTION

Following about half of the injections, especially the smaller ones, little or no reaction occurred. When the reaction did occur, it would begin to manifest itself in from six to twelve hours, and on three occasions did not commence until twenty or twenty-four hours later. It consisted of the picture so well described by Peterson, Schmidt and Koznelson, and others—chills, fever, headache, depression, nausea and vomiting. On six occasions the fever and malaise persisted for five days (and incidentally these patients later showed the most marked improvement).

RESULTS

Following the disappearance of the reaction, in practically all cases, there appeared a certain euphoria and feeling of well-being, which did not occur with any other method of treatment. Although short-lived in many, it was encouraging to the patient, and many begged for the second or third injection.

TABLE 2.—BLOOD SUGAR AFTER THREE, FOUR AND FIVE INJECTIONS, IN EIGHT PATIENTS IN WHOM IT WAS ABOVE 130

Patient	Original Blood Sugar	Blood Sugar After Three Injections	Blood Sugar After Four Injections	Blood Sugar After Five Injections
1	136	120	...	110
2	140	135	115	...
3	151	120	110	...
4	153	...	120	112
5	160	...	...	125
6	165	...	130	140
7	170	...	130	...
8	175	...	170	...

In about one third of the patients (eighteen) no improvement seemed to appear. Of the remaining thirty-two, five seemed to clear up entirely, leaving no trace of the disease, and the remainder (twenty-seven) were more or less improved. Although untreated cases of arthritis may show spontaneous remissions, and improvement, still the results were so characteristic and uniform when they occurred that they could not be attributed to such natural causes or to previous treatment.

The degree of improvement was based on the decrease in swelling and pain, increase in function, and general feeling of well-being. In many instances the amount of indefinite muscular pain (probably myositis) was markedly alleviated. Two cases were accompanied by a definite sciatica, which was not affected, although in both these patients there was some improvement in the joint symptoms. The multiplicity of joints involved apparently played little part in affecting the improvement, excepting when the extent or degree of involvement was marked. Six of the patients who were improved had more than two separate sets of joints involved—interphalangeal joints, wrists, ankles or knees—while among those who were not improved there were only three such cases.

EFFECT ON BLOOD SUGAR

The chemical analysis of the blood in those patients in whom it was performed (thirty-one) revealed sugar in amounts of from 90 to 175 mg. per hundred cubic centimeters. In only eight instances was the amount above 130 mg., and in six of these, after three, four or five injections, the amount was reduced so that no one of these showed more than 130 mg. This is suggestive of the results Pemberton has shown to follow removal of infected foci, i. e., increase in sugar tolerance.

CONCLUSIONS

1. There are a large number of patients, having chronic arthritis, who are not relieved by removal of

apparent foci of infection, or by any of the means of treatment at our disposal (perhaps due to hidden foci, secondary foci in and about joints, metabolic or endocrine change, etc.).

2. About 10 per cent. of the patients treated by this method in this series were relieved of all complaints, and objectively "cured." Whether these are permanent results we are not able to state, as the time thus far elapsed for these "cured" cases varies from two to six months.

3. About 55 per cent. were improved after having tried many or all types of treatment with practically no relief.

4. A certain degree of reaction is necessary, before we can hope to obtain an improvement, but the degree of reaction required is apparently much less than after such methods of nonspecific therapy as typhoid and other vaccines intravenously, and the many other nonspecific methods.

5. The blood sugar, in those cases in which before commencing the treatment it was increased (above 130 mg. per hundred cubic centimeters) was reduced as improvement occurred.

6. The administration of milk parenterally as a nonspecific protein is deserving of further study and trial; and, although not heralded as a "sure cure" for arthritis, it so often gives some relief, euphoria, and occasionally cessation of the process, that it probably will find a place in our therapeutic armamentorium.

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CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

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PRELIMINARY REPORT

During the course of some experiments on the efficiency of betanaphthol in the treatment of hookworm disease, a report by Dr. Maurice C. Hall on carbon tetrachlorid was received and it was decided to make use of the limited supply obtainable of the drug in an attempt to determine its action. Through the courtesy of Dr. Nichols of the Ceylon Government Bacteriological Laboratory, 60 c.c. of carbon tetrachlorid was obtained.

The work has been carried out in the Bogambra prison at Kandy, where prisoners volunteered to take the drug, it being explained to them that the treatment was quite new and the physiologic action of the drug in large doses unknown. Among the volunteers were men who had received the previous treatment with large doses of betanaphthol, and also a girl who had been treated with chenopodium. A prisoner, condemned to be hanged, also volunteered to receive the treatment, and was given the maximum dose of 10 c.c. of carbon tetrachlorid. This man will be executed, and a necropsy performed after the execution, a thorough search being made for helminths.

The drug was administered by mouth, on an empty stomach, no food being allowed from 4: 30 p. m. until after treatment the next morning. Food was allowed immediately after treatment, the meal consisting of curry and rice. Gelatin capsules were unobtainable at the time of the experiment; consequently the drug was given in about 20 c.c. of water. No purge was given before or after, except in one case. This man had not had a bowel movement for two days previous to the treatment. He was given magnesium sulphate three hours after the carbon tetrachlorid.

The cathartic action of the drug was marked, in most of the cases the bowels moving in from three to five hours after administration of the carbon tetrachlorid. In the case of the 10 c.c. dose, the result was a copious, semiliquid stool in which the odor of carbon tetrachlorid was quite pronounced. In only one case was a forced stool passed.

In one case an ascarid was passed three hours after the administration of the drug.

Urine examinations were made in two cases, both before and after treatment. In the case of the condemned prisoner, the urine specimen both before and after treatment showed no abnormality. In the urine of the second case examined, albumin and a few granular casts were found before treatment. After treatment there was apparently no change in the urine. A dose of 3 c.c. of the drug in this case produced only slight giddiness, and the heart action was practically undisturbed.

In all but one case the only symptoms complained of were slight giddiness and a sensation of weight in the stomach. In one case, diplopia and nausea were experienced. The prisoner receiving the 10 c.c. dose of carbon tetrachlorid complained of giddiness, nausea and drowsiness. After sleeping for four hours, his giddiness had diminished and he experienced no further nausea. His condition was quite normal after a period of eight hours. The giddiness complained of by the majority of the prisoners was undoubtedly augmented by hunger following the long period of fasting before treament. In some of the cases no food was taken by the patients from 4: 30 p. m. until 11: 30 a. m. the following day.

Little effect was produced on the heart action, even in the case in which the dosage was 10 c.c., as shown in Table 2.

Table 1 gives the result of the preliminary microscopic examination of stools in the fourteen cases under consideration.

TABLE 1.—RESULT OF PRELIMINARY MICROSCOPIC EXAMINATION

Case	Hookworm	Ascaris	Trichuris	Oxyuris
1	+	–	–	–
2	+	–	+	–
3	+	+	+	–
4	+	+	–	–
5	+	+	–	–
6	+	+	–	–
7	+	–	–	–
8	+	+	–	–
9	+	+	–	–
10	+	–	+	–
11	+	–	–	–
12	+	+	–	+
13	+	+	+	–
14	–	–	–	–

Following the two treatments (110 grains, or 7 gm.) of betanaphthol in a previous experiment carried on at the Bogambra prison, an average worm count of 8 uncinarias for each patient was obtained; following the fourteen treatments with carbon tetrachlorid, 822 hookworms were obtained, or an average of 58.7 for each patient. Four of these patients had expelled hookworms after betanaphthol treatment. Patient 1 received 110 grains of betanaphthol in two treatments, and expelled seventeen necators. After 4 c.c. of carbon tetrachlorid, this patient expelled 399 necators and one trichuris. A period of six weeks elapsed between the last treatment with betanaphthol and the treatment with carbon tetrachlorid. Patient 3 received two treatments (110 grains) of betanaphthol and expelled six necators. After 3 c.c. of carbon tetrachlorid, fourteen necators and one female ancylostoma were passed. The same period elapsed between the last dose of betanaphthol and the carbon tetrachlorid. Patient 11 received two doses of betanaphthol, 110 grains, and expelled seventeen necators. After 4 c.c. of carbon tetrachlorid, this patient passed sixteen necators and twelve oxyurids. Patient 14, aged 8, received 8 minims of oil of chenopodium, and passed eighty-two necators and eight ascarids. Two weeks after the chenopodium treatment her stool was negative for hookworm ova. A further treatment with 1.5 c.c. of carbon tetrachlorid produced no helminths.

TABLE 2.—WORM COUNT

				Worm Count *																	
				January 20			January 21†			January 22			January 23			January 24			January 25		
Case	Weight, Lbs.	Dose, C.c.	Date	H.	A.	O.	H.	A.	O.	H.	A.	O.	H.	A.	O.	H.	A.	O.	H.	A.	O.
1	120	4	Jan. 20	399	0	2	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
2	103	4	Jan. 20	36	0	8	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
3	81½	3	Jan. 20	14	0	0	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
4	94	4	Jan. 20	18	1	31	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
5	121	4	Jan. 20	26	1	0	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0
6	125	5	Jan. 20	..	0	..	..	0	..	0	..	..	141	8	72	0	..	..	..	..	0
7	128	4	Jan. 21	..	0	..	..	0	..	0	..	..	7	4	10	0	..	..	0	1	0
8	126½	4	Jan. 21	..	0	..	..	0	..	30	0	21	0	..	..	0	..	..	..	..	0
9	130	3	Jan. 21	..	0	..	..	0	..	0	..	..	37	1	8	0	..	..	..	..	0
10	96	3	Jan. 21	..	0	..	..	0	..	3	0	0	0	..	..	0	..	..	..	..	0
11	118	4	Jan. 21	..	0	..	..	0	..	16	0	12	0	..	..	0	..	..	..	..	0
12	120	10	Jan. 20	..	0	..	..	0	..	8	4	13	47	0	15	0	0	22	0	0	17
13	113	4	Jan. 20	..	0	..	..	0	..	0	..	..	40	0	31	0	..	..	..	..	0
14	48	1½	Jan. 23	..	0	..	..	0	..	0	..	..	0	..	..	0	..	..	..	..	0

* H, hookworm; A, ascaris; O, oxyuris.

† Stools collected for this day were screened with stools on 22d.

TABLE 3.—PULSE AND BLOOD PRESSURE

				Before Treatment			One Hour After			Two Hours After		
					Blood Pressure			Blood Pressure			Blood Pressure	
Case	Age	Weight, Lbs.	Dose, CCl_4 C.c.	Pulse	Systolic	Diastolic	Pulse	Systolic	Diastolic	Pulse	Systolic	Diastolic
1	22	120	4	70	118	98	56	123	98	64	120	96
2	38	103	4	72	101	88	86	88	74	81	98	80
3	51	81½	3	71	137	118	68	135	118	72	136	115
4	35	94	4	57	104	93	74	102	89	68	102	90
5	24	121	4	62	84	72	70	92	76	66	90	74
6	34	125	5	61	103	92	90	108	91	82	104	94
7	45	128	4	56	114	92	54	106	84	58	108	82
8	19	126½	4	46	119	96	42	101	84	44	109	91
9	40	130	3	51	110	92	48	108	94	48	111	90
10	34	96	3	48	112	90	62	102	90	54	108	88
11	22	118	4	56	112	91	58	114	92	58	114	91
12	32	120	10	105	110	88	88	117	95	86	114	90
13	30	113	4	62	101	81	60	102	81	62	102	80
14	8	48	1½	110	90	74	96	88	76	98	86	75

Unfortunately, sufficient carbon tetrachlorid was not available for further work directed toward the determination of the optimal dose. In the fourteen cases treated, the maximal dose given was 1 c.c. per 5.5 kg., and the minimal 1 c.c. per 19.6 kg.

Patient 1 passed one trichuris the day following treatment. This was the only case in which a trichuris was recovered.

SUPPLEMENTARY REPORT

In the foregoing I have outlined a treatment administered to fourteen selected patients in the Bogambra prison at Kandy. Thirteen of the fourteen were positive for hookworm.

Examination of the stools from these prisoners, after a period of three weeks had elapsed following treatment, showed all fourteen negative for hookworm; seven of the eight cases which were positive for ascarids were found to be negative following treatment.

Patient 12 was executed, February 11, twenty-two days after treatment with 12 c.c. of carbon tetrachlorid, which was given in two doses. The first dose consisted of 10 c.c. of the drug, followed one week later by 2 c.c. A postmortem examination was performed, and the entire digestive tract from the pylorus to the anus was removed. Before removal, the bowel was tied off through the pylorus, at the junction of the ileum with the cecum, and at the splenic flexure. The four sections were placed in separate receptacles, opened, and their contents carefully washed out and screened for helminths. In the first portion, which included the duodenum and the portion of the pylorus of the stomach, no parasites were found, and none were found in the jejunum or ileum. In the ascending and transverse colon, 628 oxyurids were recovered, and in the descending colon, sigmoid and rectum, 2,864 oxyurids and thirty-two trichurids.

The spleen was normal in size and consistency. The liver showed no lesions on macroscopic examination, and the kidneys were normal in appearance.

CONCLUSIONS

1. Carbon tetrachlorid given in 10 c.c. doses to a man produced no ill effects as far as could be seen on microscopic examination.

2. Twelve cubic centimeters of carbon tetrachlorid removed all hookworms and ascarids.

3. The drug apparently had little effect on trichurids and oxyurids.

STERILITY STUDIES

PRELIMINARY REPORT *

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AND
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DETROIT

In the course of our routine application of the Rubin test in demonstrating the patency of the fallopian tubes, we have discovered several interesting facts which we believe to be of great value in this work. Dr. Rubin, and more recently Dr. Peterson, have thoroughly demonstrated the harmlessness of this procedure, and it is with their work as a foundation that we have been undertaking our experimental studies.

We have been using the test as simplified by Dr. H. D. Furniss.[1] The patient is put in the lithotomy position, and the buttocks are elevated. A speculum is introduced, and the cervix is wiped clean and painted with iodin. A cannula with a rubber tip, similar to the one that Peterson uses in his technic, is then introduced into the cervix until the rubber fits snugly. We find that simple pressure against the os is enough to hold it in place without subjecting the patient to the pain of grasping the cervix with a tenaculum. The vagina is then filled with boric acid solution, and a 50 c.c. syringe, filled with carbon dioxid with an attached manometer, is fitted to the cannula. Leakage at the os is readily discovered by the escape of bubbles out of the solution in the vagina.

Steady pressure of not more than 200 mm. of mercury (although we have repeatedly shown that higher pressure may be used without danger) is maintained until the gas passes freely through the tubes, or it is evident that they are not patent. Both Peterson and Rubin admit that they can only say that one or both tubes are open. We believe, however, that we can tell not only whether one tube is occluded, but also which is the affected one. This is done in the following manner: The operator or an assistant listens over the lower abdomen with a stethoscope while the injection is being made. At first there is no sound. Then, as the tubes open up, there is a high pitched bubbling heard over the side corresponding to the tube which opens first. This can be heard very distinctly in the quadrant corresponding to the patent tube and very faintly on the other side in those cases in which but one tube is opened. We have several times noted the bubbling sound in one quadrant only to find that, on raising the pressure in the sypringe, the second tube apparently opens, and the sound is heard equally on the two sides. As the gas first comes through, the sound is higher pitched; but, as the tube opens up and larger bubbles come through, the pitch drops. In a recent case we heard a rather low pitched bubbling in the right quadrant, and no sound on the left. On raising the pressure we heard a shrill, high pitched, sizzling sound in the left quadrant, both sounds persisting simultaneously while the pressure was continued. Our interpretation of this finding was that the right tube was wide open and that there was a stenosis of the left tube which did not completely obstruct it.

No doubt, in case the tubes are prolapsed into the culdesac there may be doubt in the interpretation of the auscultatory findings. However, the number of such cases must be small. We shall, no doubt, have more to report in regard to this detail in a later communication. If gas leaks out at the cervix, the sound is entirely different; the difference, however, must be heard to be appreciated.

Although our interpretation of these findings is based on logic and not on proved fact, we feel that the possible value of this work in the study of sterility is so great that we are making this preliminary report in order to call the attention of the profession to this method.

Not only is the Rubin test of value in the diagnosis of the cause of sterility, but we believe it is also of therapeutic benefit. The otologist inflates eustachian tubes in chronic otitis media, and gradually restores the middle ear to normal. Is it not possible that a mild, low grade inflammation may glue the tubes shut but not permanently close them? The fallopian tubes of these patients may be inflated and restored to normal so that pregnancy may result. We have demonstrated that tubes inflated only with difficulty at first are easily inflated the second or third time. Here, then, is hope from a therapeutic standpoint which we have formerly not been able to offer to our patients.

A more complete report of our technic in handling our sterile patients will be published in a later communication.

225 Professional Building.

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* From the clinic of the Woman's Hospital.

[1] Furniss, H. D.: Surg., Gynec. & Obst. 33: 567 (Nov.) 1921.

CARDIOPULMONARY SNAP

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The two cases here reported illustrate an unusual pleuritic phenomenon which is not mentioned in the literature available to me.

REPORT OF CASES

Case 1.—A man with a moderately advanced pulmonary tuberculosis of ten years' standing, March 24, began to complain of pain over the lower sternum and the precordium and in the left shoulder. This pain was more severe on lying down. On deep inspiration there was a sharp pain, typically pleuritic in character, in the left nipple area. The patient stated further that at times, when he lay in a certain position and breathed slowly, he was conscious of a snapping noise and sensation in the neighborhood of the heart. At other times the snap occurred with each heart beat, especially when he lay turned slightly toward the left side.

Physical examination disclosed a fibroid tuberculosis of both upper lobes. There was marked tenderness along the border of the left trapezius muscle. On deep inspiration there was a pleural friction sound, loudest just below the left nipple. On slow inspiration there occurred, over and to the left of the precordium, a palpable and audible snap, which was synchronous with one cardiac systole. With the patient turned toward the left side through an arc of about 20 degrees, the snap occurred with each systole when the breath was held at about the midpoint of quiet inspiration. In character, this sound or snap was comparable to a joint snap, as readily palpable but less loud and lower in pitch. Stereoscopic roentgentograms revealed nothing to account for this noise. The pain and soreness gradually lessened during the course of ten days, but the snap persisted for about four weeks, during which time it diminished somewhat in intensity.

Case 2.—A man with moderately extensive pulmonary tuberculosis, demonstrable by the roentgen ray but not on physical examination, about April 1 began to complain of pain over the lower part of the sternum, adjacent ribs and upper epigastrium. At times the pain radiated toward the right side. The pain was always more severe on standing, and more or less relieved on lying down. It was not influenced by respiration. There was no referred pain of phrenic irritation. The patient stated that at times he could hear and feel a tap over the lower part of his sternum which seemed to occur with each heart beat. At other times the tap would occur with each inspiration. He had been examined thoroughly, and had had roentgenograms made. Nothing was found to account for the pain or tap.

Physical examination, April 14, disclosed a pleural friction rub, audible along the right sternal margin below the fourth rib. On slow respiration in the recumbent position, a palpable and audible snap was present over the lower sternum, loudest at the right border between the fourth and sixth ribs. This tap occurred once with each inspiration, and occasionally once on expiration. The tap, which the patient described as having been present with each heart beat, could not be reproduced in any position. This patient was not seen again.

COMMENT

This unusual phenomenon is annoying and possibly alarming to the patient; certainly he demands its explanation. Systolic gastric succussion cannot be considered as a possible source of the noise, since the snap is but faintly audible below the rib margin, and in Case 1 the snap with each cardiac systole was present in the morning before food or fluid had been taken and when gastric succussion could not be elicited by the usual method. The snapping sound sometimes heard over the sternum and adjacent parts of the ribs on respiration, and which originates in the costochondral, chondrosternal or sternal junctions is ruled out in these cases both by the character of the sound, the bone-cartilage noise being higher in pitch, and by the history in Case 2 and the physical findings in Case 1; that is, the snap occurred at times with each cardiac systole when the thoracic cage was held motionless. There is no possibility of confusion of the snap with the so-called xiphosternal crunch described by Solis-Cohen[1] and further studied by Blumer.[2] The first writer has described this sound as resembling that of a boot treading in soft snow. Blumer suggested that the noise is produced by changes in tension of the loose tissue in the sternopericardial ligament. The crunch often simulates a pericardial friction, though it may have a clicking quality; but it is never palpable and never has the loud snapping quality described above. It is, furthermore, a physiologic and not a pathologic phenomenon.

The explanation of the snap evidently is that, in the presence of pleural inflammation between the heart and the chest wall, the movement of the gliding lung margin is impeded by a pleural surface roughened by an eruption of tubercles or a fibrinous deposit. Cardiac systole, by enlarging the space in which the lung margin is advancing, and also by momentarily increasing the negative intrathoracic pressure, permits the lung suddenly to slip past the obstructing area with a snap. When this sound is repeated with each systole, there is evidently a diastolic back-push to the lung margin, which then, with the quicker alteration in relative position of heart and lung on systole, snaps back to its original position.

The long duration of the pleurisy, as well as the character of the friction, is rather unusual. Col. G. E. Bushnell,[3] who has called my attention to this fact, translated the following quotation from a study by von Ziemssen,[4] who describes a circumscribed indurating pleurisy distinguished by its long duration and extraordinary intensity of the friction sound:

> The rough crepitations which are produced by the slipping of the pleura are usually as distinctly perceptible for the patient as for the physician, and can be heard with the same distinctness for the space of several weeks. In view of the duration of the phenomenon, the roughness in this form of pleurisy, which has its seat mostly in the complemental space in its lower and anterior portion, can hardly be attributed to a mere fibrin deposit; it points rather to a hypertrophic thickening of the pleura.

The pleurisy in the cases reported was quite possibly of this type.

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PERFORATING ULCERS OF THE CECUM *

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REPORT OF CASES

Case 1.—A man, operated on, April 3, 1895, had had acute right inguinal pain and tenderness. There was no tumor. The rectal temperature was 101. The condition was diagnosed as appendicitis. A right rectus incision was made. The appendix was normal. The cecum was enormously distended, with three points of impending perforation 6 cm. in diameter. The peritoneum was reduplicated over these. Necropsy, five days later, revealed that the points of suturing held, but there were six new perforations in the cecum. These ulcerations were punctate, round, sharp margins, not necrotic.

Case 2.—A man, aged 22, operated on, Dec. 4, 1916, had suffered for a number of years with gassy dyspepsia, sour brash and delayed digestion, with relief on vomiting and never any pain. There was some discomfort in the appendicular region. The condition was diagnosed as chronic appendicitis or cholecystitis. The gallbladder was opened, disclosing dark bile, thickened with mucus, but no calculi. Drainage was inserted. The remainder of the abdomen was apparently normal on palpation and exploration with the exception of the appendicular region. A second opening was made. The appendix was clubbed, fibrous, and excised through the tip of the cecum. On manipulation of the cecum to explore adhesions, a ligature in the cecal incision pulled off, with discharge of a substance resembling a dysenteric stool. The stoma was religated with linen thread. Necropsy on the fourth day revealed the ligature on the appendix stump in place. There was a ragged perforation of the cecum the size of a 5 cent piece opposite the ileocecal junction.

Case 3.—A man, aged 56, operated on, July 21, 1921, a clerk of good habits, experienced abdominal trouble three weeks before, starting with severe pain at the umbilicus, and green, watery vomitus. This recurred with intermissions. During the second week of the present illness, the pain shifted to the right lower quadrant. Vomiting continued, becoming brown. The patient had been given considerable bismuth. Roentgenograms were taken. There had been no action of the bowels in ten days. On admission to the hospital the patient presented marked pyorrhea, coated tongue and reddened throat. Pain, rigidity, and tenderness were noted at the cecal region, particularly on deep pressure. The heart sounds were distinctly heard at the pubes. As some type of appendicitis was suspected, an incision was made through the right rectus sheath. When the peritoneal cavity was opened, a puff of gas was heard. The peritoneum and viscera were markedly injected, and purplish red. The appendix was normal. The cecum was agglutinated to the lateral wall. When it was lifted up, liquid feces exuded from several small openings in the ulcerated areas, about opposite the ileocecal junction. These points of ulceration were about 6 cm. in diameter. In view of previous experiences, the cecum was stitched to the abdominal peritoneum and incised freely. Bismuth feces were removed. Convalescence was protracted, and during it the patient developed exfoliated stomatitis, associated with which was complete anorexia and an intolerance by the stomach even of water except in small quantities.

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[1] Solis-Cohen: A Xiphosternal Crunching Sound, Am. J. M. Sc. **126**: 131 (July) 1903.

[2] Blumer, George: A Note on the Normal Peculiarities of the Heart Sounds in the Region of the Sternum, Arch. Int. Med. **14**: 605 (Oct.) 1914.

[3] Bushnell, G. E.: Personal communication to the author.

[4] Von Ziemssen: Ueber seltnere Formen der Pleuritis, Festschrift Virchow, **3**, Internationale Beitraege zur wissenschaftlichen Medizin, p. 281.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

COMMENT

These three cases, briefly recited, are descriptive of three types of ulcerations which may occur at this portion of the intestinal tract. We are not including those due to typhoid ulcer lesions. Organs of the body which are more frequently affected have received the greater attention. At one time, appendicitis was believed to be a cecal affection and there was then considerable literature on what was termed typhlitis. Fitz's demonstration of the great frequency of inflammation of the appenidix and its surgical importance has taken from the cecum the attention which its pathology should demand.

The rarity of ulcerations of the cecum in our clinic, running over a period of thirty-five years, has led to a careful searching of the literature, but we have been disappointed, since embryologies and physiologies have little to say in detail of the adenoid tissue of the intestinal tract. Our works on diseases of the intestines are likewise careless in scientific detail. Monographs on appendicitis speak fully of the adenoid tissue of the appendix, yet have no remarks on its analogue, the cecum. It is the same old story, that full information on any topic can be obtained only by broad reading through the literature of many years.

As there is a strong correlation between the physiologic stomach and the cecum, perhaps we may better come to a comprehension of the lesions which occasionally occur in the intestine by a review of the lesions found higher up. Irritating gastro-duodenal contents may produce erosion and, with infection prevailing, these erosions may become ulcerated. If the blood stream is microbic or septic and the stomach sensitized, then hemorrhages or infarcts may ensue, which become devitalized and digested by the stomach juices. There exists in the coats of the stomach adenoid tissue which, on the lesser curvature and toward the pylorus, becomes discrete glandular structures.

This adenoid tissue, as follicular glands, is found at the pharynx and in the cecum as well as in the pyloric region. Through the lymphatics we get infection of these small structures. They soften, break down, and, in the stomach, are digested, leading to perforations from 3 to 4 cm. in diameter. Some authorities assert that the majority of discrete perforations have their origin in the lenticular glands.

In the cecum we have the same initial pathologic condition. Our second case, with the large, sloughy ulcerations, was probably one of hemorrhagic cecitis, a type of lesion which, when it occurs further along in the large intestine, we call dysentery. It seems strange that an inflammation so intense should extend through the coats, producing a slough, and the appendix escape.

But the first and third cases seem to be explainable only on the grounds of primary inflammation of the adenoid tissue, the perforations all being of the same size, with sharp edges and no marginal sloughing.

The chemistry and biology of the upper abdomen is fairly simple, and has been studied thoroughly. Its germ life is one of the vagaries; but the physiologic and chemical states have been well observed, while the cecum is a dark spot in pathology as well as in bacteriology.

The drainage being good, it seldom becomes a surgical proposition. Its bacteriology has so far defied investigation, lack of oxygen suggesting the possibility of anaerobic growth. Accustomed contact with that which is considered most septic and abounding in germ life has produced an immunity, but this protection must at times break down, and were it not for the drainage so easily obtained in the colon, and the fact that an affected cecum destroys appetite and food intake, destructive lesions might oftener be found.

ABSTRACT OF DISCUSSION

Dr. Charles H. Mayo, Rochester, Minn.: It is of educational value as well as interesting to report these cases of ulcers of the cecum. My knowledge of the matter comes second hand from Dr. Rosenow's experimental research on animals and from Dr. Robertson, who has charge of the necropsies at the Mayo Clinic and hospitals in Rochester. Rosenow shows that certain forms of bacteria injected into the blood stream cause ulceration of the colon, especially of the cecum; other forms cause ulceration in the alkaline small intestine or in the acid stomach. Robertson has found at necropsy that such ulcerations in the cecum occur as terminal results, somewhat like terminal pneumonia in cases in which infection predominates and the patients are from two to four days dying. It is probable that such ulcers occur in very sick toxic patients who recover, and the ulceration naturally heals as a part of the process of recovery.

DIFFERENTIATION OF HYPERTHYROIDISM AND OF HEART DISEASE FROM NEURASTHENIC STATES

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It has been our experience that about 30 per cent. of patients coming to the thyroid clinic fail to show any disorder attributable to the thyroid gland, though nearly all patients are referred to the clinic by physicians. Similarly, 30 per cent. of the admissions to an adult heart clinic fail to show any disease of the heart.

Of the 30 per cent. rejected from the heart or from the thyroid clinic, a fair number are borderline, doubtful cases that are rightly referred to these clinics for special examination; but at least half have been diagnosed in good faith, though wrongly, as heart or thyroid disease, which could have been diagnosed correctly without elaborate special methods. Often enough these wrongly diagnosed cases have been sent by very able physicians who have not, however, had the opportunity to see large numbers of cases of hyperthyroidism, or to follow personally many cases of true heart disease with a knowledge of modern conceptions of heart disease.

This large number of cases that make up half the rejections both from the thyroid and from the heart clinic have no demonstrable disease to account for the symptoms. Where a pathologic condition is found there is found also a great discrepancy between the extent of the disease and the disability of the patients. The members of this group resemble one another closely in their symptoms, and form a division as definite, though not so easy to describe, as the groups of cases of true thyroidism and of true heart disease. For the purpose of differential diagnosis the term "neurasthenic states" will serve to name this group. (Actually they are neurasthenics with symptoms predominating that suggest thyroid or heart disease.)

It is the purpose of this paper to enumerate and discuss (1) symptoms that may be common to hyperthyroidism, to heart disease, and to these so-called "neurasthenic states," without demonstrable disease; (2) symptoms essentially peculiar to hyperthyroidism and (3) symptoms essentially peculiar to heart disease.

1. SYMPTOMS IN NEURASTHENIC STATES

The symptoms in neurasthenic states in general bear a close resemblance to those shown by many soldiers in all armies in the late war, and described variously under the terms "D. A. H.," "soldier's heart," "effort syndrome," "les fatigués," etc. It is interesting to note that almost invariably when any physician experienced in civil practice first saw these cases in large numbers in army hospitals, his first opinion was that the patients were disabled by myocarditis, and his second that they had hyperthyroidism. Lest there be those that think even now that one or the other of these suppositions may be correct, it may be stated that these cases failed utterly to develop true signs of hyperthyroidism under prolonged observation; nor did they develop true signs of heart disease, and, when exerted to the point of collapse, failed to show true signs of heart failure. Any combination of the symptoms in the first column of the tabulation may accompany a hyperthyroidism or a heart disease. Certain of them are practically always present in hyperthyroidism, and many are common in heart disease. But they can exist to a severe degree, to the point even of complete invalidism, in patients without any demonstrable disease.

SYMPTOMS COMMON TO NEURASTHENIC STATES, HYPERTHYROIDISM AND HEART DISEASE *

1. Neurasthenic States	2. Hyperthyroidism	3. Heart Disease
(*a*) Fatigue	(*a*) Goiter	(*a*) Enlargement
(*b*) Breathlessness	(*b*) Eye signs	(*b*) Diastolic murmurs
(*c*) Giddiness	(*c*) High basal metabolism	(*c*) Primary disorders of the heart beat
(*d*) Palpitation	(*d*) Female preponderance	(*d*) True signs of heart failure
(*e*) Tachycardia		
(*f*) Tremor		
(*g*) Heart pain		
(*h*) Vasomotor disturbances (1) Cyanosis (2) Sweating (3) Dermographia		
(*i*) Emotional disturbances		
(*j*) Gastro-intestinal disturbances		

* The references in the text are to the classification given in this tabulation.

There are no absolute, measurable differences in the character of these symptoms in the three conditions discussed here, but there are suggestive differences in some which deserve mention.

SYMPTOMS COMMON TO NEURASTHENIC STATES AND HYPERTHYROIDISM

(*a*) *Fatigue.*—Fatigue or weakness exists in both conditions, but the weakness of hyperthyroidism is more clean cut than that seen in neurasthenic states. It is frequently so severe that the patient will complain of weak and trembling knees and be unable to climb stairs, and it seems to be a real muscular weakness. One of the outstanding features of hyperthyroidism consists in weakness forcing itself upon the mind of a patient usually reluctant to admit it. The reverse is usually true with neurasthenia. The neurasthenic feels a disability to exertion greater than is justified. The fatigue of the neuroses appears less as a true physical weakness, but more as an inability to persevere in a sustained effort.

(*e*) *Tachycardia.*—There is no essential difference between the simple tachycardia of hyperthyroidism and that frequently found in neurasthenic states. Aschner's test, a slowing of the heart rate with pressure on the eyeballs, has been given as a differential point in this connection; also a marked slowing of the heart rate when the patient, standing, bends the body forward from the hips to a horizontal position. These phenomena are, however, found commonly in both conditions (often, in fact, among well persons or those sick from almost any cause).

(*f*) *Tremor.*—This exists in both conditions, but is often more marked, coarser, and less under control in the hyperthyroid states than in the neurasthenic states. The tremor of the neurotics is also less constant within short periods of time, and is influenced distinctly by mental control. But in individual cases there is no definite useful standard for differentiating the tremor of one cause from that of the other.

(*i*) *Emotional Disturbances.*—Of all the clinical signs, emotional disturbances are the most difficult to analyze and measure.

In a general way, a patient with hyperthyroidism is in a state of emotional overactivation. There is an inability to adjust the mind and the body to a state of repose. The disturbance shows in neurasthenics, on the other hand, when effort is made to maintain mental and bodily activity up to the every-day demands of life. The mental state of most hyperthyroid patients is essentially optimistic, while that of neurotics is essentially pessimistic. A toxic hyperthyroid patient may burst into tears on the slightest excuse, but within a short time may regain emotional balance, smile, and remark: "I am ashamed of myself for crying; I did not do that before I had this trouble." These patients are not imbued with self-pity, but rather with self-reproach for lack of control. If it may be so stated, the crying in hyperthyroidism is largely without anguish. The crying of the neurotic, on the other hand, is distinctly colored with anguish and self-pity. The emotional state of the hyperthyroid patient is largely one of irritability. This irritability is usually realized and deprecated by the patient suffering from this disease, while gloominess and plaintiveness characterize the neurotic, who does not readily admit, and who perhaps does not fully appreciate their presence.

(*j*) *Gastro-Intestinal Disturbances.*—Variations in the direction of diminution in appetite occur in both diseases, and such phases are of negative differentiating value. Marked increases up to voraciousness associated with progressive loss of weight do not occur with neurotic states, but not infrequently occur in hyperthyroidism, and when present are characteristic of that disease. Nausea, vomiting and diarrhea, appearing and disappearing suddenly without cause, occur not infrequently and characteristically with hyperthyroidism, and do not appear except coincidently with neurotic states.

SYMPTOMS COMMON TO NEURASTHENIC STATES AND HEART DISEASE AND HYPERTHYROIDISM

(*b*) *Breathlessness.*—Extreme breathlessness on effort is common in neurasthenic states, and in hyperthyroidism, and indeed in many other conditions. Marked breathlessness, if due to heart failure, should be associated with orthopnea and coughing.

(*e*) *Tachycardia.*—Simple tachycardia is a tachycardia that varies, in normal directions with exercise or excitement and rest, etc. Simple tachycardia of an extreme degree (more than 120 at rest) is a more common symptom in neurasthenic states and hyperthyroidism than among cardiac patients, but there are no inherent differences between these simple tachycardias.

Primary tachycardias, shown by a rapid, absolutely fixed rate, or an absolutely irregular heart, mean a disorder of the heart itself. But the absolutely irregular heart (auricular fibrillation) is found in about 10 per cent. of hyperthyroidism cases, either as an established condition, or occurring at intervals for short periods (hours or days).

(*g*) *Heart Pain.*—In neurasthenic states, heart pain may be severe and may be located anywhere near or over the heart; it may extend to the neck and one or both arms, but as a rule it is subcardial. It usually does not bear a fixed relation to exertion as often it does in "true" angina pectoris. Heart pain occurs much more commonly from neurasthenia than from disabling heart or circulatory disease (about ten to one) in the authors' experience in civil practice. Heart pain is an occasional complaint in hyperthyroidism.

(*h*) *Vasomotor Disturbances.*—Cyanosis in neurasthenic states usually is confined to the extremities—aerocyanosis—but it may be general and may be very marked. It is seldom marked in pure hyperthyroidism. If due to heart disease, it should be generally distributed.

2. SYMPTOMS PECULIAR TO HYPERTHYROIDISM

Symptoms which in this connection may be called peculiar to hyperthyroidism, and which are not found in neurasthenic states, are goiter, staring, high basal metabolism and female preponderance.

(*a*) *Goiter.*—Great care must be exercised in diagnosing enlargement of the thyroid gland in those cases in which the goiter is not definitely and obviously present, as it has been our experience that goiter is often diagnosed in girls with long, thin necks with a prominent isthmus when the same thyroid would not have been at all visible were there present a moderate deposit of subcutaneous fat. On the other hand, in certain very fat necks there is a roll of fat running transversely across the neck directly over the thyroid and located between two folds in the skin. We have had a great many cases with fatty folds of this type referred to us with a question of thyroid enlargement. Still another type exists in which a slight symmetrical enlargement of the thyroid occurs at or about the time of establishment of the menses. This is the type in which the enlargement is probably physiologic, and has in our experience practically never been associated with any thyroid disease.

(*b*) *Eye Signs.*—A host of signs has developed from study of the eye changes in hyperthyroidism. The striking and most constant one of the lot is best described as "staring." Staring, of course, is a matter of degree, but usually definitely present in thyroidism and definitely absent in the other two conditions. The next most reliable eye sign, when present, is exophthalmos. It is of value, however, only as positive evidence, since hyperthyroidism exists very often in its absence. Extreme care must be taken lest exophthalmos be diagnosed in the cases in which there exists only a normally prominent eye, and staring when the "sharp piercing eyes" expression is but a normal and often familiar characteristic of the individual. The other eye signs are not of practical value.

(*c*) *High Basal Metabolism.*—Basal metabolism tests are reported in figures, and this tends to give an appearance of accuracy and certainty, which in certain instances is misleading. For example, we have several times seen increases in basal metabolism rate up to + 30 in patients clinically neurotic and without any true clinical signs of hyperthyroidism. With repeated tests and adjustment of the patient to the tests, the basal metabolism figures have come down to "normal limits." On the other hand, we have seen such individuals with repeated tests continue to maintain a moderately increased basal metabolism rate, owing to their inability to adjust themselves to the test because of their persistent neurotic states. In the latter case, convincing signs of hyperthyroidism being absent, we prefer to accept the explanation given above rather than to attribute the neurotic symptoms to so-called latent hyperthyroidism—this diagnosis being based solely on an elevated basal metabolism reading, and symptoms that may be due to neurasthenia. In our experience, diagnoses modified by the adjective *latent* usually are wrong. The basal metabolism test will never be an easy and sure method for the inexperienced to trust for differential diagnosis; but it is indispensable and of great merit when discreetly used.

(*d*) *Female Preponderance.*—Females preponderate in this goiter clinic in the proportion of more than ten to one. The preponderance aids us in diagnosis only slightly, if at all, but it is an observation peculiar to hyperthyroidism in distinction from heart disease and neurasthenia.

In the clinic we have carried out a series of Goetsch tests checked by prolonged clinical observation, basal metabolism records throughout the year in operative cases, and reaction (in terms of clinical improvement) to operation; it has been our experience that the test is not of value as an indication of hyperthyroidism.

3. SYMPTOMS PECULIAR TO HEART DISEASE

None of the signs in the first column of the tabulation are necessary to a diagnosis of heart disease. No number of these alone justifies a diagnosis of heart disease. Breathlessness, tachycardia, cyanosis, heart pain, for instance, are not uncommon in a variety of conditions—convalescence, fear, fatigue, etc., when the heart is perfectly sound. They occur commonly and to an astonishing degree in patients without any disease. This is not a suitable place to discuss the whole problem of diagnosis of heart disease; however, in connection with the subject of this paper, a brief outline is justified. The number of wrong diagnoses of heart disease that we see would be reduced if certain precepts were generally followed.

To diagnose true heart disease in the great majority of cases, it is necessary to have one at least of these signs: Enlargement, diastolic murmurs, primary disorder of the heart beat, or signs or history of heart failure. A history of rheumatic or syphilitic infection naturally gives an added weight to doubtful signs. We admit, of course, a rare coronary disease with associated myomalacia cordis, or congenital heart, or acute infection of the heart which might not fit these statements. But these do not make up the number of cases that constitute the group of patients we find (wrongly) classed as having heart disease.

(*a*) *Enlargement.*—This is often hard to determine. When enlargement alone is the evidence of heart disease, it should be very definite. A rapidly beating heart often gives the impression that it is enlarged when careful examination by direct methods, or by roentgenography, will show it to be small.

(*b*) *Diastolic Murmurs.*—These are either present or absent: they are not a matter of degree; but, as is well known, frequently prolonged apical first sounds, such as are common in neurasthenic cases and in hyperthyroidism (as well as in normal persons) are mistaken for mitral diastolic murmurs. A mitral diastolic murmur must be longer than any first sound could possibly be, to be called a murmur and to serve by itself as ground for a diagnosis of heart disease. Systolic murmurs in themselves, and by themselves, do not justify a diagnosis of heart disease. This is now scarcely ever disputed. They are the rule in hyperthyroidism and are common in neurasthenic states, in patients with diseased hearts, and in normal persons.

(*c*) *Primary Disorders of the Heart Beat.*—Those which justify in themselves a diagnosis of heart disease are auricular fibrillation (absolutely irregular heart beat) and paroxysmal tachycardia—sudden attacks of rapid, absolutely fixed rate, lasting for any interval of time up to days. Heart block, alternation and other disorders occur so rarely without any other true signs of heart disease that they scarcely deserve mention in this connection. Extrasystoles are a definite and common disorder, of course, but this diagnosis is not of great significance.

(*d*) *True Signs of Heart Failure.*—The true signs of heart failure are due to venous engorgement—cough, orthopnea, sometimes hemoptysis, from engorgement of the pulmonary circulation. Congestion of the neck veins and engorgement of the liver should be demonstrable in the systemic circulation in true heart failure. A story of breathlessness or palpitation or even of edema is not in itself evidence of heart failure.

It should be realized that neurasthenic states may and frequently do complicate other disorders. They may complicate a hyperthyroidism, and their symptoms persist after a real hyperthyroidism is cured. Frequently a true heart disease patient is found who is disabled by neurasthenic symptoms complicating, but in no sense directly due to, the pathologic condition of the heart.

CONCLUSION

Hyperthyroidism cannot be differentiated from neurasthenic states, nor heart disease from these neurasthenic states, by any special laboratory method. These cases can be satisfactorily differentiated in the great majority of cases only by a careful history and physical examination by the unaided senses, with a conscientious balancing of the signs and symptoms of organic disease against those which may be the results of disease, but which, on the other hand, may be due to physiologic states alone.

Basal metabolism estimations are of great value as an aid in the diagnosis of hyperthyroidism, but only when not overvalued as evidence, and when the necessity of repeated tests in many cases is realized.

There is always a number of borderline cases that cannot be differentiated at a single observation. Accurate diagnosis of these cases depends on prolonged or repeated observation and examination by the foregoing methods, and not on a multiplication of special tests, or on attempts to interpret these tests more and more finely.

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REPORT OF FIVE CASES OF MASTOIDITIS WITH ATYPICAL SYMPTOMS

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The purpose of this paper is to call attention specifically to those cases of purulent mastoiditis which do not come under the usual classification and do not present its so-called typical symptoms. By this we refer to the drooping of the posterosuperior canal wall, tenderness on pressure over the mastoid cortex, deep-seated and continuous pain, fever, continuous discharge from the external auditory canal, and postauricular swelling. It seems timely, therefore, again to call attention to the fact that there are instances of osteitis of the mastoid process requiring operative interference which are secondary to tympanic infection but in which the tympanic portion of the disease, so far as signs are concerned, plays a comparatively insignificant rôle.

In the cases about to be described, the history shows no discharge at any time, or at least no recent discharge, from the middle ear. Definition of diseases in textbook form must necessarily be more or less dogmatic in character; hence our clear-cut textbook description of the indications for the mastoid operation. But as our studies have been more thorough and more complete, particularly by men of wide experience in special hospitals, we have been forced to the recognition of a rather large proportion of atypical cases, and believe that these cases are far more common than we might otherwise suppose. In other words, there are many operative cases in which the majority of the so-called typical symptoms are absent. Many times patients present themselves with characteristics of the middle ear and external auditory canal indicating the presence of an operative mastoiditis who perhaps at some previous time may have had some of the so-called classical signs and symptoms of mastoid disease. When, however, they come under observation, they have, with the exception of a middle ear that gives no evidences of resolution, no other cardinal signs or symptoms of mastoid involvement.

The peculiarities or the peculiar appearance of these middle ears has recently been described by Dr. Dench. In children, particularly when the history of headache or pain is not obtainable, it has frequently been our experience to see a subperiosteal abscess as the first evidence of mastoid disease or of middle ear infection. Occasionally such a subperiosteal abscess will not be tender. It is true, of course, that this condition is invariably secondary to an infection of the middle ear, and in no case in which we have observed this state of affairs have we been able to conclude that we were dealing with perfectly normal tympanum. Such instances, however, have been reported, but we are doubtful whether the observers had taken into account minor changes in the drum, slight fulness or thickening, both of which are evidences of recent tympanic infection. Too much stress has been put upon the classical signs and symptoms of mastoidities, and too little is known by our graduates in medicine concerning severe mastoid infections in which most of the so-called typical symptoms are absent. It is a curious fact that patients are frequently admitted to the services in general hospitals with unilateral headache and tenderness over the mastoid without any discharge from the ear, and the condition present is not suspected because of the absence of a discharge from the ear. The following cases represent the types which we have in mind:

REPORT OF CASE

Case 1.—E. L., a man, more than two months before admission into the hospital had a cold in his head, followed by pain and tinnitus and partial deafness in the right ear. This lasted two weeks and then the pain subsided, but the deafness persisted. There was no discharge. A week or two before admission, the pain in the right ear again became severe and extended over the right side of the head. There was some fever, but still no discharge. A few days before admission, the patient had a distinct chill. The left mastoid had been operated on a year previous. The right canal was distinctly narrowed. The drum was thick, but not bulging. There was no perforation and no discharge. No landmarks could be made out. The mastoid was tender far back over the emissary. At operation an enormous perisinuous and epidural abscess was found.

Case 2.—E. H., a man, in September had influenza. Durng this attack he had some pain in the right ear, lasting a few days. He was confined to bed one week. When he was up and about again he complained of tinnitus and some stufiness in the right ear. At no time was there any discharge. Early in October he consulted an able otologist, and during he months of October, November and December was under his care. The treatment consisted of inflation, the usual care of a tubotympanic catarrh. All this time, however, the patient complained of unilateral headache. December 31, he conulted one of us. At that time there was a narrowing of the anal toward the tympanum. The drum was thick and luserless, but not bulging. The short process could be seen as well as a little of the hammer handle. There was no tenderness over the mastoid proper, but somewhat farther back here was distinct tenderness over the region of the sinus. The diagnosis of perisinuous abscess was made, and an peration was advised. A large perisinuous and epidural bscess was found. No myringotomy was performed. Healng was uneventful. The patient was discharged at the end f nine weeks, with hearing of twenty-six double vibrations, whisper at 25 feet and positive Rinné test.

Case 3.—D. B., a man, had been treated for nose trouble, robably sinusitis, but without apparent ear complications, ine months before. Five weeks before he had a severe ttack of pain in the left ear and the left temporal region. External swelling soon became marked, and he sought relief in the ear service of the Manhattan Eye, Ear and Throat Hospital. The external swelling was so extensive, partially closing the external auditory canal, that the majority of the taff considered it to be furunculosis. He then consulted an otologist at his office, who opened the ear drum, but no disharge followed. At no time during the subsequent treatment was there any discharge from the external auditory anal. The external swelling extended anteriorly until it nvolved both left eyelids; when we saw him, both eyelids ere edematous. At this time a roentgenogram disclosed xtensive involvement of a large pneumatic mastoid. Arrangements were made for operation, but the man disappeared for bout a week, reporting that the external swelling had subded. It returned, however, and became so extensive that the left eye was entirely closed and the eyelids of the right eye were considerably swollen and edematous. Mastoid operation was then performed, and a large cortical perforation was found at the root of the zygoma. An enormous abscess involved the soft tissue of the temporal and parietal region of the scalp. He also had a very large perisinuous abscess, and the dura of the middle cerebral fossa was denuded over a wide area. He made a rapid and uneventful recovery, with good hearing.

Case 4.—Dr. Hays, of the Section on Otology, New York Academy of Medicine, April 14, 1922, reported the history of a child, aged 4 years, who had temperature of about 102 F. for three days, accompanied by grippal symptoms. Then there was a mild attack of scarlet fever with a temperature of about 103 for a few days longer, when the temperature became normal. Three weeks later the attending physician, a pediatrician, found a large cervical gland on the left side of the neck, immediately below the mastoid bone, and a temperature of 103. There was no complaint of pain, but examination revealed the external auditory canal so swollen that it was impossible to obtain a view of the drum. Mastoid tenderness was present, but the child did not appear to be ill and did not complain of pain. Mastoiditis being suspected, a roentgenogram was made which showed evidences of breaking down of the mastoid cells. Operation disclosed a large quantity of pus in the mastoid, and a perisinuous and epidural abscess. Immediately after operation the temperature became normal, and convalescence was rapid with good hearing. The ear drum was not punctured, and there never has been any discharge from the external auditory canal.

Case 5.—A. R., a woman, early in December had had pain and tinnitus in the right ear. At first the pain was severe and fairly constant; but after the administration of some drugs by the local physician the severe pain ceased. The tinnitus, however, continued, and at intervals during the day there were shooting pains over the right side of the head. There was never at any time discharge from that ear. For two days before coming to the office she noticed a small swelling far back behind the mastoid region. The left ear was normal. The right tympanum was very much thickened so that no landmarks were visible. Hearing in the left ear was normal. The Weber test was referred to the right ear, the low tone limit raised and the hearing for whisper considerably diminished. January 19, simple mastoid operation was performed. The mastoid was extensively diseased. A firm, beet-like, organized granuloma shut off the antrum out of the aditus. Corresponding to the swelling behind the mastoid there was a perisinuous abscess in which the sinus lay exposed, covered, however, with granulation tissue for about 1 inch behind the knee, and 1¼ inches in front of the knee. The wound healed rapidly; March 21, the ear was dry. She heard the whisper at 20 feet, and twenty-six double vibrations; the Rinné test was positive; the Weber test was referred to the right. The postauricular wound was healed in a firm scar. The patient was seen again one year later, and during the interval had no trouble with the right ear.

Five similar cases were seen within six weeks of the one occurring in 1919. Two of these cases occurred in private practice. Three of the patients were operated on in Dr. Phillips' service at the Manhattan Eye, Ear and Throat Hospital.

CONCLUSIONS

We feel justified in bringing this to the attention particularly of the teachers of otology. The observation of so many cases of this nature in so short a time is, to our minds, an evidence of the frequency with which they occur. Furthermore, the fact that in virtually every instance no diagnosis was made or even suspected until the patients came into the hands of the otologists seems to us an evidence of the fact that both textbooks and teachers are wanting in their failure adequately to describe this condition to students.

40 West Forty-Seventh Street.

A DISEASE CLINICALLY RESEMBLING EPIDEMIC DYSENTERY

REPORT OF OUTBREAK IN A RURAL COMMUNITY

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During the summer of 1921 there occurred in this locality an epidemic of an acute, severe, diarrheal disease clinically resembling dysentery. Reports from other places indicate that it was prevalent throughout a large part of the state. The rarity of such epidemics in this locality, its size and the occurrence of certain conditions which seemed to favor its development make it worthy of a report.

This recent epidemic of "dysentery" is by far the largest and most severe that has occurred here in many years. In the practice of one of us (L. E. Y.) dysentery was a common disease twenty-five or thirty years ago, during the summer and early fall. There were many sporadic cases, and at times the disease reached epidemic proportions. The number of cases lessened gradually each succeeding year until, in the last ten or fifteen years, the disease has been remarkable by its absence. There is little doubt that the disease in those days was true epidemic dysentery due to *B. dysenteriae*. Amebic dysentery is not known in this locality. Typhoid fever was endemic and epidemic then, and there is every reason to believe that true epidemic dysentery also occurred. The improvement in sanitation, the purification of water supplies, etc., which have done so much to lower the incidence of typhoid was undoubtedly responsible for the gradual disappearance of true dysentery among the general population.

There has persisted, however, a complex group of diarrheal diseases, somewhat indefinite as to etiology and known variously as dysentery, infectious diarrhea, summer diarrhea and ileocolitis. These cases occur largely in infants and occasionally in adults in a mild form, and are especially prevalent during late summer and early fall. In the light of recent investigations,[1] it is probable that in infants a large number of these cases, particularly the more severe, are due to *B. dysenteriae*. From our experience, however, we feel that this type of infection in recent years has been extremely rare in adults in this locality. Cases of diarrheal disease have, it is true, occurred during the summer in the adult population, but such cases are to be sharply differentiated from true bacillary dysentery. Weiss[2] has recently emphasized, more particularly in the case of adults, the distinction between true dysentery and what he calls infectious diarrhea, and in his article limits the term dysentery to those cases showing fever, tenesmus, and mucus and blood in the stools.

Besides the true dysentery due to *B. dysenteriae* there is some evidence to show that cases of diarrheal disease, sufficiently severe clinically to be classed as dysentery, may be due to other organisms. Besides the occurrence of such cases in infants, many cases in adults and even epidemics of such a nature have been reported. Thus, Morse and Tryon,[3] in 1917, reported an epidemic of diarrheal disease which occurred in the Boston State Hospital. While clinically the disease most resembled dysentery due to *B. dysenteriae* (Shiga), the causative agent was apparently an organism of the paratyphoid enteritis (Salmonella) group. They believe that to the gastro-enteric and typhoid-like forms of paratyphoid infections should be added a third, a dysenteric form. Sadler and Kelso,[4] in 1917, reported an epidemic of acute diarrhea, in some cases approaching mild dysentery. Examination of the stools in six cases yielded an organism of the dysentery group in but one instance, with findings in the other case of organisms of the *B. coli* group and organisms bearing a resemblance to the dysentery group. Bassett-Smith[5] has reported that cases sent to the Dreadnaught Hospital, at Greenwich, as dysentery often gave positive paratyphoid cultures. Miller[6] has stated that the most severe cases of dysentery occurring at the Red Cross Hospital at Netley were due to the paratyphoid bacillus. Kenny,[7] at the Canadian Red Cross Hospital at Taplow, describes the difficulty in distinguishing between paratyphoid fever and dysentery. Stolkind[8] states that in some cases *B. paratyphosus* B gives the picture of dysentery, clinically and pathologically. Thus there is some evidence to show that organisms of the enteric group may cause, at times, a disease closely resembling true bacillary dysentery. Except in infants, the evidence is not so convincing that other organisms not so closely allied to *B. dysenteriae* also may cause a disease similar to true dysentery. However, Ross and Peckham[9] have described the "enterococcus" as the cause of an epidemic of severe and fatal dysentery.

EPIDEMIOLOGY OF THE PRESENT EPIDEMIC

Last summer was marked by extreme heat and dryness, which persisted from the first of June until the first of September. The house fly, which in recent years had largely disappeared, was present this season in such numbers as to constitute a veritable pest. It is interesting in this connection to note the importance which some writers place on the fly as a carrier in cases of infectious diarrhea and dysentery. Cox, Lewis and Glynn[10] recovered bacteria, including bacilli of the Morgan group, from flies. They found that the number of organisms bore a direct relation to the sanitary conditions of the districts in which the flies were caught. Lucas and Amoss,[11] in this country, have recovered dysentery bacilli from flies caught in a house harboring a case of dysentery. Weiss [2] considers flies as a factor in the spread of infection during an epidemic of infectious diarrhea among our troops in France. In the consideration of the fly as a disseminator of disease, the recent work of Bishopp and Laake [12] is of great interest and importance. In a study of the direction, distance and speed of travel of flies from a point of liberation, these investigators have shown that they may spread in all directions, and in the case of the common house fly (*Musca domestica*) a spread of 13$\frac{1}{10}$ miles is recorded. The tests have shown in some instances the remarkably rapid spread of 8 miles in less than one day.

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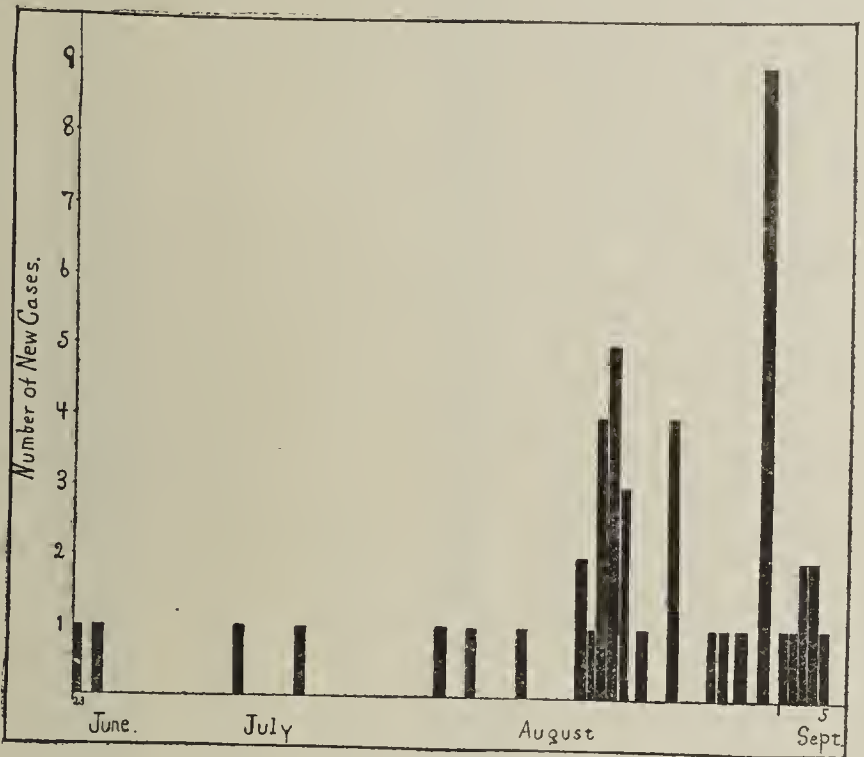
[8] Stolkind, E.: Proc. Roy. Soc. Med. **9**, Med. Sect., 1915-1916.

[9] Ross, S. M., and Peckham, C. F.: The Enterococcus as a Factor in Certain Types of Dysentery, Lancet **1**: 1362 (June 26) 1920.

[10] Cox, G. L.; Lewis, F. C., and Glynn, E. E.: The Numbers and Varieties of Bacteria Carried by the Common House Fly in Sanitary and Insanitary City Areas, J. Hyg. **12**: 290 (Oct.) 1912.

The first case of which we have any knowledge appeared on the 23d of June and was followed by one on the 25th. A third case did not appear until July 9. It is impossible in an epidemic of this kind, of a nonreportable disease, occurring in a rural community, to determine exactly the chronological development of the cases, but it was apparently as above. After July 9, cases were observed by us at from two to fourteen day intervals until August 12, from which time one or more cases appeared at never less than three day intervals. It is probable that, including cases seen by others and mild cases, in which the patients were not sufficiently ill to call a physician, each day after the middle of July witnessed the development of new cases.



Chronological development of new cases.

There was a tendency for the cases to occur in groups. For instance, August 12, we saw two new cases, and, August 14, 15 and 16, twelve new cases. August 30, two weeks later, we saw nine new cases. Coincident with the development of the twelve cases of August 14-16, there was a sudden change from the extreme heat to really cool weather. A like observation was made in regard to the development of the nine cases of August 30. Long ago, Ferguson [13] told of the influence of sudden cold weather during periods of extreme heat, as a factor in the incidence of dysentery. The accompanying chart is a graphic representation of the development of the cases chronologically.

The epidemic presented no evidence of being water borne. The case incidence was higher on the farms with their separate water supplies than in the villages with their common supplies. The milk supply was equally innocent. There was no particular geographic relationship among the cases, and they occurred scattered evenly and generally throughout this locality; nor was there any definite relationship between the appearance of the cases geographically and chronologically.

No patient gave a history of having been outside the state, but opportunity for personal contact among the people of the whole community was excellent. Many meetings, picnics and celebrations furnished ideal opportunities for the spread of the infection by direct contact with mild cases and convalescent or well carriers.

Instances of multiple cases in individual homes were common. Cases 18 and 40 occurred in one house, as did Cases 28 and 29. Cases 20, 32, 33, 34, 35 and 36 occurred in one house in which three families were residing. In many instances there were several mild cases in families in which there was one severe case. In the majority of instances, when more than one case developed the onset of all was simultaneous. In a few instances the cases developed one after the other at intervals of from a few days to a week.

CLINICAL OBSERVATIONS

We have divided our cases into two groups. Group 1 consists of those cases of severe dysentery with fever, and blood and mucus in the stools. We observed forty-six cases of this type during the epidemic. Group 2 consists of those cases which were mild and which did not show all the triad of symptoms mentioned above, but which did show some symptoms sufficiently characteristic of this disease (especially during an epidemic) to warrant inclusion in this report. The number of cases in the second group is estimated at 120. The number is only estimated, as not all these cases were seen by us personally, knowledge of them being obtained in various ways. Many of the patients in Group 2 did not consider themselves sufficiently ill to call a physician.

In the accompanying table are presented all the cases which are classified in Group 1. All the cases in this group showed the same clinical picture: The onset was acute and sudden, with fever and malaise, with or without vomiting, usually with abdominal pain and with a profuse diarrhea, with a movement, frequently, every half hour. The stools, at first liquid and fecal in character, by the second day consisted of small amounts of blood-stained mucus and clots of fairly bright red blood. Tenesmus, which occurred to a moderate degree in practically every case, was marked in but one instance.

Abdominal pain was present in practically every case. It was never very severe, and there was never found associated with it any abdominal tenderness or muscular rigidity. Pain of an arthritic or rheumatic type was present in a large percentage of the cases, and constituted one of the most interesting observations of the epidemic. It frequently shared honors with the diarrhea as the chief complaint of the patient. It was definitely rheumatic in character, such as is associated with influenzal infections, and was general throughout the body. Osler states that Sydenham described pain of this character occurring in dysentery.

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[11] Lucas, W. P., and Amoss, H. L.: Vaccine Treatment in the Prevention of Dysentery in Infants, J. Exper. Med. **13**: 486 (May) 1911.

[12] Bishopp, F. C., and Laake, E. W.: Dispersion of Flies by Flight, Agric. Res. **21**: 729 (Aug. 15) 1921.

[13] Ferguson, cited by Sandwith, F. M.: The Lettsomian Lectures on Dysentery, Lancet **2**: 637, 683, 731, 785, 1914.

The temperature usually ranged between 101 and 102 F. In a few cases, particularly among children, it was higher. In Case 1 it reached 105.

It will be seen from the table that the age incidence includes cases at all ages except infants under 2 years.[14] The most severe cases occurred in young children and in old persons. While the cases in young children cleared up promptly, there seemed to be a tendency for the disease to last longer in the aged.

The course of the disease appeared to be self limited in the great majority of cases. For a few days the patients appeared severely ill, there was marked prostration, and the diarrhea continued, with frequent passages of small amounts of blood and blood-stained mucus. Then the fever dropped suddenly, and recovery commenced and was rapid. From three to four days was the average duration of the fever, abdominal pain and blood in the stools. A mild diarrhea and some weakness usually persisted up to a week. Weakness was the most persistent symptom, and frequently outlasted the diarrhea by several days. In a few Cases (8, 18, 21 and 28) the diarrhea persisted for from seven days to two weeks, but in no case did the appearance of blood in the stools last more than four days. The longer duration of symptoms in the cases just mentioned seemed to be due to the fact that these patients remained up and about, and it was noticed that such cases occurred in patients of advanced age. There were no deaths.

CASES IN GROUP 1

Case	Age, Years	Onset	Fever	Vomiting	Abdominal Pain	Arthritic Pain	Bowel Movements	Blood	Mucus	Course	Complications and Comment
1	12	6/23	+	0	+	0	12–15	+	+	Typical	
2	50	6/25	+	+	0	+	12–20	+	+	Typical	
3	35	7/ 9	+	0	0	+	10–15	+	+	Typical	
4	30	7/15	+	0	+	+	8–10	+	+	Typical	
5	48	7/29	+	+	+	+	15–20	+	+	Typical	
6	18	8/ 1	+	0	+	+	12–15	+	+	Typical	
7	3	8/ 6	+	+	+	0	20–25	+	+	Typical	
8	68	8/12	+	+	+	+	10–15	+	+	10 days	
9	4	8/12	+	+	+	0	8–10	+	+	Typical	
10	75	8/13	+	0	0	+	15–20	+	+	Typical	Convulsions and delirium
11	3	8/14	+	+	+	0	15–20	+	+	Typical	Delirium
12	4	8/14	+	+	+	0	10–15	+	+	Typical	
13	3	8/14	+	+	+	0	10–15	+	+	Typical	
14	7	8/14	+	0	+	0	8–10	0	+	Typical	
15	35	8/15	+	0	+	+	12–15	+	+	Typical	
16	25	8/15	+	0	+	+	12–15	+	+	Typical	
17	21	8/15	+	+	+	+	8–10	+	+	Typical	
18	40	8/15	+	+	+	+	15–20	+	+	2 weeks	Pregnancy; premature labor; delirium
19	72	8/15	+	0	+	+	10–12	+	+	Typical	
20	28	8/16	+	0	0	+	15–20	+	+	Typical	
21	73	8/16	+	+	+	+	10–15	+	+	10 days	Auricular fibrillation
22	25	8/16	+	0	+	+	8–10	0	+	Typical	
23	20	8/18	+	+	+	0	20–30	+	+	Typical	
24	8	8/21	+	0	+	0	15–20	+	+	10 days	Severe tenesmus with rectal prolapse
25	65	8/21	+	0	0	+	15–20	+	+	Typical	
26	12	8/21	+	+	+	0	8–10	0	+	Typical	
27	35	8/21	+	0	+	+	10–15	+	+	Typical	
28	74	8/25	+	0	+	+	20–25	+	+	2 weeks	Marked weakness
29	65	8/26	+	0	+	+	12–15	+	+	Typical	
30	13 mo.	8/28	+	0	?	?	8–12	+	+	Typical	
31	11	8/30	+	+	+	0	15–20	+	+	Typical	
32	10	8/30	+	+	+	0	15–20	+	+	Typical	
33	15	8/30	+	+	+	+	15–20	+	+	Typical	
34	13	8/30	+	+	+	0	15–20	+	+	Typical	
35	3	8/30	+	+	+	0	15–20	+	+	Typical	
36	11	8/30	+	+	+	0	15–20	+	+	Typical	
37	5	8/30	+	+	+	0	15–20	+	+	Typical	
38	3	8/30	+	+	+	0	15–20	+	+	Typical	
39	9	8/30	+	+	+	0	15–20	+	+	Typical	
40	40	9/ 1	+	+	+	+	15–20	+	+	Typical	
41	30	9/ 2	+	0	+	+	15–20	+	+	Typical	
42	75	9/ 3	+	0	+	+	12–15	+	+	Typical	
43	72	9/ 3	+	0	+	+	12–15	+	+	Typical	
44	36	9/ 4	+	0	+	+	20–25	+	+	Typical	
45	47	9/ 4	+	+	+	+	10–12	+	+	Typical	
46	45	9/ 5	+	0	+	+	8–10	+	+	Typical	

There were few complications. Patient 24 developed a rectal prolapse. In Case 11 there was rather a severe delirium, and Patient 9 had convulsions at the onset. Patient 18 was eight and one-half months pregnant, and had a premature labor. She is one of the few patients in whom the diarrhea was longer than a few days, lasting in her case about two weeks. Patient 22 was three months pregnant, but there was no abortion. Patient 43 developed symptoms of intestinal obstruction a week or so after recovery.

The cases in Group 2 resembled those in Group 1 considerably, but they were much less severe. Some of these patients had fever, and some had mucus in the stools. All had a diarrhea of moderate severity. Many complained of the abdominal pain; and, in some cases, pain of a rheumatic type already described, together with a diarrhea, constituted the entire clinical picture. Headaches and malaise were common. The mild cases often occurred in families in which there were cases of the greatest severity.

LABORATORY FINDINGS

Opportunity for suitable laboratory investigation was lacking. Typical stools from five cases (32, 34, 36, 38 and 43) during the acute stage were sent to the State Laboratory of Hygiene for examination. The specimen from Case 43 was delayed in transit, and on arrival was too old for a satisfactory examination. A careful examination of the other specimens failed to yield any organisms of the enteric or dysentery groups; nor were any organisms isolated which, it was thought, played an etiologic rôle in the disease. Unfortunately, tests of the agglutinative properties of the blood of atients against known strains of organisms were not nade.

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[14] With one exception, Case 30.

SUMMARY AND COMMENT

In an epidemic of acute dysentery occurring in a rural ommunity there were forty-six cases of a severe type vith fever, mucoid and bloody stools, tenesmus and ain. There were 120 cases of a milder type. There vere no deaths, few complications and no sequelae.

There is no evidence that the water supply was impliated in the spread of the disease. The presence of an nusual number of flies throughout the summer is ssumed by us to have a bearing on the spread of the nfection. It is probable that flies and contact with atients having the disease and with convalescent or vell carriers were the principal means of spreading the nfection. The extreme heat and dryness probably layed a part in the incidence of the disease, and avored the spread of the infection. Sudden, severe hanges in the temperature, which occurred twice durg the epidemic, seemed to us to have some influence n the development of new cases.

The disease is separated from the group of "infecous diarrheas" by its severity. It most resembles true pidemic dysentery due to *B. dysenteriae,* especially in ie wide range of age incidence. It lacked, however, ie duration and the mortality. In the vast majority f cases it was limited to three or four days. There ere no deaths. Dystentery due to the dysentery bacillus a disease of from three to four weeks' duration, and ie mortality rate is fairly high. Nor did it show the equelae of subacute or chronic dysentery or diarrhea. seems scarcely possible that an epidemic of true acillary dysentery as large as this would fail to leave ny sequelae of that nature, yet there has not been a ngle occurrence of that kind in this epidemic.

Examination of satisfactory specimens of stools in ur cases failed to yield *B. dysenteriae,* allied groups, any other organisms which were considered to be an iologic agent. Considerable doubt may reasonably be rown on the bacteriologic findings because of the ict that the specimens were of necessity shipped a onsiderable distance, with possible consequent change flora. We also realize that examinations were made too few cases to warrant any conclusions being awn as to the presence of a possible etiologic agent.

Industrial Home Work of Children.—The Department of bor has published a report on "Industrial Home Work of ildren," based on a study of this subject in three Rhode land cities. It was found that at least 5,000 children under years of age had done home work in the course of a ar. Of 2,338 children who had worked at least a month t of the year, 4 per cent. were under 6 years of age, and per cent. were under the age of 11. The inquiry covered 3 industrial establishments. The principal kinds of work ne at home by children were: stringing tags, drawing reads from lace, linking and wiring rosary beads, setting nes in jewelry, carding snaps, and assembling military ttons. At the rates paid, four-fifths of the 956 children o reported earnings could not make as much as 10 cents hour working at top speed. Of the families reporting al yearly earnings from home work, almost nine-tenths rned less than $100, and about three-fifths earned less than , which sums in nearly all cases represented compensation more than one person. A possible danger to the health the community was found in that many families reporting l work while members of the family were ill with infecus disease, and in some cases the sick persons took part the work. The report states that manufacturers using the ne-work system indicated the system could be abolished h little loss to business.

Clinical Notes, Suggestions, and New Instruments

BULLET WOUNDS: THEIR INTERPRETATION

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Medical Assistant to the District Attorney

The determination of the course of a bullet is frequently of as vital importance to the operating surgeon as it is to the medicolegal expert, and occasions will arise when the obtaining of a roentgenogram prior to operation is impossible. Careful study of the wound will, however, give the desired information in a large proportion of cases.

A bullet at long range, uninterrupted in its flight by any object of sufficient density to deflect it, and striking the skin at right angles, will leave a round wound with seared edges but without brush-burn. It makes a hole in the skin over soft parts that is approximately one half the diameter of the caliber of the bullet, if it enters at right angles to the presenting surface.

If the missile strikes the skin at an acute angle to the presenting surface, the tissue will be pushed up in front of the bullet until enough has been crowded up to permit of its penetration, and as it skids or slides on the skin before entering, it will cause a brush-burn on that side of the wound from which the bullet came. The brush-burn will vary in length with the angle at which the bullet struck the skin. Hence, the longer the brush-burn, the shallower the penetration. An imaginary line drawn through the center of the brush-burn and the center of the opening at which the bullet entered will give the course of the bullet within the body. To illustrate: If the brush-burn is on the right side of the opening, the bullet came from the right and its course is toward the left; and if it is on the left, the course is toward the right.

Steel-jacketed and cupronickel lead filled bullets will travel straight ahead, and are not deflected when striking bone equally on all sides, until their force is all expended. Should they hit bone on only one side of the bullet, as a bullet clipping the edge of a rib in passing, that bullet will be deflected toward the side meeting the greater resistance, i. e., the side striking bone.

Lead bullets may or may not be deflected in their course, depending on the resistance of the bone encountered. When striking hard bone in their course, particles of lead are likely to be found along the tract.

Bullet wounds, when the muzzle of the gun is held against the skin or clothing, are called contact wounds. Here the bullet usually enters at right angles to the presenting surface. The point of entrance may be large enough to be mistaken for a point of exit, but is surrounded by a blackened ring which is made by some of the exploding gases escaping between the end of the barrel and the surface to which it was pressed. These wounds are of such character that it is difficult to determine whether they are wounds of entrance or exit until one has demonstrated the absence or presence of powder or smudge on the skin, or until the tissues are explored for powder grains. Gas wounds are contact wounds, and are gaping, extensive, ragged-edged wounds into which the exploding gases have entered the opening made by the bullet and undermined the tissues, scorching and tearing them apart, and usually occur where there are layers of soft tissues overlying dense bone, as in the scalp.

When a gun is exploded within short range of the skin or clothing, the characteristic odor of exploded powder persists, and the powder or smudge deposit on the skin or clothing indicates the direction the bullet took, the greater amount being on the side of the point of entrance of the bullet opposite from which the bullet came, as has been pointed out by Hamilton and Wadsworth.

Revolvers in common use, 0.25, 0.32, 0.38 and 0.45 calibers, flash about 4, 5, 7 and 9 inches, respectively. Black powder gives the greater amount of smudge and unexploded powder grains. If the gun is held in contact with the skin or clothing, a blackened ring will be formed about the wound. If the gun is held away from the skin or clothing, but near enough to be within the zone of igniting gases, the flash will make an area of smudge and powder marks. This area will be of deeper color and smaller diameter, the closer the gun is held, and will gradually increase in diameter and lessen in density up to the point of the greatest flash of the gun. As the distance the gun is held from the object increases, beyond the point of greatest flash, the powder and smudge area decreases in size, but differs from the closer range in that the color of the smudge area is lighter. If the skin or clothing is within the area of igniting gases, it will be scorched, and the skin will have the appearance of the rind of smoked ham. The greatest diameter of the flash of the igniting gases of the 0.25, 0.32, 0.38 and 0.45 caliber revolvers is from 2¾ to 3¼, 3½ to 4, 4½ to 5 and 5½ to 6 inches, respectively.

If this article serves its purpose, it will deter the intern from probing wounds and, for the purpose of testimony, will stimulate him to make notes as to the presence or absence of smudge or powder marks about these wounds.

The data presented here have been worked out and found of value in the Kings County morgue, where I have worked in conjunction with Dr. W. W. Hala, pathologist of Kings County Hospital, and Dr. Carl Boettiger, assistant medical examiner of Kings County.

44 Court Street.

PNEUMATIC RUPTURE OF THE INTESTINE

Harold Schwartz, M.D., Butte, Mont.

Rupture of the intestine from the introduction of compressed air into the rectum was first described by Andrews[1] in 1911, and since then additional cases have been reported by Bendixen and Blything[2] and by Buchbinder.[3] These authors have published their own case reports, including twenty-two unpublished cases, making a total of twenty-five cases of this unusual injury described in the literature. On account of the relative infrequency of this lesion, I will place on record an additional case.

History.—J. H. P., aged 35, had become covered with sawdust in the course of his work as a carpenter. One of his companions was dusting his clothes off with compressed air, and had jokingly turned the nozzle toward the patient's rectum. The nozzle was not placed against his body, but in moderate proximity, possibly an inch or so away. The nozzle was three-fourths inch in diameter, and the hose ordinarily carried 70 pounds pressure; but at this time the pressure was supposed to be only about one-fourth on, being approximately 20 pounds. Immediately following the entrance of the air into the rectum the patient collapsed, falling to the floor and complaining of severe abdominal pain. While he was being transferred to the hospital he had a bowel movement.

Examination.—On admission, Oct. 23, 1921, at 5 p. m., the patient was in extreme shock and was complaining of severe abdominal pain. His face had a pinched expression and was slightly cyanotic. The pulse was 74, the respiration, 24; the temperature, 98.4. He complained of severe pain in the right lower quadrant of the abdomen. There was no distention, but moderate rigidity on both sides, more marked on the right. Peristalsis was entirely absent; there was no increased tympany. Breathing was costal in character. There was marked tenderness to pressure on both sides of the abdomen. An examination of the rectum disclosed no external evidences of injury, such as bruising or hemorrhage. Immediately after being placed in bed, the patient passed a considerable amount of gas. The white blood count at 5:20 was 12,500, with polymorphonuclears, 77 per cent.; the white blood count at 8 o'clock had gone up to 17,000 with polymorphonuclears, 95 per cent. A rectal tube was passed at 8:15, when a small amount of gas came away. On removal of the tube, some bloody mucus was noted. About 8:30, the patient had a well formed bowel movement, and he expelled considerable gas and also vomited. At 9, the white blood count was 18,000, with polymorphonuclears 94 per cent. The pulse rate had increased from 74 to 100; the respiration was 22; the temperature was 98.6. At 10 o'clock, examination of the abdomen revealed marked rigidity on both sides, slightly more pronounced on the right. He was still complaining of severe pain in the lower right quadrant, with marked tenderness over the same area. There was as yet no distention of the abdomen. The percussion note was slightly tympanitic, and no peristalsis was heard. There was no evidence of subcutaneous emphysema.

Operation.—Between 10:20 and 11:20 p. m., Drs. Kistler, MacPherson and Schwartz operated. Under ether anesthesia a median abdominal incision was made. When the peritoneum was opened, a considerable quantity of bright red blood escaped. There was no gas in the abdominal cavity. There was no odor, and there were no bowel contents spilled into the peritoneal cavity. The cecum was distended to approximately twice its normal size. The serosa showed multiple small lacerations, and certain areas were "ribboned," giving the appearance of a spider-web formation. There was no rupture through all the coats of the bowel. The cecum was markedly discolored, the serosa and subserosa being infiltrated with blood which was still quite bright red. These discolored areas were edematous, and involved the lower portion of the ascending colon from the ileocecal junction half way up to the hepatic flexure. There was no discoloration, edema or other evidence of injury of the small intestine. Examination of the sigmoid and upper portion of the rectum revealed a laceration through the serosa and subserosa 3 inches long and from one-third to one-half inch in width. It was in the midline of the sigmoid and upper rectum, where the peritoneum is reflected from the bladder. There was no rupture of the inner coats of the bowel. The mucosa bulged through the laceration of the external coats. The laceration of the serosa and subserosa over the sigmoid was sutured with fine catgut. There was some hemorrhage into the serosa in this region, not as marked, however, as at the cecum. The edema was also less in amount here. The upper sigmoid and descending colon were not affected, and in following up the colon no further injury was found until the midregion of the transverse colon was reached. From here to the hepatic flexure the serosa was hemorrhagic. The edema and ecchymoses were less than in the cecum. After a careful sponging out of bloody fluid from the general cavity, an appendicostomy was done. The appendix was brought out through a small puncture wound in the lower right quadrant. A catheter was inserted through the appendix into the cecum. The median incision was closed with plain catgut and silkworm-gut without drain.

Postoperative Course.—October 24, the maximal pulse was 118; temperature, 100.8 by mouth; respiration, 24. At 1:30 p. m. the patient had a spell of hiccuping lasting half an hour. There was no vomiting; some gas was passed by way of the rectal tube. The abdomen was not distended. October 25, the highest pulse rate was 100; temperature, 99; respiration, 20. The patient's general condition was somewhat improved. He had a little pain in the lower right quadrant. There was no distention of the abdomen, no vomiting, and no further hiccuping. Five hundred cubic centimeters of saline solution was given intravenously. October 26, the condition was just about the same as the day previous. Five hundred cubic centimeters of saline was given intravenously. October 27, weak peristalsis was heard over the abdomen, and the patient passed a little gas by rectum. He was given sips of water by mouth and glucose solution by rectum. October 30, the condition was improved. The drainage tube was removed from the appendicostomy. The patient had a fairly normal bowel movement. From this time on his convalescence was normal and uninterrupted until November 10, when for a period of three days he had some fever, the maximum being 102.6. The pulse went as high as 94. He had some chills, with intermittent fever and headache. At this time there was considerable increase in drainage from the appendicostomy wound. Then he had an uninterrupted recovery, and was discharged from the hospital, November 27. After leaving the hospital the patient complained of considerable weakness; he tired very easily; he had some shortness of breath and persistently rapid pulse, from 100 to 120. April 1, 1922, he felt somewhat improved, though still unable to do his usual work. His pulse remains somewhat rapid.

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[1] Andrews, E. W.: Pneumatic Rupture of the Intestine, a New Type of Industrial Accident, Surg., Gynec. & Obst. **12**: 63 (Jan.) 1911.

[2] Bendixen and Blything: Pneumatic Rupture of Bowel, Surg., Gynec. & Obst. **18**: 73 (Jan.) 1914.

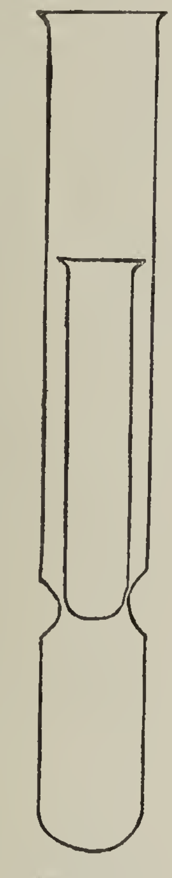
[3] Buchbinder, J. R.: Pneumatic Rupture of Intestine, J. A. M. A. **76**: 518 (Feb. 19) 1921.

Murray Hospital.

A MODIFICATION OF HALL'S ANAEROBIC CULTURE TUBE *

W. L. Holman, M.D., Stanford University, Calif.

There have been many attempts to simplify the technic for growing anaerobic bacteria in fluid mediums. In 1890, Theobald Smith[1] used small pieces of rabbit's liver in the constriction of the tubes known today as the Smith fermentation tubes, and obtained good anaerobic growth in the closed arm. Rivas,[2] in 1902, described a straight tube with a twisted constriction about the middle, and oil for the seal at this constriction. He also used ammonium hydrosulphid in the broth. This was a decided improvement over the straight walled tube with oil on the surface, as used by Hesse[3] in 1885. I had occasion to try the Rivas method while studying the anaerobes of wounds in the Robert Walton Goelet Research Laboratories at Ris Orangis and Paris in 1916-1917. I found that the constriction by itself delayed the reabsorption of oxygen after boiling, and I obtained anaerobic growth in these tubes and negative results in the straight walled control tubes, despite the fact that the tubes I used were smooth at the constriction and not twisted. The mechanical factors used to establish anaerobic conditions had also been emphasized by the work of Ori[4] and of Wrzosek,[5] and the use of brain and meat mediums,[6] which has become more or less general since the war. I first learned of Hall's constricted tube with a mechanical seal through Kendall in 1919, having overlooked Hall's[7] article, which appeared in 1915.



Modification of Hall's anaerobic culture tube.

Hall's use of the mechanical seal transformed the method, and has so simplified the anaerobic technic that it is available for use in every bacteriologic laboratory. I reported my modification in the body of a paper at the meeting of the American Association of Pathologists and Bacteriologists in 1919, and have continued to use it successfully for the last three years.

In place of the marble or other seal, I use a smaller test tube, which fits the constriction in the ordinary Roux potato tube. This inner tube is half filled with the medium and can be seeded at the same time as the large tube. It thus serves as a ready control for the presence of aerobic forms and contaminations. The inner tube can be readily lifted by forceps or the needle loop after seeding or when examining the growth, and can be removed when the entire culture is to be used. The obtaining of the increased surface tension at the point of the seal is practically the same as with the original method, and I have had excellent results in the growth of a great variety of anaerobic bacteria. I have used Roux tubes of three-fourths inch (17 mm.) diameter, measuring about 4 inches (100 mm.) above the constriction and about 1½ inches below. The inner seal tube is one-half inch in diameter and 2½ inches long. A lip makes it easier to handle.

The advantages of my modification are:

1. It offers an additional check on the culture in the same apparatus.
2. The inner tube is more readily handled than is a marble or disk.
3. It is cheaper. The tubes used, being in most laboratories, are easily arranged for this special purpose.

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* From the Department of Bacteriology and Experimental Pathology, Stanford University.

1. Smith, Theobald: Centralbl. f. Bakteriol. **7**: 502, 1890.
2. Rivas, D.: Centralbl. f. Bakteriol., Orig. **32**: 831, 1902.
3. Hesse, W. and R.: Deutsch. med. Wchnschr., 1885, No. 14, p. 214.
4. Ori, quoted by Wrzosek (Footnote 5).
5. Wrzosek, A.: Centralbl. f. Bakteriol., Orig. **43**: 17, 1907.
6. Holman, W. L.: J. Bacteriol. **4**: 149, 1919.
7. Hall, I. C.: Univ. California Pub. in Pathology **2**: 147, 1915; J. Infect. Dis. **29**: 317 (Oct.) 1921.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. Puckner, Secretary.

POLLEN DIAGNOSTICS-LEDERLE.—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent. glycerin and 33 per cent. saturated solution of sodium chloride. Pollen Diagnostics-Lederle are marketed in capillary tubes containing 0.01 Cc. of a liquid which represents 100 pollen units.

Actions and Uses.—Pollen Diagnostics-Lederle are employed for the diagnosis of hay fever (pollinosis). See New and Nonofficial Remedies, 1922, page 232, "Pollen and Epidermal Extract Preparations and Biologically Reactive Food Proteins."

Dosage.—Contents of one capillary tube, cutaneously or intradermally.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Arizona Ash Diagnostic-Lederle: Prepared from the pollen of Arizona ash (*Fraxinus toumeyi*).

Arizona Walnut Diagnostic-Lederle: Prepared from the pollen of Arizona walnut (*Juglans major*).

Black Walnut Diagnostic-Lederle: Prepared from the pollen of black walnut (*Juglans nigra*).

Careless Weed Diagnostic-Lederle: Prepared from the pollen of careless weed (*Amaranthus palmeri*).

Cottonwood Diagnostic-Lederle: Prepared from the pollen of cottonwood (*Populus macdougali*).

June Grass Diagnostic-Lederle: Prepared from the pollen of June grass (*Poa pratensis*).

Ragweed Diagnostic-Lederle: Prepared from the pollen of ragweed (*Ambrosia elatior*).

Red Top Diagnostic-Lederle: Prepared from the pollen of red top (*Agrostis palustris*).

Sage Brush Diagnostic-Lederle: Prepared from the pollen of sage brush (*Artemisia tridentata*).

Shad Scale Diagnostic-Lederle: Prepared from the pollen of shad scale (*Atriplex canescens*).

Sheep Sorrel Diagnostic-Lederle: Prepared from the pollen of sheep sorrel (*Rumex acetosella*).

Slender Ragweed Diagnostic-Lederle Prepared from the pollen of slender ragweed (*Franseria tenuifolia*).

Sweet Vernal Grass Diagnostic-Lederle: Prepared from the pollen of sweet vernal grass (*Anthoxanthum odoratum*).

Timothy Diagnostic-Lederle: Prepared from the pollen of timothy (*Phleum pratense*).

Pollen antigens-Lederle are prepared by grinding the dried pollen with glass dust in a mortar for 2.5 hours, using a diluent composed of 67 per cent. glycerin and 33 per cent. saturated sodium chloride solution to moisten the pollen. Then sufficient of the glycerin-sodium chloride solution is added so that the total volume is such that 1 Cc. is equivalent to approximately 14,000 pollen units, the pollen unit having been arbitrarily chosen as the equivalent of 0.001 mg. of pollen. This mixture is shaken for 30 minutes and then kept at 37 C. for 16 hours. It is then shaken for 1 hour, centrifugalized and passed through Buckner and Berkefeld filters.

Pollen antigens-Lederle are standardized by the complement fixation method to determine the active antigenic power of their protein content. Immune serum is obtained from rabbits which have been immunized with a gradually increasing number of units of pollen. Using the same technic for complement fixation as that adopted by the Research Laboratories for the Department of Health, New York, one pollen unit is found to be equivalent approximately to 1-20 of a unit of antigen, taking a unit of antigen as the smallest amount that gives complete fixation in the hemolytic series.

Definite Minimum Fee Excludes Some Patients.—The man who charges a definite minimum fee for his services automatically excludes a class who are in need of his help but who cannot afford his services. He excludes a class who judge of the value of service by the price paid.—P. J. Flagg, *Hosp. Prog.* **3**:143 (April) 1922.

PROCEEDINGS OF THE ST. LOUIS SESSION

MINUTES OF THE SEVENTY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ST. LOUIS, MAY 22-26, 1922

(*Concluded from page 1720*)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 24—AFTERNOON

The section was called to order at 2:05 by the chairman, Dr. Lewellys F. Barker, Baltimore.

Dr. Stewart R. Roberts, Atlanta, Ga., read a paper on "A Study of Hypotension." Discussed by Drs. George Dock, St. Louis; John Phillips, Cleveland; John G. McLaurin, Dallas, Texas; Louis F. Bishop, New York; Alexander Lambert, New York; Loyd Thompson, Hot Springs, Ark.; Elsworth Smith, St. Louis, and Stewart R. Roberts, Atlanta, Ga.

Dr. Walter L. Bierring, Des Moines, Iowa, introduced the following resolution:

> WHEREAS, It has always been the right of the Scientific Sections to have representation through a properly constituted delegate for the purpose of correlating with the aims and purposes of the Association, the special interests of each individual section, and
>
> WHEREAS, The section delegates contribute to the deliberations of the House of Delegates, the crystallized opinions which have evolved from the scientific proceedings of each particular section, and
>
> WHEREAS, This is the only point of immediate contact of the great mass of the Fellows of the American Medical Association who assemble at our annual session, with the legislative body—the House of Delegates; therefore, be it
>
> *Resolved,* That we, members and Fellows of the Association, assembled in a meeting of the Section on Practice of Medicine, do hereby protest against this attempt to completely separate the scientific from the legislative branch of the Association.

After discussion, the resolution was adopted.

Dr. Lester J. Palmer, Seattle, read a paper on "Wassermann Variations: A Study of the Serums of Seventy-Five Patients by Eight Laboratories." No discussion.

Dr. S. Calvin Smith, Philadelphia, read a paper on "Observations on the Heart in Mothers and the New-Born." Discussed by Drs. Alexander Lambert, New York; L. F. Bishop, New York, and S. Calvin Smith, Philadelphia.

Dr. John Phillips, Cleveland, read a paper on "The Relation Between Migraine and Epilepsy." Discussed by Drs. Julius Grinker, Chicago, and John Phillips, Cleveland.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Walter W. Hamburger, Chicago, read a paper on "Quinidin Treatment of Auricular Fibrillation." Discussed by Drs. Fred M. Smith, Chicago; John Wyckoff, New York; Arthur E. Strauss, St. Louis; Alexander Lambert, New York; Louis F. Bishop, New York, and Walter W. Hamburger, Chicago.

Dr. John W. Flinn, Prescott, Ariz., read a paper on "Medical Technic." Discussed by Drs. Willard J. Stone, Pasadena, Calif., and W. S. Thayer, Baltimore.

Dr. C. Lee Graber, Cleveland, read a paper on "Obesity, Its Cause and Rational Treatment." Discussed by Drs. Lulu Hunt Peters, Los Angeles, and C. Lee Graber, Cleveland.

THURSDAY, MAY 25—AFTERNOON

The section was called to order by the chairman at 2:05.

The following officers were elected: chairman, Dr. Nellis B. Foster, New York; vice chairman, Dr. Alfred Friedlander, Cincinnati; secretary (for three years), Dr. Eugene S. Kilgore, San Francisco; delegate, Dr. Walter L. Bierring, Des Moines, Iowa; alternate, Dr. Stewart R. Roberts, Atlanta, Ga.

Dr. Loyd Thompson, Hot Springs, Ark., introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology. After discussion by Drs. C. F. Hoover, Cleveland; Loyd Thompson, Hot Springs, Ark.; Alexander Lambert, New York; Kennon Dunham, Cincinnati, and Albert Fuller, Cincinnati, the motion was put and lost.

Dr. Alfred Friedlander, Cincinnati, read a paper on "Syphilis of the Lung." Discussed by Drs. Harlow Brooks, New York; Kennon Dunham, Cincinnati, and W. S. Thayer, Baltimore.

Dr. Willard J. Stone, Pasadena, Calif., read a paper on "The Treatment of Tetanus." Discussed by Drs. Abraham Zingher, New York; Richard H. Miller, Boston; Alexander Lambert, New York; A. A. Herold, Shreveport, La.; W. T. Coughlin, St. Louis; Mary Freeman, Perrine, Fla., and Willard J. Stone, Pasadena, Calif.

Dr. Leo Kessel, New York, read a paper on "An Evaluation of Therapeutic Procedures and the Discussion of the Pathogenesis of Grave's Syndrome." Discussed by Drs. C. F. Hoover, Cleveland; A. S. Blumgarten, New York; H. T. Hyman, New York; Joseph C. Aub, Boston, and Leo Kessel, New York.

Dr. J. Marion Read, San Francisco, read a paper on "Relation of the Pulse Rate and Pulse Pressure to Basal Metabolism." Discussed by Drs. Walter M. Boothby, Rochester, Minn., and J. Marion Read, San Francisco.

Dr. William A. Jenkins, Louisville, Ky., read a paper on "Myocarditis and Its Management." Discussed by Drs. L. F. Bishop, New York; W. E. Simmonds, Chicago, and William A. Jenkins, Louisville, Ky.

Dr. James S. McLester, Birmingham, Ala., read a paper on "The Diagnostic Value of Blood Fibrin Determinations, with Special Reference to Disease of the Liver." No discussion.

Drs. Russell L. Cecil and N. P. Larsen, New York, presented a paper on "Study of a Thousand Cases of Pneumonia in Bellevue Hospital." Discussed by Drs. F. C. Huntoon, Glenolden, Pa.; Nellis B. Foster, New York; Willard J. Stone, Pasadena, Calif.; Mary Freeman, Perrine, Fla.; Alexander Lambert, New York, and Russell L. Cecil, New York.

FRIDAY, MAY 26—AFTERNOON

A joint meeting was held with the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology.

The meeting was called to order at 2 o'clock by the chairman of the Section on Pharmacology and Therapeutics, Dr. Carl Voegtlin, Washington, D. C.

The following papers were read as a symposium on "Internal Secretions":

Dr. Lewellys F. Barker, Baltimore: "Endocrinology" (address of chairman, Section on Practice of Medicine).

Dr. Walter B. Cannon, Boston: "Conditions Controlling Internal Secretion."

Dr. Joseph C. Aub, Boston: "Metabolic Effects of the Glands of Internal Secretion."

Dr. A. J. Carlson, Chicago: "Hypofunction and Hyperfunction of the Glands of Internal Secretion."

Dr. R. G. Hoskins, Columbus, Ohio: "Principles of Endocrinology Applicable to Organtherapy."

These five papers were discussed by Drs. William Engelbach, St. Louis; L. G. Rowntree, Rochester, Minn.; Walter M. Boothby, Rochester, Minn.; Walter Timme, New York; A. S. Blumgarten, New York; Louis B. Wilson, Rochester, Minn.; Walter B. Cannon, Boston; Joseph C. Aub, Boston; A. J. Carlson, Chicago; Lewellys F. Barker, Baltimore, and R. G. Hoskins, Columbus, Ohio.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

Wednesday, May 24—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Wallace I. Terry, San Francisco.

Dr. Burton J. Lee, New York, read a paper on "The Treatment of Recurrent Inoperable Carcinoma of the Breast by Means of Radium and Roentgen Ray."

Dr. James T. Case, Battle Creek, Mich., read a paper on "The New Short Wave Length Roentgen-Ray Therapy."

These two papers were discussed by Drs. George E. Pfahler, Philadelphia; Thomas A. Groover, Washington, D. C.; Joseph C. Bloodgood, Baltimore; Carl Beck, Chicago; John J. Gilbride, Philadelphia; W. D. Haggard, Nashville, Tenn.; J. H. Schroeder, Cincinnati; Burton J. Lee, New York, and James T. Case, Battle Creek, Mich.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Richard H. Miller, Boston, read a paper on "The Treatment of Tuberculous Cervical Adenitis." Discussed by Drs. Harry G. Sloan, Cleveland; Frank H. Lahey, Boston, and Richard H. Miller, Boston.

Dr. T. Turner Thomas, Philadelphia, read a paper on "The Immediate Closure Without Drainage of the Usual Compound Fracture of the Leg." Discussed by Drs. Fordyce B. St. John, New York; Fred W. Bailey, St. Louis; W. T. Coughlin, St. Louis; Florus F. Lawrence, Columbus, Ohio; Isidore Cohn, New Orleans; H. W. Orr, Lincoln, Neb.; Daniel F. Jones, Boston; William Fuller, Chicago; Dennis W. Crile, Chicago, and T. Turner Thomas, Philadelphia.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Frederic W. Bancroft, New York, read a paper on "The Fate of the Necrosed Bone in Chronic Osteomyelitis." Discussed by Drs. Dennis W. Crile, Chicago; Barney Brooks, St. Louis; Albert J. Ochsner, Chicago; LeRoy Sante, St. Louis; T. Turner Thomas, Philadelphia, and Frederic W. Bancroft, New York.

Dr. Rea Smith, Los Angeles, read a paper on "The Surgical Relief of Intestinal Foci of Infection in Cases of Arthritis Deformans." Discussed by Dr. E. D. Twyman, Kansas City, Mo.

Thursday, May 25—Morning

The meeting was called to order at 9 o'clock by the vice chairman, Daniel F. Jones, Boston.

Dr. Wallace I. Terry, San Francisco, read the chairman's address.

The following officers were elected: chairman, Eugene H. Pool, New York; vice chairman, Harry P. Ritchie, St. Paul; secretary, Urban Maes, New Orleans; delegate, W. D. Haggard, Nashville, Tenn.; alternate, Carl B. Davis, Chicago; Executive Committee, George P. Muller, Philadelphia; Wallace I. Terry, San Francisco, and Eugene H. Pool, New York.

Dr. Robert C. Coffey, Portland, Ore., read a paper on "The Treatment of Cancer of the Rectum." Discussed by Drs. Daniel F. Jones, Boston; J. Tate Mason, Seattle; Carl B. Davis, Chicago; George W. Crile, Cleveland, and Robert C. Coffey, Portland, Ore.

Dr. Martin B. Tinker, Ithaca, New York, read a paper on "The Desperate Risk Goiter."

Dr. J. Earl Else, Portland, Ore., read a paper on "The Cause of Surgical Failure in Hyperthyroidism."

These two papers were discussed by Drs. George W. Crile, Cleveland; Walter M. Boothby, Rochester, Minn.; Frank H. Lahey, Boston; W. W. Grant, Denver; Willard Bartlett, St. Louis; John J. Gilbride, Philadelphia; Harry G. Sloan, Cleveland; W. D. Haggard, Nashville, Tenn.; John B. Haeberlin, Chicago; Charles H. Mayo, Rochester, Minn.; Martin B. Tinker, Ithaca, N. Y., and J. Earl Else, Portland, Ore.

Dr. A. W. Adson, Rochester, Minn., read a paper on "Results Following the Removal of Spinal Cord Tumors." Discussed by Drs. Charles H. Frazier, Philadelphia; Ernest Sachs, St. Louis, and A. W. Adson, Rochester, Minn.

Drs. Harry P. Ritchie, St. Paul, and John Staige Davis, Baltimore, presented a paper on "The Classification of Congenital Clefts of the Lip and Palate, with Suggestions for Recording These Cases." Discussed by Drs. James E. Thompson, Galveston, Texas; Vilray P. Blair, St. Louis; Truman W. Brophy, Chicago, and Harry P. Ritchie, St. Paul.

Dr. Moses Salzer, Cincinnati, read a paper on "Anesthesia; a Part-Time Specialty." Discussed by Drs. F. H. McMechan, Avon Lake, Ohio; Herbert A. Black, Pueblo, Colo., and Moses Salzer, Cincinnati.

Friday, May 26—Morning

A joint meeting was held with the Section on Gastro-Enterology and Proctology.

The meeting was called to order at 9 o'clock by the chairman of the Section on Surgery, General and Abdominal, Dr. Wallace I. Terry, San Francisco.

The following papers were read as a symposium on "Peptic Ulcer":

Dr. Arthur Dean Bevan, Chicago: "The Relative Value of Medical and Surgical Treatment of Gastric and Duodenal Ulcer and the Indication for Each."

Dr. Bertram W. Sippy, Chicago: "The Relative Value of Medical and Surgical Treatment in Gastric and Duodenal Ulcer."

Dr. Thomas R. Brown, Baltimore: "The Relative Rôles of Medical and Surgical Treatment in Gastric and Duodenal Ulcer."

These three papers were discussed by Drs. J. M. T. Finney, Baltimore; Franklin W. White, Boston; Walter C. Alvarez, San Francisco; Albert J. Ochsner, Chicago; Frank Smithies, Chicago; Robert C. Coffey, Portland, Ore.; Seale Harris, Birmingham, Ala.; J. Shelton Horsley, Richmond, Va.; Arthur Dean Bevan, Chicago; Bertram W. Sippy, Chicago; Charles H. Mayo, Rochester, Minn., and Thomas R. Brown, Baltimore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Wednesday, May 24—Afternoon

The section was called to order at 2 o'clock by the chairman, Dr. Sidney A. Chalfant, Pittsburgh.

Dr. Chalfant read the chairman's address, entitled "Some Gynecologic Misdemeanors."

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

The chairman appointed Drs. Frederick J. Taussig, St. Louis, and T. J. Watkins, Chicago, to serve on the Executive Committee, Drs. Reuben Peterson, Ann Arbor, Mich., and John O. Polak, New York, being absent.

Dr. Roland S. Cron, Ann Arbor, Mich., read a paper on "Carbon Dioxid Gas Inflation as Means of Determining Sterility in Women." Discussed by Drs. George Gray Ward, Jr., New York, and Roland S. Cron, Ann Arbor, Mich.

Dr. Emil Novak, Baltimore, read a paper on "Hydatidiform Mole and Chorio-Epithelioma." Discussed by Drs. Frederick J. Taussig, St. Louis; Herbert A. Black, Pueblo, Colo.; Otto H. Schwarz, St. Louis; J. Earl Else, Portland, Ore.; T. J. Watkins, Chicago; Moses Childress, Oskaloosa, Iowa; John P. Gardiner, Toledo, Ohio; J. Craig Neel, San Francisco, and Emil Novak, Baltimore.

Drs. John G. Clark and Floyd E. Keene, Philadelphia, presented a paper on "Uterine Hemorrhage of Benign Origin Treated by Irradiation: An Analysis of Five Hundred and Twenty-Seven Cases of Myoma Uteri and Myopathic Lesions." Discussed by Drs. Henry Schmitz, Chicago; F. F. Lawrence, Columbus, Ohio, and John G. Clark, Philadelphia.

Dr. J. Craig Neel, San Francisco, read a paper on "The Treatment of Cystocele, with Report of Cases."

Dr. Alfred Baker Spalding, San Francisco, read a paper on "The Cause and Cure of High Rectocele."

Dr. George Gray Ward, Jr., New York, read a paper on "The Technic of the Repair of Enterocele (Posterior Vaginal Hernia) and Rectocele as an Entity and When Associated with Prolapse of the Uterus."

These three papers were discussed by Drs. C. H. Magee, Burlington, Iowa; Albert Goldspohn, Chicago; John F. Herrick, Ottumwa, Iowa; J. Craig Neel, San Francisco, and Alfred Baker Spalding, San Francisco.

Drs. L. R. Wharton and J. W. Pierson, Baltimore, presented a paper on "A Clinical and Roentgenologic Study of the Minor Forms of Embolism Following Abdominal Operations." Discussed by Drs. Emil Novak, Baltimore, and L. R. Wharton, Baltimore.

Thursday, May 25—Afternoon

The chairman appointed Dr. Rudolph W. Holmes, Chicago, to serve on the Executive Committee, Dr. T. J. Watkins, Chicago, having been called home.

Dr. G. K. Dickinson, Jersey City, N. J., read a paper on "Perforating Ulcers of the Cecum." Discussed by Dr. Charles H. Mayo, Rochester, Minn.

Dr. Harold W. Shutter, Milwaukee, read a paper on "Care of the Bladder During Pregnancy, Labor and the Puerperium." Discussed by Drs. Arthur H. Curtis, Chicago; John J. Gardiner, Toledo, Ohio, and Harold W. Shutter, Milwaukee.

Dr. Charles H. Mayo, Rochester, Minn., read a paper on "The Cause and Relief of Acute Intestinal Obstruction." Discussed by Drs. George W. Crile, Cleveland, and Charles H. Mayo, Rochester, Minn.

Dr. Joseph L. Baer, Chicago, read a paper on "A Contribution to the Problem of Nephritis and Nephrosis in Pregnancy." Discussed by Drs. A. B. Spalding, San Francisco; Carl H. Davis, Milwaukee; N. S. Heaney, Chicago, and Joseph L. Baer, Chicago.

Drs. J. B. DeLee and E. L. Cornell, Chicago, presented a paper on "Results of the Low Cervical Cesarean Section (Laparotracheotomy) in One Hundred and Twenty-Five Cases at the Chicago Lying-In Hospital."

Dr. E. L. King, New Orleans, read a paper on "The End-Results of Cesarean Section."

These two papers were discussed by Drs. Rudolph W. Holmes, Chicago; Charles E. Paddock, Chicago; George Gellhorn, St. Louis; David S. Hillis, Chicago; Benjamin H. Breakstone, Chicago; Bertha Van Hoosen, Chicago; Joseph L. Baer, Chicago; E. L. Cornell, Chicago, and E. L. King, New Orleans.

Friday, May 26—Afternoon

The following officers were elected: chairman, Dr. E. P. Davis, Philadelphia; vice chairman, Dr. Harry S. Crossen, St. Louis; secretary, Dr. Carl H. Davis, Milwaukee; delegate, Dr. George Gray Ward, Jr., New York; alternate, Dr. Alfred Baker Spalding, San Francisco.

Dr. Leda J. Stacy, Rochester, Minn., read a paper on "Retroverted Uterus: Incidence and Symptoms."

Dr. Palmer Findley, Omaha, read a paper on "Frequency and Clinical Significance of Uterine Displacements."

Dr. Harry E. Mock, Chicago, read a paper on "So-Called Traumatic Uterine Displacements: Medicolegal Aspects of This Problem."

These three papers were discussed by Drs. George Gellhorn, St. Louis; P. B. Salatich, New Orleans; Frederick J. Taussig, St. Louis; Albert Goldspohn, Chicago; Hudson Talbott, St. Louis; Hugo Ehrenfest, St. Louis; Henry Schwarz, St. Louis; A. N. Creadick, New Haven, Conn.; Harry E. Mock, Chicago; Palmer Findley, Omaha, and Leda J. Stacy, Rochester, Minn.

Dr. Axel Werelius, Chicago, read a paper entitled "Is Death in Acute Intestinal Obstruction Due to a Hepatic Insufficiency?" Discussed by Drs. Barney Brooks, St. Louis; James J. Moorhead, Terre Haute, Ind., and Axel Werelius, Chicago.

SECTION ON OPHTHALMOLOGY

Wednesday, May 24—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Nelson Miles Black, Milwaukee.

Dr. Nelson Miles Black, Milwaukee, read the chairman's address.

Dr. S. Lewis Ziegler, Philadelphia, read a paper on "A Further Note on Rapid Dilatation in the Radical Treatment of Lacrimonasal Disease." Discussed by Drs. Arthur J. Bedell, Albany, N. Y.; John A. Donovan, Butte, Mont.; George F. Keiper, Lafayette, Ind.; William Zentmayer, Philadelphia; E. C. Ellett, Memphis, Tenn.; W. R. Thompson, Fort Worth, Texas; Allen Greenwood, Boston; John Green, Jr., St. Louis; J. W. Charles, St. Louis, and S. Lewis Ziegler, Philadelphia.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. William L. Benedict, Rochester, Minn., read a paper on "The Retinitis of Hypertension Plus Nephritis."

Dr. Joseph L. Behan, Brooklyn, read a paper on "The Fundus Changes in Nephritis."

Dr. Martin Cohen, New York, read a paper on "The Significance of Pathologic Changes in the Fundus in General Arterial and Kidney Diseases."

These three papers were discussed by Drs. George Slocum, Ann Arbor, Mich.; Albert E. Bulson, Jr., Fort Wayne, Ind.; Allen Greenwood, Boston; J. W. Charles, St. Louis; W. H. Wilder, Chicago; S. Lewis Ziegler, Philadelphia; E. V. L. Brown, Chicago; William L. Benedict, Rochester, Minn.; Joseph L. Behan, Brooklyn, and Martin Cohen, New York.

Dr. William C. Finnoff, Denver, read a paper on "A Method of Examining Cases of Recurrent Hemorrhages into the Retina and Vitreous of Young Persons." Discussed by Drs. William Zentmayer, Philadelphia; Albert E. Bulson, Jr., Fort Wayne, Ind.; Edward Jackson, Denver; George S. Derby, Boston, and William C. Finnoff, Denver.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. V. E. Van Kirk, Pittsburgh, read a paper on "Industrial Ophthalmology: A Survey of Twenty-Five Thousand Cases." Discussed by Drs. George H. Cross, Chester, Pa.; Albert C. Snell, Rochester, N. Y.; John A. Donovan, Butte, Mont.; Gilbert E. Seaman, Milwaukee; Albert E. Bulson, Jr., Fort Wayne, Ind.; Frederick T. Hyde, Port Angeles, Wash.; Lewis H. Taylor, Wilkes-Barre, Pa.; Frank S. Auten, Belleville, Ill.; J. W. Charles, St. Louis; George F. Keiper, Lafayette, Ind.; Rufus Jackson, Baton Rouge, La., and V. E. Van Kirk, Pittsburgh.

Major Edmund B. Spaeth, Washington, D. C., read a paper on "A Series of Ophthalmologic Cases Illustrating Various Methods in Plastic Surgery for Correction of Deformities Due to Injury with a Resulting Loss of Tissue." Discussed by Dr. V. P. Blair, St. Louis, and Major Edmund B. Spaeth, Washington, D. C.

Thursday, May 25—Morning

The meeting was called to order at 9 o'clock by the chairman.

Dr. William P. Reaves, Greensboro, N. C., exhibited a visual acuity and astigmatic cabinet.

Dr. A. E. Ewing, St. Louis, demonstrated the preservation of gross eye specimens.

Dr. Lucien Howe, Buffalo, read a paper on "The Coefficient of Thermal Conductivity of the Eye and Orbit, Measured with Warm Applications." Discussed by Drs. William E. Shahan, St. Louis; Arthur E. Prince, Springfield, Ill., and Lucien Howe, Buffalo.

Drs. James Moores Ball and Thomas Noxon Tooney, St. Louis, presented a paper on "Vaccinia of the Eyelids by Homo-Inoculation." Discussed by Dr. George W. Jean, Santa Barbara, Calif.

Dr. Edward Jackson, Denver, read a paper on "Examination of the Eye by Direct Sunlight." Discussed by Drs. George F. Keiper, Lafayette, Ind.; Marcus Feingold, New

Orleans; William C. Finnoff, Denver, and Edward Jackson, Denver.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper on "The Iris in Health and Disease as Seen with the Slit Lamp." Discussed by Drs. Harry S. Gradle, Chicago; Marcus Feingold, New Orleans; Martin Cohen, New York, and Arthur J. Bedell, Albany, N. Y.

Dr. Joseph P. Israel, Houston, Texas, read a paper on "Some Ophthalmologic Manifestations of Diseases of the Nervous System." Discussed by Dr. J. M. Banister, Omaha.

Dr. John O. McReynolds, Dallas, Texas, read a paper on "Intracapsular Operations for Cataract in North America."

Dr. A. E. Ewing, St. Louis, read a paper on "Zonule Protection in Cataract Extraction."

These two papers were discussed by Drs. Allen Greenwood, Boston; G. C. Savage, Nashville, Tenn.; Arthur E. Prince, Springfield, Ill.; L. D. Green, San Francisco; George S. Derby, Boston; Frank S. Auten, Belleville, Ill.; John H. Burleson, San Antonio, Texas; Joseph S. Lichtenburg, Kansas City, Mo.; M. Hayward Post, St. Louis, and John O. McReynolds, Dallas, Texas.

Dr. H. D. Lamb, St. Louis, read a paper on "Blindness in Missouri as Revealed by Examinations Under the State Blind Pension Law of 1921." Discussed by Drs. John Green, Jr., St. Louis; E. C. Ellett, Memphis, Tenn.; Harold Bailey, Springfield, Mo.; Nelson Miles Black, Milwaukee, and H. D. Lamb, St. Louis.

Friday, May 26—Morning

The meeting was called to order at 9 o'clock by the chairman.

Dr. Lucien Howe, Buffalo, presented the report of the Committee on the Study of Ocular Blindness, and asked that the committee be continued.

Dr. Arthur J. Bedell, Albany, N. Y., moved that the report be accepted and that the committee be continued. Seconded and carried.

Dr. Lucien Howe, Buffalo, presented the report of the Committee on the Prevention of Blindness, and asked that the committee be continued.

Dr. Marcus Feingold, New Orleans, moved that the report be accepted and that the committee be continued. Seconded and carried.

The report of the Committee on Local Anesthesia, Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., chairman, was read by the secretary.

Dr. C. D. Wescott, Chicago, moved that the report be accepted and that the committee be continued. Seconded and carried.

The report of the Committee Appointed to Cooperate in Arranging and Organizing an International Congress of Ophthalmology was presented by Dr. Edward Jackson, Denver.

Dr. Arthur J. Bedell, Albany, N. Y., moved that the report be accepted and that the committee be thanked for its work and discharged. Seconded and carried.

Dr. W. H. Wilmer, Washington, D. C., presented the report of the Committee on Award of the Knapp Medal, recommending for this medal the paper of Dr. F. H. Verhoeff, Boston, on "Glioma of the Optic Nerve."

Dr. Harry S. Gradle, Chicago, presented the majority report of the Committee on Estimating Compensation for Eye Injuries.

Dr. Albert S. Snell, Rochester, N. Y., presented the minority report.

Dr. G. C. Savage, Nashville, Tenn., moved that the committee be continued. Seconded.

Dr. C. D. Wescott, Chicago, moved, as an amendment to Dr. Savage's motion, that the committee be continued and that two more members be added. Amendment accepted. This motion was discussed by Drs. George F. Keiper, Lafayette, Ind.; James M. Patton, Omaha; V. E. Van Kirk, Pittsburgh; John A. Donovan, Butte, Mont.; John O. McReynolds, Dallas, Texas; Harry S. Gradle, Chicago, and Albert C. Snell, Rochester, N. Y.

Vote on the amended motion lost.

Dr. John A. Donovan, Butte, Mont., moved that the majority report be approved and that the committee be continued. Seconded and carried.

Dr. Lucien Howe, Buffalo, moved that the Committee on the International Year Book be continued and permission be given to make its report later. Seconded and carried.

Dr. Lucien Howe, Buffalo, then presented the following resolution:

Whereas, The avowed object of the Knapp Memorial Fund is to encourage and aid scientific work and advancement in the field of ophthalmology; and

Whereas, The awarding of a prize medal, no matter how modest in itself, serves to stimulate ambition and encourage scientific work often more than financial assistance; and

Whereas, The invested amount of this Knapp fund now apparently exceeds $3,500 and is gradually increasing; therefore, be it

Resolved, That the committee in charge of that fund be hereby requested to expend half of the annual interest for the purchase of a suitable simple medal to be awarded annually, unless in certain years there be some special reason to the contrary; and

Resolved, That in making that award the scientific work already accomplished by a member shall be rated at 50 per cent., and the excellence of a paper presented at the previous meeting shall be rated also at 50 per cent. of the measure by which the committee shall decide to whom that medal is given.

Dr. Lucien Howe, Buffalo, moved the adoption of this resolution. Motion seconded by Dr. George S. Derby, Boston, who offered an amendment to the effect that this matter be referred to the Executive Committee for their action and report next year. Amended motion seconded by Dr. C. D. Wescott, Chicago. Dr. Howe did not accept the amendment, but the amended motion carried.

The following officers were elected: chairman, John O. McReynolds, Dallas, Texas; vice chairman, John Green, Jr., St. Louis; secretary, George S. Derby, Boston; delegate, Cassius D. Wescott, Chicago; alternate, Harry S. Gradle, Chicago; member of the Board of Ophthalmic Examinations, Walter R. Parker, Detroit.

Dr. James Patton, Omaha, read a paper on "The Localization and Extraction of Intra-Ocular Foreign Bodies." Discussed by Drs. George S. Derby, Boston; George F. Keiper, Lafayette, Ind.; J. M. Banister, Omaha; A. E. Ewing, St. Louis; John A. Donovan, Butte, Mont.; J. G. Dorsey, Wichita, Kan.; Oliver Tydings, Chicago, and James Patton, Omaha.

Drs. Walter Scott Franklin and Frederick C. Corder, San Francisco, presented a paper on "An Unusual Orbital Tumor." No discussion.

Drs. H. W. Luedde and J. F. Hardesty, St. Louis, presented a paper on "Central Retinitis with Recovery of Normal Vision." Discussed by Drs. Greenfield Sluder, St. Louis; J. W. Charles, St. Louis; A. E. Ewing, St. Louis; Edward C. Spitze, East St. Louis; Joseph S. Lichtenburg, Kansas City, Mo.; C. D. Wescott, Chicago; J. M. Banister, Omaha; Oliver Tydings, Chicago; Abraham Levinson, Chicago, and W. H. Luedde, St. Louis.

Dr. Cecil M. Jack, Decatur, Ill., read a paper on "Focal Infection in the Tonsil Causing a Tuberculous Opththalmia." Discussed by Drs. Oliver Tydings, Chicago, and William C. Finnoff, Denver.

Dr. H. H. Briggs, Asheville, N. C., read a paper on "The Importance of Heterophoria Tests in Routine Refraction." Discussed by Drs. G. C. Savage, Nashville, Tenn.; John Green, Jr., St. Louis, and H. H. Briggs, Asheville, N. C.

Dr. Avery D. Prangen, Rochester, Minn., read a paper on "Spasm of Accommodation, with Report of Thirty Cases." Discussed by Drs. Charles A. Bahn, New Orleans; William L. Benedict, Rochester, Minn., and Avery D. Prangen, Rochester, Minn.

Dr. Joseph D. Heitger, Louisville, Ky., read a paper on "The Advantages of the Use of Minus Cylinders in Routine Refractions." Discussed by Drs. John Green, Jr., St. Louis, and Joseph Heitger, Louisville, Ky.

Dr. Oscar Wilkinson, Washington, D. C., read a paper on "Present Day Status of Squint Surgery—a New Operative Technic." Discussed by Drs. G. C. Savage, Nashville, Tenn.; J. M. Banister, Omaha; H. H. Briggs, Asheville, N. C.; John Green, Jr., St. Louis; Meyer Wiener, St. Louis; Eldred B. Cayce, Nashville, Tenn., and Oscar Wilkinson, Washington, D. C.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. J. A. Stucky, Lexington, Ky.

Dr. J. A. Stucky, Lexington, Ky., read the chairman's address.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion was adopted.

The chairman appointed Dr. Burt R. Shurly to take the place of Dr. Emil Mayer as delegate from the section and also on the executive committee in place of Dr. Ross H. Skillern.

Dr. John J. Shea, Memphis, Tenn., read a paper on "A Comparative Study of the Ethmoidal and Sphenoidal Operations." Discussed by Drs. Frank L. Dennis, Colorado Springs, Colo.; T. E. Carmody, Denver; John A. Cavanaugh, Chicago; Edwin McGinnis, Chicago; Fred J. Pratt, Minneapolis, and John J. Shea, Memphis, Tenn.

Dr. Gordon B. New, Rochester, Minn., read a paper on "The Nasopharyngeal Syndrome." Discussed by Drs. H. W. F. Waltman, Rochester, Minn.; Joseph C. Beck, Chicago, and Gordon B. New, Rochester, Minn.

Dr. Lafayette Page, Indianapolis, read a paper on "Observations on the Effects of Intratracheal Medication on Gas Burns of the Respiratory Tract." Discussed by Drs. Norval H. Pierce, Chicago; Burt R. Shurly, Detroit; Wendell C. Phillips, New York, and Lafayette Page, Indianapolis.

Dr. George E. Shambaugh, Chicago, read a paper on "An Experiment in Graduate Training in Otolaryngology." Discussed by Drs. Joseph C. Beck, Chicago; Charles G. Stivers, Los Angeles; Wendell C. Phillips, New York; Charles W. Richardson, Washington, D. C.; M. A. Goldstein, St. Louis; Norval H. Pierce, Chicago; Jacques Holinger, Chicago; William B. Chamberlain, Cleveland; Gilbert E. Seaman, Milwaukee, and George E. Shambaugh, Chicago.

Dr. Albert H. Miller, Providence, R. I., read a paper on "Pharyngeal Insufflation Anesthesia." Discussed by Drs. Joseph C. Beck, Chicago; Edwin McGinnis, Chicago, and Albert H. Miller, Providence, R. I.

Dr. W. Perry Reaves, Greensboro, N. C., read a paper on "Condensed and Accurate Charting of Examination and Diagnosis of Ear, Nose, Throat and Teeth." Discussed by Drs. Joseph D. Heitger, Louisville, Ky.; George F. Keiper, Lafayette, Ind., and W. Perry Reaves, Greensboro, N. C.

Thursday, May 25—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

Dr. George E. Davis, New York, read a paper on "The Future of the Blood Clot Dressing in Mastoid Surgery." Discussed by Drs. J. A. Stucky, Lexington, Ky.; Harold M. Hays, New York; George E. Shambaugh, Chicago, and George E. Davis, New York.

Dr. Frank L. Dennis, Colorado Springs, Colo., read a paper on "The Practical Diagnostic Value of Tests of the Vestibular Mechanism." Discussed by Drs. Harold M. Hays, New York; H. W. Lyman, St. Louis; H. I. Lillie, Rochester, Minn.; Norval H. Pierce, Chicago; Chester C. Cott, Buffalo; George E. Shambaugh, Chicago; M. A. Goldstein, St. Louis, and Frank L. Dennis, Colorado Springs, Colo.

Dr. Harold Fletcher, San Francisco, read a paper on "Determination of Disability as to Loss of Hearing and the Importance of Vertigo in Industrial Accident Cases." Discussed by Drs. Charles G. Stivers, Los Angeles; John A. Donovan, Butte, Mont.; George E. Shambaugh, Chicago; J. W. Charles, St. Louis; William House, Portland, Ore.; M. A. Goldstein, St. Louis, and Harold Fletcher, San Francisco.

Dr. H. I. Lillie, Rochester, Minn., read a paper on "Otalgia and Mastoidalgia Not Indications for the Mastoid Operation." Discussed by Drs. Greenfield Sluder, St. Louis; Norval H. Pierce Chicago; Harry L. Pollock, Chicago; Louis K. Guggenheim, St. Louis; J. W. Charles, St. Louis; Ivor G. Clark, Columbus, Ohio; Harry H. Meyer, St. Louis; Jacques Holinger, Chicago, and H. I. Lillie, Rochester, Minn.

Dr. J. W. Jervey, Greenville, S. C., read a paper on "Mastoiditis Hyperplastica Serosa." Discussed by Drs. J. A. Stucky, Lexington, Ky.; Arnold B. Kauffman, Chicago; Norval H. Pierce, Chicago; George E. Shambaugh, Chicago; Louis K. Guggenheim, St. Louis, and J. W. Jervey, Greenville, S. C.

Dr. C. F. Yerger, Chicago, read a paper on "Meningitis of Otitic Origin: A Statistical Study Based on Sixty-Three Cases Observed at Cook County Hospital During the Decade from 1911 to 1920, Inclusive." Discussed by Drs. Norval H. Pierce, Chicago; Jacques Holinger, Chicago; Louis K. Guggenheim, St. Louis, and C. F. Yerger, Chicago.

Friday, May 26—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. William B. Chamberlain, Cleveland; vice chairman, Dr. J. W. Jervey, Greenville, S. C.; secretary, Dr. Samuel Iglauer, Cincinnati; delegate, Dr. Burt R. Shurly, Detroit; alternate, Dr. Hill Hastings, Los Angeles.

Drs. Fred Wade Jones and H. E. Middleton, Alton, Ill., presented an ether apparatus.

The report of the Committee on the Education of the Deaf Child was read by Dr. M. A. Goldstein, St. Louis. It was moved by Dr. William E. Sauer, St. Louis, that this report be accepted. Seconded and carried.

The report of the Committee on Postgraduate Teaching was read by the secretary. It was moved by Dr. M. A. Goldstein, St. Louis, that the report be accepted and the committee discharged. Seconded and carried.

The report of the Committee on Necrology was read by the secretary. It was moved by Dr. M. A. Goldstein, St. Louis, that this report be accepted by rising vote. Carried.

The report of the Committee on the Use of Caustic Alkalis was read by Dr. Chevalier Jackson, Philadelphia. It was moved by Dr. William B. Chamberlain, Cleveland, that the report be accepted and the committee continued. Seconded and carried.

Dr. William B. Chamberlain, Cleveland, read a communication from the Committee of Organization of the Tenth International Congress of Otology, to be held in Paris, July 19-22, 1922.

Dr. Chevalier Jackson, Philadelphia, read a paper on "Bronchoscopic Observations on the Cough Reflex in Health and Disease." Discussed by Dr. Samuel Iglauer, Cincinnati.

Dr. Elmer L. Kenyon, Chicago, read a paper on "The Significance of the Extrinsic Musculature of the Larynx and Its Relationship to Certain Disorders of Voice." Discussed by Drs. Charles G. Stivers, Los Angeles; Louis K. Guggenheim, St. Louis; Jacques Holinger, Chicago; Dennis J. McDonald, New York, and Elmer L. Kenyon, Chicago.

The chairman presented Dr. George E. de Schweinitz, the President of the American Medical Association.

Dr. Charles G. Stivers, Los Angeles, read a paper on "The Need of Standards of Training for Specialists, General Practitioners and Teachers of Speech Correction." Discussed by Drs. M. A. Goldstein, St. Louis; Elmer L. Kenyon, Chicago; Dennis J. McDonald, New York; Louis K. Guggenheim, St. Louis; J. A. Stucky, Lexington, Ky., and Charles G. Stivers, Los Angeles.

Dr. Sidney Israel, Houston, Texas, read a paper on "The Correction of External Deformities of the Nose Through the Intranasal Approach." Discussed by Drs. W. T. Coughlin, St. Louis; Harry L. Pollock, Chicago; William M. C. Bryan, St. Louis; M. A. Goldstein, St. Louis; William B. Chamberlain, Cleveland; Samuel Iglauer, Cincinnati; J. M. Banister, Omaha; Roy P. Scholz, St. Louis; Louis K. Guggenheim, St. Louis, and Sidney Israel, Houston, Texas.

SECTION ON DISEASES OF CHILDREN

Wednesday, May 24—Morning

The meeting was called to order at 9:15 by the chairman, Dr. Emanuel C. Fleischner, San Francisco.

Drs. Charles Gilmore Kerley and Edward J. Lorenze, Jr., New York, presented a paper on "Hyperacidity of the Stomach Contents in Children." Discussed by Drs. John Zahorsky, St. Louis; Thomas C. McCleave, Oakland, Calif.; Mary Freeman, Perrine, Fla.; Harry Lowenburg, Philadelphia; Frank B. Hollenbeck, Lincoln, Neb., and Charles Gilmore Kerley, New York.

Dr. Abram Zingher, New York, read a paper on "Immunity Results Obtained with Mixtures of Diphtheria Toxin-Antitoxin in the Public Schools of New York City (Manhattan and the Bronx) and in Various Institutions." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; Charles Gilmore Kerley, New York; C. A. Earle, DesPlaines, Ill.; William A. Mulherin, Augusta, Ga.; Ernest R. Brooks, Cleveland, and Abraham Zingher, New York.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. William R. P. Emerson, Boston, read a paper on "Physical Unfitness in Children." Discussed by Drs. W. H. O. Hoffmann, Chicago; Albert D. Kaiser, Rochester, N. Y.; William H. Donnelly, Brooklyn; Alfred L. Kastner, Milwaukee; George E. Baxter, Chicago, and William R. P. Emerson, Boston.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Albert D. Kaiser, Rochester, N. Y., read a paper on "Effects of Tonsillectomy on General Health in Five Thousand Children." Discussed by Drs. Julius H. Hess, Chicago; William R. P. Emerson, Boston; Harry Lowenburg, Philadelphia; John Zahorsky, St. Louis, and Albert D. Kaiser, Rochester, N. Y.

Dr. H. Leonard Bolen, Chicago, read a paper on "Diabetes Mellitus in Children Following Infection." Discussed by Drs. Charles Gilmore Kerley, New York; Isaac A. Abt, Chicago, and H. Leonard Bolen, Chicago.

Thursday, May 25—Morning

The meeting was called to order at 9:15 by the vice chairman, Dr. William A. Mulherin, Augusta, Ga.

Dr. Emanuel C. Fleischner, San Francisco, read the chairman's address. No discussion.

Dr. Henry Dietrich, Los Angeles, read a paper on "An Analysis of Private Case Records with Reference to Certain Phases of Breast Feeding." Discussed by Drs. I. A. Abt, Chicago; William A. Mulherin, Augusta, Ga.; Thomas C. McCleave, Oakland, Calif.; M. L. Turner, Des Moines, Iowa; L. R. DeBuys, New Orleans; Ada E. Schweitzer, Indianapolis; G. A. Warren, Black Rock, Ark.; Edgar A. Hines, Seneca, S. C.; F. X. Mulherin, Augusta, Ga.; Clifford G. Grulee, Chicago; George E. Baxter, Chicago, and Henry Dietrich, Los Angeles.

Drs. F. L. Adair and C. A. Stewart, Minneapolis, presented a paper on "A Study of Milk Ingestion in Relation to Changes in the Body Weight of New-Born Infants." Discussed by Drs. M. L. Turner, Des Moines, Iowa; Isaac A. Abt., Chicago, and C. A. Stewart, Minneapolis.

Drs. Louis W. Sauer, L. D. Minsk and W. G. Alexander, Evanston, Ill., presented a paper on "Gastric Findings in Children with Anorexia." Discussed by Drs. W. McKim Marriott, St. Louis; Leon T. LeWald, New York; John A. Foote, Washington, D. C.; Park, J. White, St. Louis; Alfred L. Kastner, Milwaukee, and Louis W. Sauer, Evanston, Ill.

Dr. Harry Lowenburg, Philadelphia, read a paper on "A Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding: Report of Cases." Discussed by Drs. Isaac A. Abt, Chicago; John A. Foote, Washington, D. C., and Harry Lowenburg, Philadelphia.

Drs. L. R. DeBuys and Maud Loeber, New Orleans, and Thomas H. Haines, Columbus, Ohio, presented a paper on "A Study in an Asylum on the Physical and Mental Status of Its Inmates." Discussed by Drs. O. W. Rowe, Duluth, Minn.; John A. Foote, Washington, D. C.; John W. Hill, Knoxville, Tenn., and L. R. DeBuys, New Orleans.

Friday, May 26—Morning

The meeting was called to order at 9:10 by the chairman.

The following officers were elected: chairman, Dr. Borden S. Veeder, St. Louis; vice chairman, Dr. John A. Foote, Washington, D. C.; secretary, Dr. Edgar J. Huenekens, Minneapolis; delegate, Dr. Isaac A. Abt, Chicago; alternate, Dr. William A. Mulherin, Augusta, Ga.

Dr. L. R. DeBuys, New Orleans, submitted the report of the Committee on Promotion of Section Activities:

To the Section on Diseases of Children of the American Medical Association:

Your committee appointed at the last meeting of the Section on Diseases of Children of the American Medical Association held in Boston, June 6-10, 1921, for the purpose of acting on certain suggestions made by Dr. Frank C. Neff in his chairman's address, begs to make the following report:

The committee met in Cleveland, Nov. 8, 1921. The committee decided to ascertain what the attitude of the American Medical Association would be toward the contemplated organization within the Section on Diseases of Children of the American Medical Association and made the following recommendations:

ORGANIZATION

(*a*) The committee believes that there should be within the section certain members specified as supporting members, and that any Fellow of the American Medical Association who shall designate his willingness to become a supporting member may do so.

(*b*) That the contribution of the supporting members shall be voluntary, and shall be not less than five dollars ($5) per annum.

(*c*) That the supporting members shall receive the transactions of the section without extra cost.

(*d*) That a list of the Fellows of the Association who have registered at the annual session and those who have registered at the five preceding annual sessions shall appear in the transactions of the section, and the supporting members of the section shall have opposite their names an asterisk. Subscribers to the transactions shall have opposite their names a double asterisk.

FINANCES

That a fund shall be created:

(*a*) To cover the cost of the transactions to be sent each member.

(*b*) For the development of the work of the section:

1. By defraying additional expenses of the secretary's office.
2. By stimulating scientific exhibits within the scientific assembly.
3. By defraying expenses of invited guests; and
4. To form a grant to stimulate scientific investigation in pediatrics.

(*c*) The fund contributed by the supporting members shall be known as the "Abraham Jacobi Fund," in honor of the memory of the late Abraham Jacobi, in recognition of his distinguished service to American pediatrics.

(*d*) Control of the fund shall be placed in the hands of a committee of five, one member to be appointed for a term of five years by the executive committee at each annual meeting. The first committee shall be appointed by the executive committee as follows: one member for a period of five years; one member for a period of four years; one member for a period of three years; one member for a period of two years, and one member for a period of one year. No member of the committee shall immediately succeed himself.

(*e*) There shall be an annual report of this committee which shall be included in the regular order of business of the section. The financial statement of the "Fund Committee" shall be audited annually by the executive committee of the section before the report is presented. The custodian of the finances of this fund shall be required to furnish a bond in the amount deemed sufficient by the "Fund Committee."

Respectfully submitted.

Borden S. Veeder.
J. P. Sedgwick.
L. R. DeBuys, Chairman.

Dr. William Weston, Columbia, S. C., moved that the report be adopted. Motion seconded by Dr. W. A. Mulherin, Augusta, Ga. Carried unanimously.

Dr. H. F. Helmholz, Rochester, Minn., submitted a resolution that the section declare its approval of the principles encouraging public education in the hygiene of maternity and infancy embodied in the Sheppard-Towner Act.

(Not transmitted to the House of Delegates.)

Dr. H. F. Helmholz, Rochester, Minn., moved the adoption of this resolution. Seconded; carried unanimously.

Dr. John A. Foote, Washington, moved an expression of thanks to the Fellows residing in St. Louis for their many courtesies and of appreciation of their attendance and deliberations at the section meeting.

Dr. L. R. DeBuys, New Orleans, moved amendment to the motion, suggesting that it be made by a rising vote.

Amended motion seconded; carried (all members present standing).

Drs. W. A. Mulherin and F. X. Mulherin, Augusta, Ga., presented a paper on "A Few Observations on Malaria in Infancy." Discussed by Drs. William Weston, Columbia, S. C.; James D. Love, Jacksonville, Fla.; John Zahorsky, St.

Louis; Franklin P. Gengenbach, Denver; Arthur G. Jacobs, Memphis, Tenn.; Robert A. Strong, Pass Christian, Miss.; M. L. Turner, Des Moines, and William A. Mulherin, Augusta, Ga.

Dr. C. Ulysses Moore, Portland, Ore., read a paper on "Experimental Studies of the A Vitamin: Clinical and Anatomic Effects in Puppies and Rats." No Discussion.

Dr. A. Spencer Kaufman, Philadelphia, read a paper on "Consideration of Acute Aural Disease in Children." Discussed by Drs. Walter E. Simmonds, Chicago; John W. Hill, Knoxville, Tenn.; Henry Dietrich, Los Angeles; Clifford D. Sweet, Oakland, Calif.; W. McKim Marriott, St. Louis; S. Herman Lippitt, Milwaukee, and A. Spencer Kaufman, Philadelphia.

Dr. H. F. Helmholz, Rochester, Minn., read a paper on "Drug Therapy in Pyelitis."

Dr. Herman L. Kretschmer, Chicago, read a paper on "Urologic Problems in Pedriatrics."

These two papers were discussed by Drs. Clifford G. Grulee, Chicago; Charles Schott, Chicago; W. McKim Marriott, St. Louis; F. C. Rodda, Minneapolis; Louis C. Schroeder, New York; Frank C. Neff, Kansas City, Mo.; James A. Gardner, Buffalo; Harry Lowenburg, Philadelphia; William D. Davis, Denver; H. F. Helmholz, Rochester, Minn., and Herman L. Kretschmer, Chicago.

The chairman introduced the newly elected chairman, Dr. Borden S. Veeder, St. Louis.

Dr. Veeder said: "I thank you very much for the honor conferred on me in being elected chairman of this section. I will only say that next year we hope to build up the section in the way that it has been built up in the past few years and that we will all have a rousing meeting and you will all meet together next year in San Francisco." (Applause.)

Dr. Louis C. Schroeder, New York, read a paper on "Observations on the Etiology and Pathology of Chorea in Childhood." Discussed by Drs. Henry F. Helmholz, Rochester, Minn.; V. S. Cheney, Chicago; Walter E. Simmonds, Chicago, and Louis C. Schroeder, New York.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Wednesday, May 24—Morning

The section was called to order at 9:15 by the chairman, Dr. Carl Voegtlin, Washington, D. C.

The chairman appointed Dr. Cary Eggleston, New York City, to serve on the Executive Committee, Dr. George W. McCoy, Washington, D. C., being absent.

Dr. Voegtlin read the chairman's address, entitled "The Limitations of Intravenous Medication."

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Alvan L. Barach, New York City, read a paper on "The Therapeutic Use of Oxygen." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; C. W. Greene, Columbia, Mo.; R. H. Shippey, Wichita, Kan.; A. J. Carlson, Chicago; H. E. B. Pardee, New York City; M. A. Mortensen, Battle Creek, Mich., and Alvan L. Barach, New York City.

Dr. Nellis B. Foster, New York City read a paper on "The Treatment of Hypertension." Discussed by Drs. Leonard G. Rowntree, Rochester, Minn.; Lester J. Palmer, Seattle; W. W. Tomkins, Charleston, W. Va.; George E. McKean, Detroit, and Nellis B. Foster, New York City.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. F. M. Pottenger, Monrovia, Calif., read a paper on "The Present Status of the Treatment of Tuberculosis." Discussed by Drs. Louis C. Boisliniere, St. Louis; William C. Voorsanger, San Francisco; J. J. Singer, St. Louis; Edward F. Wells, Chicago, and F. M. Pottenger, Monrovia, Calif.

Dr. Russell M. Wilder, Rochester, Minn., read a paper on "Optimal Food Mixtures for Diabetic Patients." Discussed by Drs. L. H. Newburgh, Ann Arbor, Mich.; Nelson W. Janney, Los Angeles; W. H. Olmsted, St. Louis, and Russell M. Wilder, Rochester, Minn.

Thursday, May 25—Morning

The following officers were elected: chairman, Dr. Cary Eggleston, New York City; vice chairman, Dr. Paul J. Hanzlik, San Francisco; secretary, Dr. Paul D. White, Boston; delegate, Dr. Leonard G. Rowntree, Rochester, Minn.; alternate, Dr. Carl Voegtlin; executive committee, Drs. Leonard G. Rowntree, Rochester, Minn.; Carl Voegtlin, Washington, D. C., and Cary Eggleston, New York.

Dr. John W. Churchman, New York, read a paper on "The Therapeutic Use of Drugs." Discussed by Drs. Carl Voegtlin, Washington, D. C.; Ralph H. Major, Kansas City, Mo., and John W. Churchman, New York.

Dr. E. Lawrence Oliver, Boston, read a paper on "Quartz Light Therapy in Skin Diseases." Discussed by Drs. Carl Voegtlin, Washington, D. C.; Howard Fox, New York; Samuel Ayres, Jr., Los Angeles; G. P. Lingenfelter, Denver; Jeffrey C. Michael, Houston, Texas; W. W. Tomkins, Charleston, W. Va., and E. Lawrence Oliver, Boston.

Dr. E. D. Osborne, Rochester, Minn., read a paper on "Contributions to the Pharmacology and Therapeutics of Iodids." Discussed by Drs. G. P. Grabfield, Boston, and E. D. Osborne, Rochester, Minn.

Dr. Paul D. White, Boston, read a paper on "The Present Status of the Use of Drugs in Heart Disease, with Especial Reference to Digitalis and Quinidin." Discussed by Drs. John Wyckoff, New York; Fred Smith, Chicago; Walter J. Wilson, Detroit; Louis F. Bishop, New York; Arthur E. Strauss, St. Louis; Lee Rice, Galveston, Texas; George B. Crow, Burlington, Iowa, and Paul D. White, Boston.

Dr. Samuel Stern, New York, read a paper on "The Present Status of Radiotherapy, with Particular Reference to Intensive Roentgen-Ray Treatment." No discussion.

Dr. Harold Thomas Hyman read a paper by Drs. Charles C. Lieb, Harold Thomas Hyman and Leo Kessel, New York, on "A Study of Graves' Syndrome and the Involuntary Nervous System." Discussed by Drs. A. J. Carlson, Chicago, and Harold Thomas Hyman, New York.

Dr. H. F. Helmholz, Rochester, Minn., reported for the committee appointed to investigate dosage of drugs in treatment of children. A motion that this committee be continued was seconded and unanimously carried.

Friday, May 26—Afternoon

A joint meeting was held with the Sections on Practice of Medicine, and on Pathology and Physiology. For a report of the proceedings, see the minutes of the Section on Practice of Medicine.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2:15 by the chairman, Dr. John A. Kolmer, Philadelphia.

Drs. Frank M. Huntoon, Swarthmore, Pa., and C. C. Bass, New Orleans, were appointed to serve on the Executive Committee.

Dr. John A. Kolmer, Philadelphia, read the chairman's address, entitled, "State Licensure Applied to Technicians."

Dr. Josiah J. Moore, Chicago, read a paper on "Standardization of Clinical Laboratories."

These two papers were discussed by Drs. Fred I. Lackenbach, San Francisco; Philip Hillkowitz, Denver; C. C. Bass, New Orleans; Frank M. Huntoon, Swarthmore, Pa.; Ward Burdick, Denver; Herman Spitz, Nashville, Tenn.; A. J. Carlson, Chicago; J. H. Black, Dallas, Texas, and Josiah J. Moore, Chicago.

Dr. J. H. Black, Dallas, Texas, made a motion that a committee of three be appointed by the chairman to go over Dr. Moore's paper as to the feasibility of the plan for the standardization of laboratories and to bring in a report. Seconded and carried.

Drs. C. C. Bass, New Orleans; Kenneth Lynch, Dallas, Texas, and Philip Hillkowitz, Denver, were appointed and instructed to report Thursday afternoon.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Francis Lowell Burnett, Boston, read a paper on "Intestinal Rate and the Form of the Feces." No discussion.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. William Carpenter MacCarty, Rochester, Minn., read a paper on "Does Cancer Arise in Gastric Ulcer?" Discussed by Drs. Herbert R. Brown, Rochester, N. Y.; John J. Gilbride, Philadelphia; J. Shelton Horsley, Richmond, Va.; Philip Hillkowitz, Denver; William H. Stewart, New York; D. J. Davis, Chicago; Eugene L. Opie, St. Louis, and William Carpenter MacCarty, Rochester, Minn.

Dr. Lester Dragstedt, Chicago, read a paper on "Acute Dilatation of Stomach." Discussed by Drs. James J. Moorhead, Terre Haute, Ind.; John J. Gilbride, Philadelphia; A. J. Carlson, Chicago, and Lester Dragstedt, Chicago.

Dr. Harry J. Corper, Denver, read a paper on "Pulmonary Aspiration of Particulate Matter Normally and During Anesthesia." No discussion.

Drs. G. A. Friedman and Julius Gottesman, New York, presented a paper on "A Study on the Relation of the Thyroid to the Pancreatic Diabetes in Dogs." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; Charles W. Greene, Columbia, Mo.; Arno B. Luckhardt, Chicago; A. J. Carlson, Chicago, and G. A. Friedman, New York.

Thursday, May 25—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. Arno B. Luckhardt, Chicago; vice chairman, Dr. Kenneth M. Lynch, Dallas, Texas; secretary, Josiah J. Moore, Chicago; delegate, Dr. D. J. Davis, Chicago; alternate, Dr. John A. Kolmer, Philadelphia.

Dr. Frank M. Huntoon, Swarthmore, Pa., read a paper on "Pneumococcus Antibody Solutions Specific Against Types I, II and III." Discussed by Drs. John A. Murphy, Swarthmore, Pa., and John A. Kolmer, Philadelphia.

The Committee on Standardization of Laboratories, Dr. C. C. Bass, chairman, made the following report:

> The committee finds itself unable to make recommendations as to the adoption of the proposition at the present time on account of the importance of the subject, which it is believed requires extended study.
>
> The committee does recommend that a committee be appointed to consider the matter and make recommendations at the next session of the Association.

It was moved and carried that this report be received and put into effect.

The chairman appointed the same committee to serve during the coming year and to submit a further report at the coming meeting.

Dr. Lloyd J. Thompson, Boston, introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology.

Dr. Kenneth M. Lynch, Dallas, Texas, moved that this resolution be adopted by the section and that Dr. John A. Kolmer be appointed as a committee of one to cooperate with like committees representing the Sections on Urology, Dermatology, Syphilology, Practice of Medicine, and Nervous and Mental Diseases. Unanimously carried.

Dr. L. H. Newburgh, Ann Arbor, Mich., read a paper on "The Production of Arteriosclerosis in Rabbits Caused by Feeding Diets Rich in Animal Proteins." Discussed by Drs. M. W. Lyon, Jr., South Bend, Ind., and L. H. Newburgh, Ann Arbor, Mich.

Dr. Edward Weiss, Philadelphia, read a paper on "The Congenital Factor in Chronic Renal Disease." No discussion.

Dr. Edwin R. Le Count, Chicago, read a paper on "Discussion of Secondary Hemorrhages in the Brain." Discussed by Drs. M. W. Lyon, Jr., South Bend, Ind.; William House, Portland, Ore.; John A. Kolmer, Philadelphia, and Edwin R. Le Count, Chicago.

Dr. M. A. Mortensen, Battle Creek, Mich., read a paper on "Diagnosis and Pathologic Physiology of Beginning Myocardial Inefficiency." No discussion.

Dr. Kenneth M. Lynch, Dallas, Texas, read a paper on "Cultivation of Trichomonas and the Question of Specific Differentiation." Discussed by Drs. John A. Kolmer, Philadelphia, and Kenneth M. Lynch, Dallas, Texas.

Friday, May 26—Afternoon

A joint meeting was held with the Section on Practice of Medicine and on Pharmacology and Therapeutics. For a report of the proceedings, see the minutes of the Section on Practice of Medicine.

SECTION ON STOMATOLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Herbert A. Potts, Chicago.

Dr. Herbert A. Potts, Chicago, read the chairman's address, entitled "Infections and Inflammation of the Investing Tissues of the Teeth-Gingivae, Peridental Membrane, Cementum and Alveolar Process." Discussed by Drs. M. N. Federspial, St. Louis; Byron C. Darling, New York, and F. B. Moorehead, Chicago.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Frederick B. Noyes, Chicago, read a paper on "Orthodontia; Six-Year-Old Molar; Early Recognition of Maleruption; Sequela." Discussed by Drs. B. E. Lischer, St. Louis, and Stuart D. Ruggles, Portsmouth, Ohio.

Dr. Percy R. Howe, Boston, read a paper on "Studies on Decalcification of the Teeth and Bones and Regeneration of Bone Through the Diet."

Dr. Clarence J. Grieves, Baltimore, read a paper on "The Effects of Defective Diets on Teeth."

Dr. Paul G. Shipley, Baltimore, read a paper on "Structure of Bone in Relation to Diet."

These three papers were discussed by Drs. Eugene S. Talbot, Chicago; Percy R. Howe, Boston; Dr. Clarence J. Grieves, Baltimore; Frederick B. Noyes, Chicago, and Paul G. Shipley, Baltimore.

Thursday, May 25—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Herbert A. Potts, Chicago.

Dr. Arthur D. Black, Chicago, read a paper on "What Teeth Should Be Extracted?" Discussed by Drs. R. H. Ivy, Philadelphia; J. H. Kennerley, St. Louis; William L. Shearer, Omaha; S. D. Ruggles, Portsmouth, Ohio; Fulton Risdon, Toronto, Canada; T. L. Gilmer, Chicago; Theodor Blum, New York; T. W. Brophy, Chicago; Virgil Loeb, St. Louis, and Carl W. Waldron, Minneapolis.

Dr. R. H. Ivy, Philadelphia, read a paper on "Observation of Fractures of the Mandible."

Dr. Fulton Risdon, Toronto, Canada, read a paper on "The Treatment of Nonunion of Fractures of the Mandible by Free Bone Grafts."

These two papers were discussed by Drs. Carl W. Waldron, Minneapolis; William Leaman Bainbridge, New York, and F. B. Moorehead, Chicago.

Dr. T. L. Gilmer, Chicago, moved that this discussion be closed and be taken up tomorrow. Seconded and carried.

Dr. D. J. Davis, Chicago, read a paper on "Studies on the Habitat and Pathogenicity of B. Fusiformis." No discussion.

Dr. Hugh W. MacMillan, Cincinnati, read a paper on "Anatomic and Prosthetic Factors Involved in the Development and Correction of Extensive Cysts of the Maxilla." Discussed by Drs. A. D. Black, Chicago; R. H. Ivy, Philadelphia; Theodor Blum, New York, and Herbert A. Potts, Chicago.

Friday, May 25—Afternoon

The meeting was called to order by the chairman at 2 o'clock.

The following officers were elected: chairman, Robert H. Ivy, Philadelphia; vice chairman, Stuart D. Ruggles, Portsmouth, Ohio; delegate, E. S. Talbot, Chicago.

The papers of Drs. Ivy and Risdon, read and discussed, May 25, were further discussed by Drs. Frank J. Tainter, St. Louis, and Theodor Blum, New York.

Dr. William Allen Pusey, Chicago, read a paper on "Syphilis of the Mouth." Discussed by Dr. William Seaman Bainbridge, New York.

Dr. John W. Nuzum, Chicago, read a paper on "The Experimental Production of Multiple Miniature Metastasizing Carcinomas." No discussion.

Dr. Joseph Rilus Eastman, Indianapolis, read a paper on "Prophylaxis of Malignant Growths of the Mouth, Face and Jaws." No discussion.

Dr. William Seaman Bainbridge, New York, read a paper on "Cancer of the Tongue: Some Pitfalls in Diagnosis and Treatment."

Dr. Lewis L. McArthur, Chicago, read a paper on "Atypical Operation for Tumors of Mouth and Jaw."

Dr. F. J. Novak, Chicago, read a paper on "Electrocoagulation of Malignant Tumors of the Mouth and Oropharynx, and the Effect of This Procedure on Large Adjacent Blood Vessels and Nerves."

These three papers were discussed by Drs. Albert J. Ochsner, Chicago; Gordon B. New, Rochester, Minn.; A. C. Scott, Temple, Texas; J. S. Horsley, Richmond, Va.; Theodor Blum, New York, and George A. Wyeth, New York.

SECTION ON NERVOUS AND MENTAL DISEASES

Wednesday, May 24—Morning

The meeting was called to order at 9:15 by the chairman, Dr. Peter Bassoe, Chicago.

The chairman appointed Dr. W. A. Jones, Minneapolis, and Dr. Frank R. Fry, St. Louis, to serve on the Executive Committee.

Dr. Peter Bassoe, Chicago, read the chairman's address, entitled, "Problems Confronting the Section on Nervous and Mental Diseases." No discussion.

Dr. Frankwood E. Williams, New York, read a paper on "Work and Plans of the National Committee for Mental Hygiene." Discussed by Dr. M. A. Bliss, St. Louis.

Dr. John W. Visher, Waukesha, Wis., read a paper on "A Study in Constitutional Psychopathic Inferiority." Discussed by Drs. Lawrence Kolb, Waukesha, Wis.; Karl A. Menninger, Topeka, Kan.; Groves B. Smith, Godfrey, Ill.; W. A. Jones, Minneapolis; William Edler, St. Louis; J. Moorhead Murdock, Polk, Pa.; Frank A. Ely, Des Moines, Iowa; Hugh T. Patrick, Chicago; Frankwood E. Williams, New York, and John W. Visher, Waukesha, Wis.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and after discussion, was adopted.

Drs. Hugh T. Patrick, Chicago, and David M. Levy, Chicago, presented a paper on "The Diagnosis of Epilepsy." Discussed by Drs. A. L. Skoog, Kansas City, Mo.; F. E. Coulter, Omaha; Walter Timme, New York; Tom A. Williams, Washington, D. C.; Charles A. L. Reed, Cincinnati; M. L. Perry, Topeka, Kan., and Hugh T. Patrick, Chicago.

Dr. Julius Grinker, Chicago, read a paper on "Further Experiences with Luminal in Epilepsy." Discussed by Drs. David S. Booth, St. Louis; F. E. Coulter, Omaha; A. L. Skoog, Kansas City, Mo.; E. T. Ponder, Little Rock, Ark.; Charles R. Woodson, St. Joseph, Mo., and Julius Grinker, Chicago.

Dr. A. L. Skoog, Kansas City, Mo., read a paper on "Methyl Alcohol Intoxication." No discussion.

Thursday, May 25—Morning

The meeting was called to order at 9 o'clock by the chairman.

Dr. Charles H. Frazier, Philadelphia, read a paper on "Review of a Series of Operable Tumors of the Spinal Cord from the Standpoint of Diagnosis and Technic." Discussed by Drs. M. A. Bliss, St. Louis; Julius Grinker, Chicago; F. E. Coulter, Omaha; A. W. Adson, Rochester, Minn.; Hugh T. Patrick, Chicago; Leo M. Crafts, Minneapolis, and Charles H. Frazier, Philadelphia.

Dr. Walter E. Dandy, Baltimore, read a paper on "The Localization of Brain Tumors." Discussed by Drs. Ernest Sachs, St. Louis; A. W. Adson, Rochester, Minn.; Frank A. Ely, Des Moines, Iowa; L. L. McArthur, Chicago; A. L. Skoog, Kansas City, Mo.; A. L. Gray, Richmond, Va., and Walter E. Dandy, Baltimore.

Dr. I. Leon Meyers, Los Angeles, read a paper on "Magnus and de Kleijn Phenomena in Brain Lesions of Man." Discussed by Drs. Mary Freeman, Perrine, Fla., and I. Leon Meyers, Los Angeles.

Dr. C. L. Woolsey, Boston, read a paper on "Experimental Vestibular Tremors." Discussed by Drs. I. Leon Meyers, Los Angeles; A. L. Skoog, Kansas City, Mo., and C. L. Woolsey, Boston.

Dr. Leo M. Crafts, Minneapolis, read a paper on "Mixed-Cell Sarcoma of the Brain, with Recovery Following Third Operative Interference."

Dr. Tom B. Throckmorton, Des Moines, Iowa, read a paper on "Glioma of the Cerebral Hemispheres. A Comparative Study of Two Cases."

These two papers were discussed by Dr. George A. Moleen, Denver.

Dr. Henry W. Woltman, Rochester, Minn., read a paper on "Malignant Tumors of the Nasopharynx with Extension to the Nervous System." Discussed by Drs. Gordon B. New, Rochester, Minn., and M. A. Bliss, St. Louis.

Drs. H. C. Solomon, Boston, and Lloyd J. Thompson, Boston, presented a paper on "Some Experimental Data Concerning the Circulation of the Cerebrospinal Fluid." Discussed by Drs. W. A. Jones, Minneapolis; Lewis J. Pollock, Chicago; A. L. Skoog, Kansas City, Mo.; Karl A. Menninger, Topeka, Kan.; Charles R. Ball, St. Paul; Mary Freeman, Perrine, Fla., and Lloyd J. Thompson, Boston.

Friday, May 26—Morning

The meeting was called to order at 9:15 by the chairman.

The following officers were elected: chairman, Dr. Walter Timme, New York; vice chairman, Dr. M. A. Bliss, St. Louis; secretary, Dr. James B. Ayer, Boston; delegate, Dr. Charles R. Ball, St. Paul; alternate, Dr. Tom B. Throckmorton, Des Moines, Iowa.

Dr. Lewis J. Pollock, Chicago, read a paper on "Accessory Muscle Movements in Deltoid Paralysis." No discussion.

Dr. E. C. Rosenow, Rochester, Minn., read a paper on "Results of Experimental Study in the Etiology of Epidemic Encephalitis." Discussed by Drs. Lewis J. Pollock, Chicago, and E. C. Rosenow, Rochester, Minn.

Dr. William House, Portland, Ore., read a paper on "The Sequelae of Epidemic Encephalitis." Discussed by Drs. M. A. Bliss, St. Louis; F. E. Coulter, Omaha; Walter Timme, New York; George A. Moleen, Denver; W. A. Jones, Minneapolis; Leo M. Crafts, Minneapolis; Julius Grinker, Chicago; Charles R. Ball, St. Paul; J. C. Michael, Minneapolis; Frank A. Ely, Des Moines, Iowa, and William House, Portland, Ore.

Dr. Loyd Thompson, Hot Springs, Ark., introduced the resolution on the standardization of the Wassermann test, referred to in the minutes of the Section on Urology. After discussion, the motion was put. Seconded and carried.

The chairman appointed Dr. Harry C. Solomon, Boston, to act as a member of the committee.

Dr. Tom B. Throckmorton, Des Moines, Iowa, moved that a rising vote of thanks be extended as an expression of appreciation for the courtesy so kindly extended by the local neurologic society. Seconded and carried.

Dr. E. M. Hammes, St. Paul, read a paper on "Psychoses Associated with Sydenham's Chorea." Discussed by Drs. Frank R. Fry, St. Louis; Tom A. Williams, Washington, D. C.; Lawson G. Lowrey, Iowa City, and Groves B. Smith, Godfrey, Ill.

Dr. Lawson G. Lowrey, Iowa City, read a paper on "Pellagra: A Neuropathologic Study." Discussed by Dr. Lewis J. Pollock, Chicago.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Wednesday, May 24—Morning

The meeting was called to order at 9:15 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

Dr. Ernest Dwight Chipman, San Francisco, read the chairman's address.

The following papers were read as a symposium on "Syphilis":

Dr. James R. Driver, Cleveland: "A Statistical Report on the Examination of Four Hundred and Sixty Cases with Genital Lesions."

Drs. H. L. Keim and Udo J. Wile, Ann Arbor, Mich.: "The Kahn Precipitin Test in the Diagnosis of Syphilis."

Dr. Albert Keidel, Baltimore: "Studies in Asymptomatic Neurosyphilis, IV, The Apparent Rôle of Immunity in the Genesis of Neurosyphilis."

Drs. E. C. White, J. H. Hill, J. E. Moore and H. H. Young, Baltimore: "A New Mercurial for the Intravenous Treatment of Syphilis: First report of Chemical, Animal and Clinical Experiments and Results."

These four papers were discussed by Drs. Udo J. Wile, Ann Arbor, Mich.; James Herbert Mitchell, Chicago; Richard L. Sutton, Kansas City, Mo.; John E. Lane, New Haven, Conn.; Harry G. Irvine, Minneapolis; William Allen Pusey, Chicago; Joseph Grindon, St. Louis; Victor G. Vecki, San Francisco; F. W. Cregor, Indianapolis; James R. Driver, Cleveland; H. L. Keim, Ann Arbor, Mich.; Albert Keidel, Baltimore, and J. E. Moore, Baltimore.

The chairman appointed Dr. H. G. Irvine, Minneapolis, and Dr. William T. Corbett, Cleveland, to serve on the Executive Committee in the places of Dr. Walter J. Highman, New York, and Dr. Oliver S. Ormsby, Chicago, who were absent.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. Herman Goodman, New York, read a paper on "Ulcerating Granuloma (Granuloma Inguinale). Discussed by Drs. Joseph Grindon, St. Louis; A. J. Markley, Denver; Jeffrey C. Michael, Houston, Texas; William Litterer, Nashville, Tenn.; Jesse B. Shelmire, Dallas, Texas; Harold N. Cole, Cleveland; Earl D. Crutchfield, Galveston, Texas, and Herman Goodman, New York.

The President, Dr. George E. de Schweinitz, and the retiring President, Dr. Hubert Work, addressed the section.

Dr. Frank W. Cregor, Indianapolis, read a paper on "Sporotrichosis." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; J. M. King, Nashville, Tenn.; Everett S. Lain, Oklahoma City; John H. King, Nashville, Tenn., and Frank W. Cregor, Indianapolis.

Dr. Erwin P. Zeisler, Chicago, read a paper on "Pityriasis Rubra Pilaris—Familial Type." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Harold N. Cole, Cleveland; David Lieberthal, Chicago; William Allen Pusey, Chicago, and Erwin P. Zeisler, Chicago.

Thursday, May 25—Morning

The meeting was called to order at 9:10 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

Dr. Moses Scholtz, Los Angeles, read a paper on "Lupus Erythematosus Acutus Disseminatus Hemorrhagicus." Discussed by Drs. W. H. Goeckerman, Rochester, Minn.; Everett S. Lain, Oklahoma City; William T. Corlett, Cleveland; Marcus Haase, Memphis, Tenn.; William Frick, Kansas City, Mo.; Richard L. Sutton, Kansas City, Mo., and Moses Scholtz, Los Angeles.

Drs. H. H. Hazen and F. J. Eichenlaub, Washington, D. C., presented a paper on "Leukoplakia." Discussed by Drs. F. E. Senear, Chicago, William H. Guy, Pittsburgh; J. M. King, Nashville, Tenn.; William T. Corlett, Cleveland; I. L. McGlasson, San Antonio, Texas; Erwin P. Zeisler, Chicago; W. H. Goeckerman, Rochester, Minn., and F. J. Eichenlaub, Washington, D. C.

Drs. Marcus Haase, Clement H. Marshall and E. R. Hall, Memphis, Tenn., presented a paper on "Local Blastomycosis." Discussed by Drs. F. E. Senear, Chicago; Louis E. Schmidt, Chicago; Ernest D. Chipman, San Francisco; J. M. King, Nashville, Tenn.; Earl D. Crutchfield, Galveston, Texas; Harold N. Cole, Cleveland, and Clement R. Marshall, Memphis, Tenn.

Drs. Howard I. Morrow, Ernest L. Walker and Hiram E. Miller, San Francisco, presented a paper on "Experience with Chaulmoogra Oil Derivatives in the Treatment of Leprosy at San Francisco." Discussed by Drs. William T. Corlett, Cleveland; R. M. Wilson, Kwangju, Korea; I. L. McGlasson, San Antonio, Texas; Ernest D. Chipman San Francisco; Floyd Stewart, St. Louis; Edward A. Oliver, Chicago, and Hiram E. Miller, San Francisco.

Mr. C. N. Moore, Schenectady, N. Y., read a paper on "The Physical Principles Underlying the Development of High Voltage Roentgen-Ray Apparatus." Discussed by Drs. William Allen Pusey, Chicago; Harold N. Cole, Cleveland; F. J. Eichenlaub, Washington, D. C., and William H. Guy, Pittsburgh, and Mr. C. N. Moore, Schenectady, N. Y.

Dr. C. Guy Lane, Boston, read a paper on "Industrial Dermatoses at the Massachusetts General Hospital." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Joseph Grindon, St. Louis; Jeffrey Michael, Houston, Texas; Moses Scholtz, Los Angeles; T. J. Burke, Pittsburgh; William Allen Pusey, Chicago; C. H. Ball, Tulsa, Okla.; L. S. Ayres, Los Angeles; Lester Hollander, Pittsburgh; A. J. Markley, Denver; David Lieberthal, Chicago, and C. Guy Lane, Boston.

Dr. W. H. Goeckerman, Rochester, Minn., read a paper on "A Peculiar Discoloration of the Skin Probably Resulting from Mercurial Compounds (Calomel) in Proprietary Face Creams." Discussed by Drs. F. J. Eichenlaub, Washington, D. C.; Richard L. Sutton Kansas City, Mo.; J. M. King, Nashville, Tenn.; Ernest D. Chipman, San Francisco; Edwin P. Zeisler, Chicago, and W. H. Goeckerman, Rochester, Minn.

Friday, May 26—Morning

The meeting was called to order at 9:10 by the chairman, Dr. Ernest Dwight Chipman, San Francisco.

The following officers were elected: chairman, Dr. Marcus Haase, Memphis, Tenn.; vice chairman, Dr. Frank W. Cregor, Indianapolis; secretary, Dr. Harold N. Cole, Cleveland; delegate, Dr. Walter J. Highman, New York; alternate, Dr. Everett S. Lain, Oklahoma City.

Dr. William Allen Pusey moved that the chairman appoint a committee of one to work in conjunction with a committee from the Sections on the Practice of Medicine, Urology, Nervous and Mental Diseases, Pathology and Physiology and Pediatrics on a standardization of the Wassermann test.

This motion was seconded by several members and unanimously carried.

The chairman appointed Dr. Martin F. Engman, St. Louis, to represent the Section on Dermatology and Syphilology on this committee.

The following papers were read as a symposium on "Malignancy":

Dr. Howard James Parkhurst, Toledo, Ohio: "The Tissue Reaction in Malignant Epitheliomas of the Skin: Its Value in Diagnosis and in Prognosis."

Drs. Walter J. Highman and Ray H. Rulison, New York: "Expectancy in Roentgen Treatment of Skin Lesions from the Pathologic Standpoint."

Dr. Laurence Taussig, San Francisco: "Carcinoma of the Tongue and Its Treatment with Radium."

Dr. Joseph C. Bloodgood, Baltimore: "Surgical Treatment of Cancer of the Lip."

Dr. G. E. Pfahler, Philadelphia: "Treatment of Cancer of the Lip by Electrocoagulation."

Dr. Everett S. Lain, Oklahoma City: "The Treatment of Cancer of the Lip by Radiotherapy."

These six papers were discussed by Drs. Gordon B. New, Rochester, Minn.; Joseph C. Bloodgood, Baltimore; F. J. Eichenlaub, Washington, D. C.; William H. Guy, Pittsburgh; Richard L. Sutton, Kansas City, Mo.; G. A. Wyeth, New York; C. H. Ball, Tulsa, Okla.; T. C. Kennedy, Indianapolis; Frank W. Cregor, Indianapolis; John Howard King, Nashville, Tenn.; Moses Scholtz, Los Angeles; I. L. McGlasson, San Antonio, Texas; Davis W. Goldstein, Fort Smith, Ark; Earl D. Crutchfield, Galveston, Texas; Ben R. Kirkendall, Columbus, Ohio; H. J. Parkhurst, Toledo, Ohio; R. H. Rulison, New York; Laurence Taussig, San Francisco; George E. Pfahler, Philadelphia, and Everett S. Lain, Oklahoma City.

Dr. Marcus Haase, Memphis, moved a rising vote of thanks to the officers of the section for the considerate and courteous treatment accorded the members, and to the St. Louis profession for their excellent clinic and generous hospitality. This motion was seconded and unanimously carried.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Wednesday, May 24—Morning

The meeting was called to order at 9:20 by the chairman, Dr. S. W. Welch, Montgomery, Ala.

Dr. J. D. McLean, Philadelphia, presented the resolution referred to in the minutes of the Section on Practice of Medicine. The resolution was referred to the Executive Committee.

Dr. S. W. Welch, Montgomery, Ala., read the chairman's address, entitled "Training in Sociology and Public Health an Essential in Medical Education."

Dr. A. J. Warren, Topeka, Kan., read a paper on "The County as a Health Unit." Discussed by Drs. W. S. Rankin, Raleigh, N. C.; J. A. Hayne, Columbia, S. C., and W. L. Holt, Knoxville, Tenn.

Dr. John D. McLean, Philadelphia, read a paper on "Obligations of Preventive Medicine." Discussed by Drs. Allan J. McLaughlin, Washington, D. C.; Eugene L. Fisk, New York; H. B. Wood, Dodge City, Kan., and John D. McLean, Philadelphia.

Dr. W. A. Dearman, Long Beach, Miss., read a paper on "The Attitude of the General Practitioner Toward Established and Progressive Public Health Policies." Discussed by Drs. Oscar Dowling, New Orleans, and W. A. Dearman, Long Beach, Miss.

Dr. W. S. Rankin, Raleigh, N. C., read a paper on "The Mutual Interest of Profession and Public." Discussed by Drs. W. S. Leathers, University, Miss.; A. S. Hershfield, Chicago; A. T. McCormack, Louisville, Ky.; Rachelle S. Yarros, Chicago; D. B. McEachern, Chicago, and W. S. Rankin, Raleigh, N. C.

Dr. Otto Geier, Cincinnati, read a paper on "Some Reflections on the Recent Education of Health Officers' Conference." Discussed by Dr. M. P. Ravenel, Columbia, Mo.

Dr. Matthias Nicoll, Jr., Albany, N. Y., read a paper on "Politics and the Health Officer." Discussed by Drs. A. T. McCormack, Louisville, Ky.; Victor C. Vaughan, Washington, D. C.; J. A. Hayne, Columbia, S. C., and Matthias Nicoll, Jr., Albany, N. Y.

Dr. M. P. Ravenel, Columbia, Mo., introduced a resolution urging on Congress enactment of legislation to accept a gift made to the Surgeon-General's Library by the Prudential Insurance Company.

The resolution was referred to the Executive Committee. (Not transmitted to the House of Delegates.)

Dr. C. E. Terry moved that this section request the Council on Health and Public Instruction to endeavor to have printed Dr. Rankin's paper on "The Mutual Interest of Profession and Public," at the earliest possible moment in The Journal, to reprint it promptly, and to see that a copy is sent to every county medical society in this country, and, if possible, to extend the circulation of the paper farther than that. Seconded and carried. Referred to the Executive Committee.

(Not transmitted to the House of Delegates.)

Dr. A. T. McCormack then moved that the Executive Committee be requested to draft a resolution to be presented to the House of Delegates, approving the suggestions made in Dr. Rankin's paper. Seconded and carried.

Thursday, May 25—Morning

The meeting was called to order at 9:20 by the chairman.

The first order of business was a partial report of the Executive Committee.

The Executive Committee recommended the adoption of the resolution introduced by Dr. McLean. Seconded and carried.

It also recommended the adoption of the resolution introduced by Dr. Terry. Seconded and carried.

The Executive Committee reported that it was too late to introduce the resolution of Dr. Ravenel in the House of Delegates, but recommended that the sense of the resolution be approved by the section. On motion, seconded and carried, the recommendation was adopted.

It was moved and seconded that Arthur W. Hedrich, secretary of the American Public Health Association, be nominated Associate Fellow by the section. Carried.

Dr. John Dill Robertson, Chicago, read a paper on "Community Health Fundamentals." Discussed by Drs. Herman N. Bundesen, Chicago; Allen J. Hruby, Chicago; A. F. Campbell, Springfield, Ill.; M. P. Ravenel, Columbia, Mo.; Isaac D. Rawlings, Springfield, Ill.; A. C. Tenney, Chicago; J. D. Dowling, Birmingham, Ala., and John Dill Robertson, Chicago.

Dr. H. S. Cumming, Washington, D. C., read a paper on "Tuberculosis Among the Ex-Service Men, with Special Reference to Its Bearing on Public Health." Discussed by Drs. Henry Boswell, Sanatorium, Miss.; H. A. Pattison, New York; J. J. Singer, St. Louis, and H. S. Cumming, Washington, D. C.

Dr. William A. Evans, Chicago, read a paper on "Seasonal Distribution of Deaths and Some Conclusions Based Thereon." Discussed by Frederick L. Hoffman, Newark, N. J., and Drs. S. J. Crumbine, Topeka, Kan., and William A. Evans, Chicago.

Dr. William H. Park, New York, read a paper on "Immunization Against Diphtheria and the Use of Toxin-Antitoxin." Discussed by Drs. Abraham Zingher, New York; John F. Hogan, Baltimore; William H. Thaler, St. Louis; C. A. Earle, Des Plaines, Ill.; W. S. Rankin, Raleigh, N. C., and Abraham Zingher, New York.

Dr. J. Howard Beard, Urbana, Ill., read a paper on "The Contribution of University Health Services to Public Health." Discussed by Drs. John Sundwall, Ann Arbor, Mich., and J. Howard Beard, Urbana, Ill.

Dr. Frederick R. Green, Chicago, read a paper on "Legal Status of Physicians and Sectarians." Discussed by Drs. W. C. Woodward, Boston; D. B. McEachern, Chicago; B. C. Darling, New York, and Frederick R. Green, Chicago.

Dr. M. M. Carrick, Dallas, Texas, introduced a resolution concerning care of ex-service men. Resolution referred to Executive Committee and transmitted to the House of Delegates.

Friday, May 26—Morning

The meeting was called to order at 9:05 by the chairman.

Dr. C. C. Bass, New Orleans, read a paper on "A Discussion of Malaria Control Operations in the Ultimate Suppression of the Disease." Discussed by Drs. L. D. Fricks, Memphis, Tenn.; M. P. Ravenel, Columbia, Mo.; Isaac D. Rawlings, Springfield, Ill.; S. W. Welch, Montgomery, Ala.; W. C. Woodward, Boston, and C. C. Bass, New Orleans.

Dr. Harry Garfield Irvine, Minneapolis, read a paper on "Some Notes on the Effectiveness of the Venereal Disease Program." Discussed by Drs. Valeria Parker, Washington, D. C.; William F. Whyte, Madison, Wis.; Carl Voeglin, Washington, D. C.; J. P. Bowdoin, Adairsville, Ga.; John F. Hogan, Baltimore, and Harry Garfield Irvine, Minneapolis.

Dr. Taliaferro Clark, Washington, D. C., read a paper on "Nutrition of the Schoolchild." Discussed by Drs. Borden S. Veeder, St. Louis; John Dill Robertson, Chicago; Allen J. Hruby, Chicago; W. L. Holt, Knoxville, Tenn.; Isaac D. Rawlings, Springfield, Ill.; Florence Meredith, Philadelphia; James Stewart, St. Louis, and Taliaferro Clark, Washington, D. C.

Dr. Anna E. Rude, Washington, D. C., read a paper on "The Sheppard-Towner Act in Relation to Public Health." Discussed by Drs. Marry Riggs Noble, Colorado Springs, Colo.; Taliaferro Clark, Washington, D. C.; W. C. Woodward, Boston; Carl Henry Davis, Milwaukee; S. W. Welch, Montgomery, Ala.; D. B. McEachern, Chicago; A. N. Creadick, New Haven, Conn., and Anna E. Rude, Washington, D. C.

Dr. Joseph N. Gehlen, Minneapolis, read a paper on "Detection of Typhoid Carriers, with Report of Four Outbreaks." Discussed by Drs. James J. Durrett, Memphis, Tenn., and Joseph N. Gehlen, Minneapolis.

Dr. B. Franklin Royer, Halifax, Nova Scotia, read a paper on "Health Centers of the Massachusetts-Halifax Health Commission." Discussed by Drs. Isaac D. Rawlings, Springfield, Ill., and Anna E. Rude, Washington, D. C.

The following officers were elected: chairman, John A. Ferrell, New York; vice chairman, John Sundwall, Ann Arbor, Mich.; secretary, W. S. Leathers, University, Miss. (term not expired); delegate, W. S. Leathers, University, Miss.; alternate, Paul A. Turner, Seattle.

SECTION ON UROLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

The chairman appointed Dr. Louis E. Schmidt, Chicago, and Dr. Arthur L. Chute, Boston, to serve on the Executive Committee in the places of Dr. William E. Lower, Cleveland, and Dr. Richard F. O'Neill, Boston, who were absent.

The following papers were read as a symposium on "Blood Chemistry in Kidney Disease":

Dr. Hilding Berglund, Stockholm, Sweden: "The Nitrogen Retention in Bright's Disease: Its Significance for Diagnosis and Prognosis."

Drs. John R. Caulk and William H. Olmsted, St. Louis: "Present Status of Blood Chemistry in Surgical Lesions of the Kidney."

Dr. J. Bentley Squier, New York: "The Significance of Chemical Blood Findings in Urologic and Allied Conditions."

Drs. J. T. Geraghty and William A. Frontz, Baltimore: "The Value of the Estimation of the Blood Content of Urea, Nonprotein Nitrogen, Creatinin and Carbon Dioxid as an Index of Renal Function."

Dr. B. A. Thomas, Philadelphia: "The Relative Value of Indigocarmin as a Functional Kidney Test and Blood Chemistry in Urologic Surgery."

These five papers were discussed by Drs. L. G. Rowntree, Rochester, Minn.; William Engelbach, St. Louis; Hugh Cabot, Ann Arbor, Mich.; Victor C. Meyers, New York; Russell M. Wilder, Rochester, Minn.; Benjamin S. Barringer, New York; George Lee Eaton, San Francisco; Victor G. Vecki, San Francisco; Louis E. Schmidt, Chicago; Henry J. Scherck, St. Louis; Hilding Berglund, Stockholm, Sweden, and B. A. Thomas, Philadelphia.

Dr. Edward L. Young, Jr., Boston, read a paper on "The Treatment of Urinary Incontinence in the Female." Discussed by Drs. Hugh Cabot, Ann Arbor, Mich., and Edward L. Young, Jr., Boston.

Dr. A. Raymond Stevens, New York, read a paper on "Hematurias of Obscure Origin." Discussed by Drs. Herman L. Kretschmer, Chicago; Louis E. Schmidt, Chicago; Hugh Cabot, Ann Arbor, Mich.; G. R. Satterlee, New York; A. I. Folsom, Dallas, Texas, and A. Raymond Stevens New York.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Thursday, May 25—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

Dr. H. W. E. Walther, New Orleans, read a paper on "Intravesical Management of Obstructions in the Ureter, with Special Reference to Stone and Stricture." Discussed by Drs. L. R. Wharton, Baltimore; James A. Gardner, Buffalo; Robert H. Herbst, Chicago; Arthur L. Chute, Boston; B. A. Thomas, Philadelphia; Benjamin S. Barringer, New York; Henry G. Bugbee, New York; Bransford Lewis, St. Louis; Victor D. Lespinasse, Chicago; Herman L. Kretschmer, Chicago, and H. W. E. Walther, New Orleans.

Dr. James A. Gardner, Buffalo, read the chairman's address, entitled "Socialistic Tendencies in Medicine."

Dr. A. J. Crowell, Charlotte, N. C., read a paper on "Abdominal Pain Due to Ureteral Obstruction and Its Treatment." Discussed by Drs. Bransford Lewis, St. Louis; A. B. Cecil, Los Angeles; Arthur L. Chute, Boston; Joseph H. Smith, Memphis, Tenn.; Edward L. Young, Jr., Boston; Hermon C. Bumpus, Rochester, Minn., and A. J. Crowell, Charlotte, N. C.

The Secretary presented the following resolution:

> Whereas, The Wassermann test, which up to date remains the most valuable laboratory aid in the diagnosis of syphilis, has been the subject of a great deal of abuse, and
>
> Whereas, This abuse has robbed it of a great deal of its value, and
>
> Whereas, This abuse seems to consist mainly of the following: (1) the use of many different methods of technic by different laboratories, and (2) the employment of insufficiently trained workers in many laboratories; therefore, be it
>
> *Resolved*, That the Chairman of this section appoint a committee of one to cooperate with like committees representing the Sections on Practice of Medicine, Dermatology and Syphilology, Nervous and Mental Diseases, Pediatrics, and Pathology and Physiology, in an endeavor to formulate a plan which will lead to the adoption by all laboratories of a standard method of technic for the performance of the Wassermann test, and the employment by all laboratories of only thoroughly trained technicians.

Dr. Benjamin S. Barringer, New York, moved that the resolution be accepted and adopted, and that the chairman appoint a committee of one as suggested in the resolution. Seconded by several members and unanimously carried.

The chairman appointed Dr. B. A. Thomas, Philadelphia, to represent the Section on Urology on this committee.

Dr. Frank Hinman, San Francisco, presented a paper on "Ureteral Transplantation: Its Indications, Routes and an Experimental Study of Duodenal Reabsorption." Discussed by Drs. A. B. Cecil, Los Angeles; Hermon C. Bumpus, Rochester, Minn.; A. I. Folsom, Dallas, Texas, and A. E. Belt, San Francisco.

Drs. H. W. Plaggemeyer and R. E. Cummings, Detroit, presented a paper on "Standard Kidney Operations, with Renal Function Studies: A Consideration of Reversible and Irreversible Metabolism in Dogs." No discussion.

Drs. E. S. Judd, William F. Braasch and A. J. Scholl, Rochester, Minn., presented a paper on "Surgical Indications with Fused (Horseshoe) Kidney." Discussed by Drs. Henry G. Bugbee, New York; Herman L. Kretschmer, Chicago; Benjamin S. Barringer, New York; L. T. LeWald, New York; Clarence Bandler, New York, and E. S. Judd, Rochester, Minn.

The Chairman appointed a nominating committee consisting of Drs. Arthur L. Chute, Boston; A. I. Folsom, Dallas, Texas, and B. A. Thomas, Philadelphia, with instructions to report on Friday afternoon.

Dr. J. H. Morrissey, New York, read a paper on "Urography as a Method of Diagnosis." Discussed by Drs. Hermon C. Bumpus, Rochester, Minn.; L. T. LeWald, New York, and J. H. Morrissey, New York.

Friday, May 26—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. James A. Gardner, Buffalo.

The following officers were elected: chairman, Dr. Henry G. Bugbee, New York; vice chairman, Dr. C. E. Burford, St. Louis; secretary, Dr. Herman L. Kretschmer, Chicago; delegate, Dr. Carl L. Wheeler, Lexington, Ky.; alternate, Dr. A. I. Folsom, Dallas, Texas.

The secretary announced that those desiring copies of the Transactions of the Section on Urology should send their subscriptions directly to the American Medical Association.

He also asked for an expression of opinion as to whether the former practice of sending copies of the Transactions to an approved list of hospitals, libraries and some foreign urologists should be resumed, these additional copies to be subscribed for by the members of the section. No action was taken.

Dr. Arthur B. Cecil, Los Angeles, read a paper on "A Technic for Doing Perineal Prostatectomy." Discussed by Drs. James A. Gardner, Buffalo; Henry G. Bugbee, New York; Arthur L. Chute, Boston; A. Raymond Stevens, New York; A. I. Folsom, Dallas, Texas; John R. Caulk, St. Louis, and Arthur B. Cecil, Los Angeles.

Dr. Arthur L. Chute, Boston, read a paper on "Spinal Anesthesia in Prostatectomy." Discussed by Drs. Bransford Lewis, St. Louis; A. J. Crowell, Charlotte, N. C.; H. W. E. Walther, New Orleans; A. Raymond Stevens, New York, and Arthur L. Chute, Boston.

Drs. Robert H. Herbst and Alvin Thompson, Chicago, presented a paper on "Carcinoma of the Prostate."

Dr. Benjamin S. Barringer, New York, read a paper on "Bladder Carcinoma: Statistics of Radium Removal Versus Surgical Removal."

These two papers were discussed by Drs. Henry G. Bugbee, New York; Herman L. Kretschmer, Chicago; B. A. Thomas, Philadelphia; Hermon C. Bumpus, Rochester, Minn.; Budd C. Corbus, Chicago; A. J. Crowell, Charlotte, N. C.; Arthur L. Chute, Boston, and Robert H. Herbst, Chicago.

Drs. Budd C. Corbus and Vincent J. O'Conor, Chicago, presented a paper on "The Tabetic Bladder from the Standpoint of the Urologist." Discussed by Drs. Harry G. Greditzer, St. Louis; R. E. Cummings, Detroit, and Budd C. Corbus, Chicago.

Dr. Clinton K. Smith, Kansas City, Mo., read a paper on "Urology and the General Surgeon." Discussed by Drs. James A. Gardner, Buffalo, N. Y., and F. B. Young, Gering, Neb.

Dr. George F. Farnam, Santa Barbara, Calif., read a paper on "Prostatic Massage: A Practical and Theoretical Discussion." Discussed by Drs. James A. Gardner, Buffalo; Bransford Lewis, St. Louis; Herman L. Kretschmer, Chicago; A. I. Folsom, Dallas, Texas, and George F. Farnam, Santa Barbara, Calif.

At the close of the program Dr. Arthur L. Chute, Boston, moved a standing vote of thanks to the officers of the section for their fair and courteous treatment of the members. Seconded and unanimously carried.

Dr. James A. Gardner, Buffalo, moved a vote of thanks to the local members of the profession who had been such generous and hospitable hosts. Unanimously carried.

SECTION ON ORTHOPEDIC SURGERY

Wednesday, May 24—Afternoon

The meeting was called to order at 2:10 by the chairman, Dr. H. Winnett Orr, Lincoln, Neb.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Pathogenesis and Management of Certain Dyskinesias Irremediable by Operative or Prosthetic Measures." Discussed by Drs. Hugh T. Patrick, Chicago; M. S. Henderson, Rochester, Minn., and Tom A. Williams, Washington, D. C.

Dr. Charles S. Venable, San Antonio, Texas, read a paper on "An Apparatus for Fixation of Fractures of the Femur: Report of Cases." Discussed by Drs. Nathaniel Allison, St. Louis; W. C. Campbell, Memphis, Tenn., and C. S. Venable, San Antonio, Texas.

Dr. Julius H. Hess, Chicago, read a paper on "Premature Infants — Malformations and Diseases of Interest to the Orthopedic Surgeon." Discussed by Drs. W. McKim Marriott, St. Louis, and Julius H. Hess, Chicago.

Dr. Frederick C. Kidner, Detroit, read a paper on "Indication for Operation on Fractured Femur." Discussed by Drs. William R. Cubbins, Chicago; C. B. Francisco, Kansas City, Mo.; Philip H. Kreuscher, Chicago; H. D. Wood, Fayetteville, Ark.; Paul B. Magnuson, Chicago; E. W. Ryerson, Chicago, and Frederick C. Kidner, Detroit.

Dr. William O'Neill Sherman, Pittsburgh, read a paper on "Poor Functional Results in the Treatment of Fractures." Discussed by Drs. Hugh McKenna, Chicago, and B. C. Darling, New York.

Dr. R. Wallace Billington, Nashville, Tenn., read a paper on "Treatment of Industrial Accidents of the Knee." Discussed by Drs. A. L. Fisher, San Francisco; M. S. Henderson, Rochester, Minn.; G. D. Marshall, Kokomo, Ind., and R. Wallace Billington, Nashville, Tenn.

Dr. William S. Baer, Baltimore, read a paper on "The Present State of Arthroplasties." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; E. W. Ryerson, Chicago; J. M. Neff, Chicago, and William S. Baer, Baltimore.

The chairman appointed Dr. J. Archer O'Reilly, St. Louis, a member of the Executive Committee in the absence of Dr. G. W. Hawley.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was laid on the table until the Friday meeting.

Thursday, May 25—Afternoon

The meeting was called to order at 2:05 by the chairman, Dr. Willis C. Campbell, Memphis, Tenn.

Dr. Arthur L. Fisher, San Francisco, read a paper on "The Results of Ankylosing Operations in Tuberculosis of the Spine." Discussed by Drs. M. S. Henderson, Rochester, Minn.; F. C. Kidner, Detroit; Charles A. Parker, Chicago; Charles A. Stone, St. Louis; Henry W. Frauenthal, New York, and A. L. Fisher, San Francisco.

Dr. Louis B. Wilson, Rochester, Minn., read a paper on "Teaching of the Fundamentals of Surgery from the Point of View of the Graduate School." Discussed by Dr. Dean Lewis, Chicago.

Dr. Robert B. Cofield, Cincinnati, read a paper on "Bony Bridging in Tuberculosis of the Spine." Discussed by Drs. F. C. Kidner, Detroit; W. C. Campbell, Memphis, Tenn., and Robert B. Cofield, Cincinnati.

Dr. H. Winnett Orr, Lincoln, Neb., read the chairman's address, entitled "The Fundamental Principles of Orthopedic Reconstruction and Industrial Surgery: The Real Lessons of the Great War."

Dr. Allen B. Kanavel, Chicago, read a paper on "Surgery of the Hand." Discussed by Drs. Vilray P. Blair, St. Louis; M. A. Bernstein, Chicago, and Allen B. Kanavel, Chicago.

Dr. Stewart L. McCurdy, Pittsburgh, read a paper on "Bone Lesions of Twenty Different Conditions." Discussed by Drs. J. Archer O'Reilly, St. Louis, Mo., and Stewart L. McCurdy, Pittsburgh.

Friday, May 26—Afternoon

The meeting was called to order at 2:10 by the chairman.

The following officers were elected: chairman, Willis C. Campbell, Memphis, Tenn.; vice chairman, Henry B. Thomas, Chicago; secretary, J. Archer O'Reilly, St. Louis; delegate, John Ridlon, Chicago; alternate, F. R. Ober, Boston.

Dr. W. C. Campbell moved a vote of thanks to Dr. Henry B. Thomas for the efficient service he had given the section as secretary during the last five years. Seconded and carried.

The chairman appointed Dr. F. R. Ober, Boston, as member of the Executive Committee in the absence of Dr. M. S. Henderson.

Dr. B. G. Chollett, Toledo, Ohio, read a paper on "A Report of the Year's Work on Crippled Children in Ohio." Discussed by Dr. Robert B. Cofield, Cincinnati.

Dr. Philip Lewin, Chicago, read a paper on "Pseudohypertrophic Muscular Paralysis: Report of Fifteen Cases." Discussed by Drs. L. J. Pollock, Chicago; Charles A. Parker, Chicago; F. R. Ober, Boston; Philip Hoffman, St. Louis; Henry W. Frauenthal, New York; H. W. Orr, Lincoln, Neb., and Philip Lewin, Chicago.

Dr. Kellogg Speed, Chicago, read a paper on "The Pathology of Fracture and Dislocation of the Carpal Bones." Discussed by Drs. A. L. Fisher, San Francisco; C. B. Francisco, Kansas City, Mo., and Kellogg Speed, Chicago.

Dr. Harold R. Conn, Akron, Ohio, read a paper on "The Importance of Prevention and Early Treatment in Disabilities Due to Injuries of the Lower Back." Discussed by Drs. J. Archer O'Reilly, St. Louis, and Henry W. Frauenthal, New York.

Drs. Frank R. Ober and Bronson Crothers, Boston, presented a paper on "Functional Aspects of Birth Injuries of the Central Nervous System." No discussion.

Dr. Charlton Wallace, New York, read a paper on "After-Care of Infantile Paralysis."

Dr. Henry O. Feiss, Cleveland, read a paper on "Early Activation of Muscles in Infantile Paralysis."

These two papers were discussed by Drs. Frank R. Ober, Boston, Charlton Wallace, New York, and Henry O. Feiss, Cleveland.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

Wednesday, May 24—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. H. W. Soper, St. Louis.

Dr. H. W. Soper, St. Louis, read the chairman's address, entitled "Physiologic Standards in Gastro-Enterology." No discussion.

The resolution referred to in the minutes of the Section on Practice of Medicine was offered, and, after discussion, was adopted.

Dr. William M. Beach, Pittsburgh, moved that the chairman appoint a committee to draft suitable resolutions on the death of Dr. Dwight Henderson Murray of Syracuse, N. Y. Seconded and carried.

The chairman appointed Drs. William M. Beach, Pittsburgh, and Louis J. Hirschman, Detroit, to act as the committee.

Dr. John A. Lichty, Pittsburgh, read a paper on "A Consideration of Chronic Appendicitis." Discussed by Drs. Logan Clendening, Kansas City, Mo.; Leon T. Le Wald, New York; Joseph C. Bloodgood, Baltimore; Walter C. Alvarez, San Francisco; Seale Harris, Birmingham, Ala.; Franklin W. White, Boston; R. Walter Mills, St. Louis, and John A. Lichty, Pittsburgh.

Dr. W. Howard Barber, New York, read a paper on "Enteroparesis." Discussed by Drs. Walter C. Alvarez, San Francisco; Leon T. Le Wald, New York, and W. Howard Barber, New York.

Dr. G. R. Satterlee, New York, read a paper on "The Value of Entero-Antigens in Gastro-Intestinal Disorders." Discussed by Drs. Anthony Bassler, New York, and G. R. Satterlee, New York.

Dr. Louis J. Hirschman, Detroit, read a paper on "The Value of Temporary Colostomy." Discussed by Drs. A. B. Graham, Indianapolis; Samuel G. Gant, New York; Sidney K. Simon, New Orleans; Alfred Strauss, Chicago; John L. Jelks, Memphis, Tenn.; Anthony Bassler, New York; Granville S. Hanes, Louisville, Ky., and Louis J. Hirschman, Detroit.

Dr. J. Rawson Pennington, Chicago, read a paper on "Age and Site Incidence of Carcinoma of the Rectum and Pelvic Colon." Discussed by Drs. William M. Beach, Pittsburgh; Ralph W. Jackson, Fall River, Mass.; Louis J. Hirschman, Detroit; John L. Jelks, Memphis, Tenn.; A. L. Levin, New Orleans, and J. Rawson Pennington, Chicago.

Thursday, May 25—Afternoon

The meeting was called to order at 2:15 by the chairman.

The following officers were elected: chairman, Dr. J. Rawon Pennington, Chicago; vice chairman, Dr. Franklin W. White, Boston; secretary, Dr. Sidney K. Simon, New Orleans; delegate, Dr. Louis J. Hirschman, Detroit; alterate, Dr. Martin E. Rehfuss, Philadelphia.

Dr. William M. Beach, Pittsburgh, presented the report of he special committee appointed to draft resolutions on the eath of Dr. Murray, as follows:

Dr. Dwight Henderson Murray was born in Artman, N. Y., Aug. 31, 861, and died suddenly in Syracuse, N. Y., Oct. 21, 1921.

1. He graduated in medicine from Syracuse University, and was professor of proctology there when he died. His influence was great and is positions were high in local, country, state and national organizaons. And greatest of these was his work for ten years in the House f Delegates of the American Medical Association, which culminated in is election as its speaker, which office he held at his death.

2. Some of his work in that body was also a part of the history of his section. Undiscouraged by long opposition, he put up a long and winning fight in the House of Delegates for the most decisive recognion which proctology has ever had as a specialty. This was the organiation of the Section on Gastro-Enterology and Proctology in 1917, now one of the best and most largely attended sections, and he was its first hairman.

3. Dr. Murray was a manly and militant personality, and he left his mprint on whatever he touched. He will be missed by his family, his community, his profession, and not least by this section, whose unanimous vote records this minute.

The report was adopted.

Dr. Seale Harris, Birmingham, Ala., read a paper on "Gastroptosis: A Study of Five Hundred Cases." Discussed by Drs. John Bryant, Boston; A. L. Levin, New Orleans; Anthony Bassler, New York; Leon T. Le Wald, New York; John L. Jelks, Memphis, Tenn.; Charles D. Aaron, Detroit; G. R. Satterlee, New York, and Seale Harris, Birmingham.

Dr. Walter C. Alvarez, San Francisco, read a paper on "New Methods of Studying Gastro-Intestinal Peristalsis." Discussed by Drs. A. J. Carlson, Chicago; Sidney Strauss, Chicago, and Walter C. Alvarez, San Francisco.

Dr. E. H. Gaither, Baltimore, read a paper on "The Value and Limitations of Roentgen-Ray Diagnosis in Digestive Diseases." Discussed by Drs. R. Walter Mills, St. Louis; Franklin W. White, Boston; Leon T. Le Wald, New York; T. R. Brown, Baltimore; E. H. Kessler, St. Louis; Sidney A. Portis, Chicago, and E. H. Gaither, Baltimore.

Dr. Joseph Sailer, Philadelphia, read a paper on "Achylia Gastrica." Discussed by Drs. Frank Smithies, Chicago; Seale Harris, Birmingham, Ala.; A. L. Levin, New Orleans; Arno B. Luckhardt, Chicago; H. W. Soper, St. Louis; A. J. Carlson, Chicago, and Joseph Sailer, Philadelphia.

Dr. Charles D. Aaron, Detroit, read a paper on "Nonsurgical Quadrant Treatment of Internal Hemorrhoids and Prolapse of the Rectum." Discussed by Drs. William H. Stauffer, St. Louis; Ralph W. Jackson, Fall River, Mass.; Collier F. Martin, Philadelphia; A. B. Graham, Indianapolis; E. V. Dickey, Dallas, Texas; J. Rawson Pennington, Chicago, and Charles D. Aaron, Detroit.

Dr. Collier F. Martin, Philadelphia, read a paper on "A Suggested Classification for Anorectal Prolapse." Discussed by Drs. Granville S. Hanes, Louisville; William H. Stauffer, St. Louis, and Collier F. Martin, Philadelphia.

Friday, May 26—Morning

A joint meeting was held with the Section on Surgery, General and Abdominal. For a report of the proceedings, see the minutes of that section.

SECTION ON MISCELLANEOUS TOPICS

MEETING ON ANESTHESIA

Wednesday, May 24—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Isabella C. Herb, Chicago.

Dr. J. M. Rector, Jersey City, N. J., read a paper on "Synergistic Analgesia: Clinical Observations." Discussed by Drs. J. T. Gwathmey, New York City; Thomas J. Collier, Atlanta, Ga.; Ansel M. Caine, New Orleans; Harry Jackson, Chicago; J. L. Corbin, Minneapolis, and J. M. Rector, Jersey City, N. J.

Dr. Isabella C. Herb, Chicago, read the chairman's address, entitled "Postoperative Lung Complications."

Dr. Cline N. Chipman, Washington D. C., read a paper on "Relation of the Anesthetic to Pulmonary Abscess Following Nose and Throat Surgery." Discussed by Drs. A. H. Miller, Providence, R. I.; R. Stuart Adams, San Antonio, Texas; Frances E. Haines, Chicago; Edwin McGinnis, Chicago; Logan Clendening, Kansas City, Mo.; I. E. McKesson, Toledo, Ohio, and Cline N. Chipman, Washington, D. C.

Dr. Harry T. Jackson, Chicago, read a paper on "Clinical and Experimental Studies on the Cerebrospinal Tension in Relation to Surgical and Anesthetic Risk." Discussed by Drs. E. I. McKesson, Toledo, Ohio; F. H. McMechan, Avon Lake, Ohio, and Harry T. Jackson, Chicago.

Dr. J. F. Corbett, Minneapolis, read a paper on "An Experimental Study of the Epinephrin Content of the Suprarenal Gland Under Anesthesia and in Shock." Discussed by Drs. Nettie Klein, Texarkana, Texas; Ansel M. Caine, New Orleans, and J. F. Corbett, Minneapolis.

Dr. W. E. Burge, Urbana, Ill., read a paper on "The Effects of the Repeated Administration of Anesthetics on Blood Catalase." Discussed by Drs. Morris H. Clark, Kansas City, Mo.; F. H. McMechan, Avon Lake, Ohio, and W. E. Burge, Urbana, Ill.

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SATURDAY, JUNE 10, 1922

THE INCIDENCE OF CANCER

"The imagination of the race," says a popular writer, "has ever endowed cancer with a peculiar individuality of its own. Although it has vaguely personified in darkest ages other diseases like the Plague, the Pestilence and Maya (the small pox) these have rapidly faded away in even the earliest light of civilization, and have never approached in concreteness and definiteness the malevolent personality of Cancer."[1] And today there is being added to the horror of the disease and the mystery of its genesis the widespread reputation that cancer is heavily on the increase in all civilized countries.[2]

The statistics of the United States registration area show a continuous increase in the reported cancer deaths, as do similar statistics in other countries. On this fact has been based a widespread belief that cancer is a growing menace, which has become an integral and disquieting part of the layman's knowledge of cancer. That this increase in the number of reported deaths from cancer does not necessarily mean an increase in the actual amount of human cancer has been pointed out frequently enough, but qualifying statements notoriously make less impression than unqualified conclusions. Five years ago, Willcox[3] analyzed the statistical data on which has been based the belief that cancer is increasing, and concluded that the evidence did not establish this conclusion. He called attention to the fact that a large part of the alleged increase was produced by the inclusion of more cases because of more accurate diagnosis; for when the statistics were so kept as to permit of analysis it was found that the increase was entirely in cancer in inaccessible parts of the body, whereas in the same population there is no increase in the number of cancers superficially located, so that their diagnosis could be made as accurately years ago as now. The increasing average age of the population in any community of necessity carries with it an increased cancer rate, as also does more accuracy in reporting deaths, especially the elimination of old age as a cause of death. Hence we find the cancer death rate highest in the most advanced communities, and lowest in the most backward, not because "cancer is a disease of civilization," but simply because in the former localities the statistics come nearer reflecting the actual facts. As an illustration of the influence of improved diagnosis on the mortality statistics may be cited the fact that, between 1900 and 1915, the reported appendicitis mortality showed an increase of 40 per cent., while at the same time the real rate was undoubtedly decreasing because of improved diagnosis and treatment. Increasing accuracy in diagnosis works only in one way; that is, it results in attributing to cancer many deaths which would formerly have been incorrectly attributed to some other cause, and changes but few in the other direction.

Insurance statistics are perhaps the most valuable we have in this country, for there is likely to be more care taken in giving the true cause of death when payment of insurance claims is involved. When, therefore, a competent statistician accustomed to study figures of facts without regard to tradition and unmoved by superficial guesswork applies rigid logic to premises which have been shorn of some of their obvious errors, he deserves a respectful hearing, even when "common knowledge" appears to be against him. Strong[4] has recently concluded that we cannot now determine whether the cancer mortality is slightly increasing, practically stationary, or slightly decreasing, but that we can be sure it is not greatly increasing. A more exact result is something for future investigations when reliable statistics for a long period of years are obtainable. Fair-minded students of mortality statistics have often pointed out that with the development of medical science there has ensued a gradual increase in the correctness of diagnosis, of the cause of death as well as a more complete recording of all cases of disease. The imperfections of the records of even a generation ago need not be dwelt on here. Strong reminds us that undoubtedly in the past many deaths attributed to old age should properly have been set down as cancer, and many others attributed to other causes would undoubtedly have been attributed to cancer if the correct diagnosis had been made. The result of this would be that if there were really stationary cancer mortality it would nevertheless appear to be increasing considerably because of the increasing correctness of diagnosis.

Strong has requisitioned the data from two of the largest life insurance companies secured during the years 1911 to 1921, inclusive, which may be regarded as relatively accurate in comparison with figures from other sources. The comparative novelty in his interpretation of available cancer mortality statistics lies in the insistence on comparing death rates for the same ages, as cancer is an older age disease. Influx or emigration of young persons would unquestionably alter the conclusions from time to time if an entire population were made the basis of deductions, as is usually done.

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[1] Hutchinson, W.: Preventable Diseases, Boston, Houghton, Mifflin Company, 1914, p. 350.

[2] Fisher, Irving, and Fisk, E. L.: How to Live, New York, 1919, p. 381.

[3] Willcox, W. F.: On the Alleged Increase of Cancer, J. Cancer Res. **2**: 267 (July) 1917.

[4] Strong, W. M.: Is Cancer Mortality Increasing? J. Cancer Res. **6**: 251 (July) 1921.

In view of all the tendencies that exist to cause an appearance of statistical increase of cancer mortality, the failure of careful statistical study to indicate any noteworthy increase of cancer is strong evidence that such an increase is not taking place. This conclusion, of course, does not lessen the seriousness of the cancer problem; but it should prevent fears, at present not justified, that it is an increasing menace that threatens to overwhelm the human race, as some alarmists have maintained. There will always be plenty of other means of death besides cancer.

In combating the fear of a growing menace of cancer, it has been remarked [1] that a disease for which 80 per cent. of the mortality occurs after 45 years of age is scarcely likely to threaten the continued existence of the race. Let us frankly realize, however, that meanwhile the statistics of the United States registration area show a continuous increase in cancer deaths. The hopeful confidence of a seriously minded profession supporting a host of tremendously earnest investigators in the field of cancer research may be regaled by the assurance that cancer is not gaining a greater foothold in the younger members of our population; yet the problem of the unphysiologic deaths of even the later years of life continues to loom so large and difficult that the unceasing, unrelenting, undismayed attack on it through every resource of science calls for great professional courage as well as the highest intelligence that man can mobilize.

THE TRAINING OF HOSPITAL EXECUTIVES

A committee on the training of hospital executives, appointed by the Rockefeller Foundation early in 1920, has just rendered its report; it is "an attempt to present a composite picture of the American hospital and to suggest a basis for training hospital executives." The hospital is referred to as the common ground where the patient, the community and the professional groups come in contact so that, with proper amplification and development, the hospital will help materially in the solution of many problems. Attention is called to he enormous capital—approximately $3,000,000,000—nvested in the hospitals of the United States and Canada, and to the tremendous financial gain which will result from the greater efficiency which is possible f due consideration is given to the problems of admin-stration as well as to those of location, organization and finances. The report recognizes the major func-ion of the hospital as its service to the patient—"the ross section of human life." The hospital is "a community organization which provides facilities and per-onnel for rendering the highest possible grade of health service to patients, professional groups and the community; for educating the community to demand and support adequate services and sound health policies; for educating additional personnel and professional groups in technical fields and in cooperative endeavor, and for advancing our knowledge of disease and its prevention through technical research and appropriate organizations."

While the ultimate responsibility for policies and for appointments on the professional staffs rests with a governing board, the one person responsible for the conduct of the hospital is its executive—its superintendent, manager or director—the basic reason for the proposed course. The executive organizes the professional groups and other personnel in order to secure their proper functioning. Such an officer should be able to interpret community needs and the fundamentals of sound administration, as well as to be able to mobilize and direct the diversified activities of the hospital.

Specific training for the hospital executive has not heretofore been provided for, and, in fact, not even considered. The committee shows the need for the special class of trained hospital executives, and advises that his education be placed on a university basis. It recommends also that the conception of the hospital be changed; that it be looked on more as a community health center wherein the various health activities can cooperate under a central policy-determining organization. Provision will need to be made also for satisfactory compensation whereby students of the highest ability can be secured. The course of instruction outlined includes public health, 20 per cent.; social sciences, 15 per cent.; organization, 15 per cent.; hospital functions and history, 10 per cent.; business science, 10 per cent.; institutional management, 10 per cent.; personnel administration, 5 per cent.; community hospital needs, 5 per cent.; physical plant, 5 per cent., and jurisprudence, 5 per cent. Instruction in these subjects will cover a period of nine months, to be followed by four months of practical work in a hospital, and two months to be spent in visiting hospitals of different types and sizes.

The proposed training school for hospital executives should be located where the facilities, machinery and teaching personnel necessary for presenting the fundamentals of the subjects are accessible. Such material and personnel are found for the most part in well established schools of arts and sciences, business administration, medicine, nursing, public health and engineering, as well as in hospitals, dispensaries and social agencies. The training contemplates university supervision and immediate direction of an individual of adequate university caliber with the departmental staff appropriate to the proposed course of training. It is recommended that, wherever possible, courses now in existence and present personnel be utilized.

This report reveals the greater possibilities of community service which hospitals may have through the securing of thoroughly trained superintendents. The whole scheme may appear to some to be idealistic, but, it is based on a careful study of existing conditions, and an actual trial of the plan may demonstrate its practicability.

THE "OPEN DOOR" POLICY IN ANIMAL EXPERIMENTATION

About fourteen years ago, the Committee for the Protection of Medical Research of the American Medical Association began collecting facts relative to the use of animals in the laboratories of the United States. The inquiry soon disclosed that in a number of the older institutions there had existed for many years regulations prescribing humane treatment of animals before, during and, in case of continued existence, after operation. These scattered and diverse statements were gathered together, correlated, revised, and made generally applicable to different conditions. After the "rules" had thus been reformulated, the committee undertook to have them adopted by research institutions everywhere, in such manner that the director of each laboratory was made responsible for having them conspicuously posted and enforced. This was accomplished in practically all medical schools, in research institutes, in the veterinary schools where animal experimentation is carried on, and in most of the laboratories of the state boards of health. This nearly universal acceptance of a humane code of conduct in the experimental use of lower animals has placed medical research in a strong position when efforts to secure hostile legislation have been made.

A contention of the antivivisectionists, which they have repeatedly emphasized, is that animal experimentation goes on "in secret," "behind barred doors," where no one can know the "cruelties" that are being perpetrated. This charge was met in many instances by invitations to officers of humane societies to visit the laboratories at any time in order to learn the actual facts. Obviously, this attitude, if generally taken, would further strengthen the status of animal experimentation in the opinion of reasonable people; in fact, inquiry reveals that this "open door" policy has been accepted in all the medical schools except one, and in all the institutes for medical research in the United States.

Those who have opposed legislation to limit the use of animals for scientific progress have consistently contended that existing law against cruelty applies quite as much to laboratory workers as it does to any other citizens. In this view they were strongly supported by Governor Johnson of California, some years ago, when he vetoed a special measure directed against animal experimentation on the ground that the general law applied. If now there is any suspicion that animals are not humanely treated in research laboratories, the remedy is conveniently at hand. The enforcement of the rules, the adoption of the "open door" policy, and the applicability of the anticruelty laws do away with any need for any special restrictive legislation.

Current Comment

"AN APOLOGIST FOR 'PATENT MEDICINES'"

Henry C. Fuller's new book "The Story of Drugs" was discussed at some length in THE JOURNAL for May 13. Its whitewashing of the "patent medicine" business and its panegyric of the Proprietary Association (the "patent medicine" organization) led THE JOURNAL to suggest that the nostrum interests could well have afforded to put out the book at their own expense as a free gift to the public. The latest issue of the mouthpiece of the "patent medicine" interests, *Standard Remedies,* unwittingly confirms THE JOURNAL'S opinions. The magazine contains an editorial praising Fuller's book and suggesting that "it should be in the hands of every manufacturer and all of his chiefs, at least"; it opines that "anyone in the business will be fascinated with it." Elsewhere in the same issue of *Standard Remedies* appears another item of interest. In an article dealing with the recent annual meeting of the Proprietary Association, we find reference to "Dr. Henry C. Fuller of the Institute of Industrial Research" and the statement that Fuller had made a report to the "patent medicine" men when they were in session, "of his research and analytical activities on behalf of the Association." "We are advertised by our loving friends!"

A MEDICAL GARDEN

While synthetic medicaments have held the focus of medical attention during the last two decades, those which may be obtained from medicinal plants have continued to be of great utility, and many even irreplaceable. Such plant derivatives as cinchona, aconite, opium, rhubarb and senna still command a wide range of use in medical practice. For this reason the exhibit at St. Louis by the Missouri Botanical Gardens of a reproduction of the old Chelsea Physic Garden attracted a large number of the physicians who visited the annual session of the association. A recent issue of the bulletin published by this organization[1] is devoted to an historical discussion of the famous garden which was reproduced. Even in 1673, as shown by this report, it was found necessary to protect the physician and dealer in drugs against unsatisfactory and inefficacious counterfeits of valuable drug substances, and this necessity led to the establishment of the Chelsea garden. A greenhouse, heated by so-called "subterranean heat," conveyed by means of a brick flue under the conservatory, was erected in 1681, and in 1732 the garden was visited by Linnaeus, who states in his diary that he collected many plants in the garden and that he was given several dried specimens from South America. The Chelsea garden is still maintained, although now administered by the trustees of the London Parochial Charities. In the exhibit as made in St. Louis, the reproduction followed the plan of the Chelsea garden drawn by John Hayes in 1753. To complete this demonstration, the authorities of the Missouri Botanical Garden gathered in the museum building copies of old works on materia medica and other incunabula on botanic subjects of medical interest, and also provided demonstrations on the diseases of plants. The medical profession is greatly indebted to the authorities of the Missouri institution for this practical historical demonstration of botanic therapy.

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[1] Missouri Botanical Garden Bulletin **10**: 55 (April) 1922.

SMALL DOSAGE

The comparatively great significance which very small amounts of certain substances can attain in relation to the living organism could be illustrated in many fields. There are familiar drugs used with unquestionable success in dosages as small as $\frac{1}{200}$ grain (0.0003 gm.). The entire iodin supply of the thyroid gland, on which normal physiologic behavior of a number of functions depends, amounts to only a few thousandths of a gram, so that a single milligram of thyroxin, the newly isolated active constituent of the thyroid, exerts a profound effect on the organism. This small quantity can produce a 2 per cent. increase in basal metabolism in a 70 kilogram (154 pound) man. The investigators of the vitamins are pointing out that from the quantitative standpoint these potent food factors must belong among "the infinitely little in nutrition." Snake venoms, long classed among the most toxic of poisonous substances, are fatal to adult man in doses of a few milligrams. Laboratory animals have been killed by a few thousandths of a milligram of toxalbumin from the castor bean. The minimal lethal dose of some culture filtrates containing diphtheria toxin is measured in thousandths of a cubic centimeter. However, all these figures seem enormous by comparison with the data recently secured by Bronfenbrenner and Schlesinger,[1] in the Department of Preventive Medicine and Hygiene of Harvard Medical School, in a study of the poison elaborated by *Bacillus botulinus,* the micro-organism concerned in many of the recent outbreaks of the form of food poisoning termed botulism. In a recent issue of The Journal these investigators report the minimal lethal dose of crude botulinus filtrates for mice to be 3×10^{-6} c.c. (i. e., 0.000,003 c.c.). The specific botulinus toxin is, however, capable of an extraordinary increase in potency when it encounters the condition of hydrogen ion concentration similar to that found in the stomach during active digestion. In a medium of such reaction, a minimal lethal dose of only 3×10^{-21} c.c., or 0.000,000,000,000,000,000,003 c.c., has been attained. Even when converted from mouse to human dosage by an increment of several thousand times this figure, the quantity of actual substance involved remains within the range of the infinitesimal. A teaspoonful would menace a nation. These findings represent a new order of magnitude in toxicologic research.

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[1] Bronfenbrenner, Jacques, and Schlesinger, M. J.: Some of the Factors Contributing to Toxicity of the Botulinus Toxin by Mouth, J. A. M. A. **78**: 1519 (May 20) 1922.

Association News

DATE OF 1923 SESSION

The Board of Trustees of the American Medical Association announces June 25-29, 1923, as the dates for the next Annual Session of the American Medical Association at San Francisco.

MINUTES OF THE MEETING OF THE BOARD OF TRUSTEES

Meetings of the Board of Trustees were held at the Hotel Statler, St. Louis, May 19, 1922, and adjourned meetings were held, May 20, 21, 22, 24 and 25 at the same place. All members of the Board of Trustees were present at these meetings. Dr. Hubert Work attended the called meeting, May 19; Dr. George E. de Schweinitz and the General Manager, Dr. George H. Simmons, attended all of the meetings. May 19, Drs. Vaughan, Cannon, Board, Rankin and Dr. West, the acting secretary of the Council on Health and Public Instruction, were present.

Lay Medical Magazine

The lay medical magazine was the subject of discussion by the Board and the Council on Health and Public Instruction. As a result of this conference, the following statement was formulated and incorporated in the report of the Trustees to the House of Delegates:

> At the last annual session of the Association at Boston, the House of Delegates authorized the publication of a lay medical magazine. During the year the Board has held conferences with the Council on Health and Public Instruction and with individuals in regard to the character, scope, frequency of publication, physical form and other details of importance in this undertaking. It is now able to report that it is proceeding in the establishment of a lay medical magazine, which will be published when the needed additional pressroom is made available on the completion of the new headquarters' building.

Annual Report of the Board of Trustees

The annual report of the Board of Trustees as presented in printed form was approved by the Board for presentation to the House of Delegates. (See The Journal, May 27, p. 1615.)

Legal Defense Indemnity in Malpractice Suits

Dr. McDavitt, chairman of the special committee of the Board, presented a report which embodied the study made by the committee of legal defense indemnity in malpractice suits. Emphasis was made of the need of cooperation between the administrative directors at headquarters of the Association and the committees on medical defense of the constituent state associations. Attention was called to the action of the Council on Health and Public Instruction in its report to the House of Delegates recommending the separation of all legislative functions from the jurisdiction of the Council. Inasmuch as the House of Delegates approved of this request of the Council on Health and Public Instruction and recommended the organization and establishment at headquarters of a Bureau on Legal Medicine and Legislation with a full-time secretary in charge, the Board empowered the Executive Committee and the General Manager to proceed at once with this undertaking.

Cooperation and Aid of the Association with Constituent State Associations in Combating Harmful Legislation

Dr. Williamson presented a request from the Executive Committee of the League for the Conservation of Health of the State of California, for aid in combating legislation inimical to the welfare of the public and detrimental to the efficient practice of medicine, the aid requested to be in the form of the publication of literature intended to educate the general public in matters relating to public health, such as that which was furnished by the Association during the 1920 election in California.

The subject of the policy which the Association should adopt in regard to furnishing aid to the constituent state associations in matters of legislation, such as that presented by Dr. Williamson, received earnest discussion, and it was finally decided that the request for aid by California and by other states which may be received hereafter, to combat legislation derogatory to the best interests and welfare of the public, will be granted with the understanding that the details in carrying out this policy shall be under the jurisdiction of the Executive Committee and the General Manager; however, it was also the understanding that this aid shall be limited to cost of the publication of educational literature, which will be furnished within certain limitations, and that when the requested aid involves a considerable financial cost, it shall be given only upon the approval of the full Board.

American Red Cross

Dr. Phillips presented the subject of the public health activities of the American Red Cross. The subject was discussed at several of the meetings of the Board, and at the meeting held on May 25, the President, Dr. de Schweinitz, made a verbal report on the results of the conference which he had held with the representative of the American Red Cross who came to St. Louis from Washington, D. C. It was the unanimous opinion of the members of the Board that the extensive program of the American Red Cross of public health work contained certain proposed activities which are of a character which in operation would be detrimental to the best interests of the public and of the medical profession. It was finally decided that President de Schweinitz be authorized to confer and advise with the chairman of the Central Committee of the American Red Cross in regard to its public health functions.

National Medical Association

Dr. George E. de Schweinitz presented a letter from Dr. H. M. Green, president of the National Medical Association, a society of colored practitioners. This included a request for the cooperation of the American Medical Association with the National Medical Association in the promotion of standards of medical education, medical practice and the like. The President was requested to make a suitable reply.

Component Societies and Periodic Health Examinations

The request of the National Health Council, through the Council on Health and Public Instruction, that the Association cooperate in the observance of National Health Days in December, 1922, with the object of the promotion of the periodic physical examination of the sick and the well, received general discussion. It was the consensus of opinion of the members of the Board that periodic physical examination should be promoted through the component county medical societies; that such examinations should be offered to the public by the organized county society and the examination made by its own members; that in the promotion of this program the Council on Health and Public Instruction should formulate the proper standard examination forms; and finally, the Board recommended that the Council on Health and Public Instruction should present this matter to the House of Delegates for decision. [See minutes of the House of Delegates, THE JOURNAL, June 3, p. 1709.]

Executive Committee Meetings

In the discussion of the establishment of a Bureau on Legal Medicine and Legislation and the publication of a lay medical magazine, it was recognized that the administrative duties and responsibilities of the administrative personnel would be greatly increased. To meet these conditions, the Board empowered the Executive Committee to request the attendance at any monthly meeting, when special subjects are to be considered, of the President, the President-Elect, the chairman of any of the councils, and any member of the Board.

Treasurer of the Association

Dr. William A. Pusey of Chicago informed the Board that, because of other responsibilities, he was compelled to decline to act any longer as treasurer of the Association. A special committee of three was appointed to select a Fellow of the Association resident in Chicago, to be nominated by the Board for the position of treasurer. At the adjourned meeting on May 24, the committee proposed Dr. Austin A. Hayden of Chicago, and he was unanimously nominated for the position.

Invitation of Cities for the 1923 Annual Session

The Secretary of the Association presented invitations from San Francisco, Washington, Atlantic City, New York and Chicago for the consideration of the Board for the place of the annual session of 1923. The Board unanimously decided that it would present to the House of Delegates the invitation from San Francisco and from Atlantic City as desirable places for the meeting of 1923, and request the House to make a choice between the two cities.

Reorganization of the Board of Trustees

The new Board of Trustees, as constituted by the election of Drs. A. R. Mitchell, D. Chester Brown and Oscar Dowling to succeed themselves, met on May 25, and organized by the election of Dr. Oscar Dowling as chairman, Dr. D. Chester Brown, vice chairman, and Dr. Frank Billings, secretary. Chairman Dowling appointed, as members of the Executive Committee for the ensuing year, Frank Billings, chairman, A. R. Mitchell and Wendell Phillips.

Scientific Exhibit

Dr. Brown, chairman of the special committee of the Board on scientific exhibit, expressed satisfaction with the great improvement of the scientific exhibit at St. Louis, as compared with that of former years. He suggested that greater improvement may be brought about by continued vigilance and by the promotion of cooperation with the scientific sections. On motion, the special committee of the Board on scientific exhibit was reappointed, with Dr. Brown as chairman.

The Board adjourned sine die.

FRANK BILLINGS, Secretary of the Board.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. Samuel B. Hirschberg has resigned as superintendent of Mount Zion Hospital, San Francisco, effective, July 1.——Dr. Nils Roth Jeull, Santa Rosa, has been elected president of the Sonoma County Public Health Association. ——Dr. Robert A. Peers, Colfax, was elected president of the California Tuberculosis Association at the meeting recently held in Yosemite.

State Medical Meeting.—At the annual meeting of the Medical Society of the State of California, held in Yosemite Valley, May 15-18, under the presidency of Dr. John H. Graves, San Francisco, the following officers were elected for the ensuing year: president, Dr. Henry C. Brainerd, Los Angeles; president-elect, Dr. Thomas Clay Edwards, Salinas; vice presidents, Drs. Percy T. Magan, dean of the College of Medical Evangelists, Los Angeles, and William W. Cross, Jr., Fresno, and Dr. William E. Musgrave, San Francisco, was reelected secretary of the association.

CONNECTICUT

Home for Crippled Children.—Plans have been completed and work will be started in the near future on the new buildings for the Newington Home Corporation at Hartford. The legislature has provided $200,000 for the buildings. The physicians and surgeons of the city will give their services free.

DISTRICT OF COLUMBIA

New Home for Army School.—The U. S. Army Medical School, Washington, will have a new modern fireproof home in the Walter Reed General Hospital reservation within a year. The building is the initial step in the plans for a great medical center, to include the hospital, the medical school, the Army Medical Museum and the library. The sum of $500,000 has been appropriated by Congress for this purpose. The structure has been designed in the Georgian style of architecture, to correspond with the present hospital buildings. The first unit to be erected will be the south wing, for which plans have been completed.

Head of Oriental University Arrested.—A report in the New York *Evening Sun* states that Helmuth P. Holler, head of the Oriental University of Washington, was arrested recently by the Postoffice Department, charged with violating the postal regulations, but was released on a $3,000 bond to await trial. The Oriental University has carried on an extensive business in granting diplomas and degrees, chiefly in the Orient, the remarkable thing being the ease with which students were able to obtain them. The report states that a Chinese student succeeded in obtaining a degree merely by enclosing the fee for registration. Reports regarding the irregular distribution of diplomas have at various times been received from France, Germany and Switzerland.

Smithsonian Institution to House Public Health Exhibit.—The National Committee on Exhibits Showing Advances in Sanitary Science has recently been formed in Washington, for the purpose of collecting and preparing material for a public health exhibit in the Capitol. The members of the committee include: Surg.-Gen. Hugh S. Cumming, U. S. Public Health Service, chairman; Dr. D. B. Armstrong, National Health Council; Surg.-Gen. M. W. Ireland, M. C., U. S. Army; Dr. Victor C. Vaughan, National Research Council; Dr. C. D. Walcott, Smithsonian Institution, and James A. Tobey, National Health Council, secretary. Space for the proposed exhibit has been placed at the disposal of the committee by the Smithsonian Institution, which, it is stated, is visited by more than half a million persons annually. Plans are under way to install exhibit material secured from official and voluntary health agencies. The secretary's office is in the national headquarters of the American Red Cross at Washington.

FLORIDA

Physician Shot.—Dr. John H. Cox, Sampson City, was shot through the chest and seriously injured, May 10, by a section foreman of the Georgia and Florida Railroad, who was intoxicated. Dr. Cox, who is 70 years of age, is in a serious condition.

ILLINOIS

Sanatorium Being Built.—One of the buildings of the Sunnybrook Farm Sanitarium at Ingleside, which was recently destroyed by fire, is being rebuilt, and will soon be ready for use.

Murder Charge Dropped.—It is reported that the state has dropped the case against Dr. Robert X. McCracken, East St. Louis, ex-coroner of St. Clair County, who was charged with the murder, on January 9, of Mrs. Clara Richwine and her father-in-law.

Personal.—Dr. Robert I. Law, Galesburg, was elected medical director of the Illinois department of the G. A. R. at its fifty-sixth annual encampment at Alton, May 15-20. Dr. Edward P. Bartlett, Springfield, was chosen commander of the Illinois department.

Narcotic Law Violated.—John H. Love, owner of a drug store in Johnston City; Herman Roberts, a druggist of Marion, and Richard H. Mampton, Carterville, were each fined $150 and costs, May 11, when they pleaded guilty to violation of the Harrison Narcotic Law, it is reported. The druggists, it is alleged, filled prescriptions for James Jerods, now in the penitentiary, who admitted forging the name of Dr. J. B. Miller, Carterville, to obtain the drug.

Better Baby Conference and Health Demonstration.—Arrangements have been completed for carrying out a better baby conference and public health exhibit demonstration in connection with the Trans-Mississippi Exposition and Pageant of Progress which will be held in Rock Island, from June 24 to July 4, inclusive. For this purpose, the management of the exposition has secured the use of the health educational exhibit equipment owned by the state department of public health. The latter has also agreed to furnish the professional services of a physician and nurse in connection with the organization and direction of the better baby conference.

Chicago

War Hospital Officers Meet.—Members of the staff of Evacuation Hospital No. 110 were cited for their work in Cantigney, Chateau Thierry and Meuse-Argonne, at the sixth reunion held in Chicago, May 26, at the Drake Hotel.

Loyola University Recognized.—A report from Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, states that recognition has been granted by the board to the Loyola University School of Medicine, Chicago, and that graduates of 1920 and succeeding years are eligible to take examinations held by that board.——The secretary of the Kentucky State Board of Health states that, at a recent meeting of the board, it was voted to grant recognition to the Loyola University School of Medicine.

Mental Hygiene Campaign.—At a meeting of Chicagoans at the Casino Club, May 31, under the chairmanship of Dr. Frank Billings, president of the Illinois State Medical Society, a ten-day campaign was instituted by the Illinois Society of Mental Hygiene to collect funds to be used to fight nervous and mental diseases and feeblemindedness, on the same basis as the national campaign against tuberculosis was carried on. Drs. Haven Emerson, New York; Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, and Dr. Victor V. Anderson were among the speakers.

INDIANA

Hospital News.—Sunnyside Sanatorium, Indianapolis, has started construction on three new units, one of which is a children's building for the accommodation of forty-four patients, and two units of twenty-four beds for adult patients. Within a few weeks, construction will be started on the erection of a large unit to be used exclusively for colored patients.

KENTUCKY

Son Will Succeed Dr. McCormack.—The Association of State and Provincial Health Authorities, at a meeting in Washington, D. C., recently, elected Dr. Arthur T. McCormack secretary of the state board of health, as head of the association of which his father, the late Dr. J. N. McCormack, was first president. Resolutions of regret on the death of Dr. McCormack were adopted at the meeting.

County Society Elections.—At the annual meeting of the Allen County Medical Society, Dr. Elonzo A. Whitlow was elected president, and Dr. John E. Pace, secretary-treasurer.——The Ballard County Medical Society elected Dr. William A. Ashbrook president, and Dr. George L. Thompson, secretary-treasurer.——Dr. O. P. Nuckols was elected president of the Bell County Medical Society, recently, and Dr. John G. Foley, secretary-treasurer.——At the meeting of the Campbell-Kenton Medical Society held recently Dr. James A. Davis was elected president, and Dr. J. H. Helmstedt, secretary.

MARYLAND

Site for Nurses' Home Acquired.—Plans for the expansion of the Maryland General Hospital have been advanced by the acquisition of property to be used as a site for a nurses' home. The new building, when completed, will provide quarters for 100 nurses and will enlarge the hospital's present facilities by fifty beds.

Graduate Course Renewed.—The Washington County Medical Society has revived the graduate courses which were held annually before the war. The course this year was connected with the medical extension work of the University of Maryland. Drs. Sidney Miller, Gordon Wilson and Charles Austrian were among the instructors.

Memorial to Dr. Martin.—As a memorial to the late Dr. Frank Martin, former professor of surgery at the University of Maryland Medical School, members of the class of 1907 have voted to donate a modern operating table, with its accompanying equipment, to the University Hospital. Members of the class gathered in Baltimore, May 30, for a three day reunion in celebration of the fifteenth anniversary of their graduation.

MICHIGAN

Physician Elected Mayor.—Dr. Guy C. Conkle has been elected mayor of Boyne City.

Wayne County Medical Society.—At the annual meeting of the society held in Detroit, May 15, Dr. William M. Donald was elected president; Dr. William J. Stapleton, vice president, and Dr. Bruce C. Lockwood, secretary (reelected).

Hospital News.—The Henry Ford Hospital, Detroit, recently opened twenty-four additional private rooms, with accommodations for 144 patients. It will, from time to time, open additional units of twenty-four rooms each. When all the wings are opened, the hospital will have a total capacity of 560 beds.——Plans have been made for a 200-bed hospital for mental cases in Michigan former service men, to be built in Ann Arbor.——Ground will be broken in the near future for a $250,000 sanatorium at the St. Joseph Hospital, which will double the capacity of the institution.

MISSOURI

State Commissioner Arrested.—Press dispatches state that Mr. Charles F. Prather, who was appointed state food and drug commissioner to succeed Dr. Edward L. Barnhouse, Ironton, was recently arrested for violation of the state prohibition law. He and his brother were charged with operating a still.

Memorial Service to Physician.—Memorial services of the late Dr. Young H. Bond, who founded the Marion-Sims College of Medicine in 1890, now the St. Louis University School of Medicine, were held at the University, May 25. The Rev. W. B. Rodgers, former president of the university, gave an address.

Personal. — Dr. Evarts A. Graham, professor of surgery, Washington University Medical School, St. Louis, has been appointed a member of a commission to investigate the dispensary system in England.——Drs. Edward I. Baird, Elmer L. Parker and John E. Musgrave have been appointed members of the board of health of Excelsior Springs.——Dr. Joseph Erlanger, professor of physiology, Washington University Medical School, has been appointed a member of the medical fellowship board of the National Research Council.

New Medical University Building.—Plans for the new medical building at the state university, Columbia, have been completed, and bids are being received. In the new addition, the curators have in mind three things: 1. To equalize laboratory space in the several fundamental branches so that all the major laboratories will accommodate as many students as are now accommodated in the largest of the laboratories, namely, the anatomical. For some time the school has been able to enroll more students in the beginning courses in anatomy than could possibly be accommodated in the courses of the second year. 2. To provide adequate space for the medical library. 3. To increase materially the space devoted to advanced and research work. All the laboratory departments will profit both in point of increased space and added facilities for the research laboratories, and a very satisfactory arrangement has been made for a new library. There will be a small journal room and a reading and stack room combined, the stack room having a capacity of 1,500 volumes. This will house only the departmental library of the school of medicine, which is made up of such reference material as is in more or less constant use by students. A small amount of space in the second floor will be used for administrative purposes and for a women's reading and rest room. While the addition to the medical building will not take care of a material increase in the enrolment in the school of medicine, it will greatly relieve the trying situation that has developed in recent years owing to overcrowding in all the laboratories.

NORTH CAROLINA

Endowment for Medical School.—It is reported that Wake Forest College School of Medicine, Wake Forest, is entitled to receive the principal of a trust fund, amounting to $1,375,000, which was created in 1892 by Jabez A. Bostwick, a director of the Standard Oil Company.

Physician Decorated by France.—Dr. Alonzo Myers, Charlotte, was decorated with the Médaille d'Honneur des Epidémies at Camp Bragg, Fayetteville, May 20, by General Pershing. This is the second medal Major Myers has received from the French government for his services during the World War.

Medical Meeting.—The first annual meeting of the Caldwell-Catawba-Lincoln County Medical Society was held at Lincolnton, May 9, under the presidency of Dr. L. A. Crowell. The following officers were elected for the ensuing year: president, Dr. Jacob H. Shuford, Hickory; vice president, Dr. M. Caroline McNairy, Lenoir, and secretary-treasurer, Dr. William P. Speas, Hickory.

OHIO

Cincinnati Academy of Medicine.—At the annual election of officers of the academy, May 22, Dr. Albert H. Freiberg, professor of orthopedic surgery at the University of Cincinnati College of Medicine, was elected president; Dr. Alexander G. Drury, treasurer, and Dr. L. Howard Schriver, secretary.

Suit Over Death of Physician.—Mrs. Rogers, Columbus, lost her suit for $250,000 damages against the H. K. Mulford Company, manufacturing chemists, charging that the death of her husband, Dr. William King Rogers, in February, 1920, resulted from septicemia following inoculation with an anti-influenza serum manufactured by this company. The serum, it was asserted, was defective. In a special finding, the jury decided for the defendants, as eighteen other persons had been treated out of the same vial with no ill effects.

PENNSYLVANIA

Philadelphia

Diphtheria Death Rate Cut.—The death rate from diphtheria in Philadelphia, in 1921, was 17 per hundred thousand, according to C. Lincoln Furbush, director of public health, who points out that in 1896 the death rate from this disease was 96 per hundred thousand. The remarkable reduction has been achieved through the distribution of antitoxin in the last twenty-five years and through other preventive measures. In order to overcome those factors which are responsible for cases not easily reached by the methods used heretofore, a Schick test method of eliminationg diphtheria has been advocated.

To Retire from University Faculty.—It is announced that Dr. John B. Deaver and Dr. John Marshall will retire from the active teaching staff of the University of Pennsylvania, July 1. The retirement of these physicians is necessitated by the age rule of the institution, which fixed the age of retirement from 65 to 68 years. Retirement of a member of the teaching staff at 68 is mandatory, and between 65 and 68, optional. Dr. Deaver is John Rhea Barton professor of surgery, while Dr. Marshall occupied the chair of chemistry and toxicology, both physicians having been associated with the University for more than forty years.

Medical Alumni Banquets.—The alumni banquets of the Jefferson and Hahnemann Medical colleges were held at the Bellevue-Stratford Hotel, June 1. For the first time in the history of either institution, members of the alumni associations of Hahnemann Medical College and Jefferson Medical College publicly exchanged wishes of "fellowship" and "good will." Col. Edward Martin, state commissioner of health, addressed the Hahnemann banquet, and Dr. Isidore Strittmatter was toastmaster at the Jefferson dinner.——The senior class of the medical department of the University of Pennsylvania held their banquet, June 2. Dr. John B. Deaver presided at the dinner. Dr. William Pepper, dean of the school, Dr. B. H. Lucke, Dr. John G. Clark and Dr. George Norris were among the speakers.

PHILIPPINE ISLANDS

Philippine Pediatrician in the United States. — Dr. José Albert, member of the superior board of health of the Philippine Islands, professor of pediatrics and chief of clinics of the University of the Philippines Medical School, is now in this country. He is a member of the Philippine Independence Commission, which will appear before President Harding and congressional committees in this connection. Dr. Albert, with his two daughters, will remain about two months in this country, visiting clinics and schools in Chicago, Baltimore, Washington and New York, and in New England.

SOUTH CAROLINA

College Dean Honored.—The degree of doctor of laws has been conferred on Dr. Robert Wilson, Jr., dean of the Medical College of the State of South Carolina, Charleston, by the regents of the college.

Hospital News.—The Charleston County Tuberculosis Association has purchased the old government remount station, near Charleston, and will use it as a temporary place to house patients with more advanced tuberculosis.

Society Reorganized.—The Marion County Medical Society was reorganized, April 11, with the following officers: president, Dr. Enoch M. Dibble, Marion; vice president, Dr. Cladius F. Bullock, Nichols, and secretary, Dr. Frank L. Martin, Mullins. The meeting was held at Mullins.

TENNESSEE

Physician Pardoned.—It is announced that Dr. William T. Puckett, Whiteside, has been pardoned by Governor Taylor. Dr. Puckett was sentenced to serve from two to ten years in the penitentiary for voluntary manslaughter and has served since March, 1921.

Conviction for Dr. Chambers.—It is reported that Dr. C. D. Chambers, Michie, was convicted of second degree murder in the McNairy County Circuit County, May 20. Dr. Chambers was indicted for murder in the first degree for killing his cousin, Aug. 18, 1921.

Dinner to Drs. Campbell and Haase.—In recognition of the election of Dr. W. C. Campbell and Dr. Marcus Haase, of Tennessee, to the chairmanships of the Sections on Orthopedic Surgery and of Dermatology and Syphilology, respectively, the medical profession of Memphis tendered them a dinner on June 10. The medical profession of Memphis expressed itself as highly honored in receiving this recognition from the Fellows of the American Medical Association.

VIRGINIA

Permanent Diagnostic Clinics.—The Virginia Tuberculosis Association, which recently organized free diagnostic clinics throughout the state, is now arranging for a permanent organization in each county to deal with the tuberculosis problem. The association has a total of $33,000 left in the local treasuries from the proceeds of the Christmas seal sale for this purpose.

WEST VIRGINIA

Federal Mental Clinic.—A new federal clinic for the diagnosis and treatment of mentally deficient ex-service men has recently been completed at Huntington. This institution is a unit of the Huntington State Hospital, of which Dr. Lewis V. Guthrie is superintendent, and was erected at a cost of $80,000. The building will accommodate fifty patients. A new bakery has also been added to the hospital, with a capacity of 2,000 loaves daily.

WISCONSIN

Personal.—Dr. Walter C. Reineking, Statesan, resident physician at the Wisconsin State Sanatorium, has been appointed superintendent of the Rockford Municipal Sanatorium, Rockford, Ill.——Dr. Frank F. Bowman, Madison, has been appointed epidemiologist to the state board of health to succeed Dr. Isa F. Thompson, resigned.

Special Classes for the Mentally Defective.—Twenty-two cities in Wisconsin have organized classes in the public schools for mentally defective and subnormal children. These groups are organized both to secure the best possible education for these unfortunate children and to free other pupils from the drag on their work which these backward boys and girls necessitate with the same teacher handling all children. Many other cities are planning these classes.

CANADA

Western Ontario Academy of Medicine.—The final session of the academy for this year was held May 23. Dr. Hans O. Foucar, department of pediatrics, Mayo Foundation, Rochester, Minn., spoke on "Respiratory Manifestations in Lethargic Encephalitis in Children" and Dr. Wesley C. Bowers, Bellevue Hospital, New York, spoke on "Otitis Media from the Standpoint of the General Practitioner."

Public Health News.—Various methods of adulterating food formed the subject of an address delivered at a recent luncheon of the Rotary Club of London, Ont., by Dr. A. J. Slack of the London Institute of Public Health. Dr. Slack stated that a sample of milk which had been kept for more than three months in the institute at a temperature of from 78 to 98 F. persists in remaining sweet, it having been treated with formaldehyd by the milk vender.

Personal.—The University of Toronto recently offered the honorary degree of doctor of medicine to Dr. C. J. O. Hastings, medical officer of health for Toronto, Ont., in recognition of his services in the promotion of public health. The senate has also offered the honorary degree of doctor of science to Charles E. Saunders, Ph.D., dominion cerealist. ——Dr. J. H. McConnell, Toronto, has recently been appointed to the corporation of Trinity College, Toronto. Dr. McConnell succeeds the late Dr. George A. Bingham.

University News.—At the convocation of McMaster University, Toronto, held recently, honorary degrees of doctor of laws were conferred on Prof. Russell D. George, state geologist of Colorado, a former graduate, and Dr. C. L. Starr, surgeon of Toronto.——Included in the supplementary estimate of expenditures of the Province of Ontario were items of $400,000 for building purposes and $100,000 for the erection of a dining hall for women students at Toronto University.——Queen's University, Kingston, Ont., also received a grant of $10,600.

GENERAL

Statue to Relief Worker.—A statue has been erected in Hungary to James A. Pedlow, American Red Cross commissioner in Budapest. This is the first monument to a living American to be erected in Europe.

American Relief Worker Dies.—Harold F. Blandy, New York, recently died at Ufa, Russia, of typhus, aged 32. Mr. Blandy, who served with the British Air Service during the World War, had worked eight months with the American Relief Administration in Russia.

New Medical Periodical.—The American Academy of Applied Dental Science announces the issuance of the scientific quarterly, the *Journal of Oralogy* (health dentistry), for the promotion of closer cooperation between general medicine and dentistry and the stimulation of research into their common problems.

Mid-Western Association of Anesthetists.—At the annual meeting of this association held in St. Louis, B. H. Harms, D.D.S., Omaha, was elected president; Dr. Royal S. Adams, San Antonio, Texas, and Dr. Frances E. Haines, Chicago, vice presidents, and Dr. Morris H. Clark, Kansas City, Mo., secretary-treasurer.

Anesthetists Honor Physician.—At a banquet in St. Louis, given by the American Association of Anesthetists, Dr. James Tayloe Gwathmey, New York, was presented with a silver loving cup which read: "Founder and first president of the American Association of Anesthetists. For advance in the research, practice and literature of anesthesia, 1912-1922."

Air Service Medical Association.—The annual meeting of this association was held in St. Louis, May 23, under the presidency of Brig.-Gen. H. Wilmer, Washington, D. C.; Dr. Robert A. Strong, clinical professor of pediatrics, Tulane University, New Orleans, was elected president of the association and Major Raymond F. Longacre, New York, was reelected secretary-treasurer.

Medical Library Association of America.—At the annual meeting of the association at St. Louis, May 22-23, the following officers were elected for the ensuing year: president, Dr. Charles F. Wylde, Montreal, Can.; vice president, Dr. Henry B. Jacobs, Baltimore, and secretary-treasurer, Dr. John Ruhräh, Baltimore. The next meeting of the association will be held at McGill University, Montreal, September, 1923.

Bill to Pension Women War Workers.—All women employed by the Surgeon-General of the Army and the Navy as nurses, either under contract or otherwise, and all women employed by the American Red Cross in camps, hospitals or other institutions for the treatment of soldiers, during the Spanish-American War and the Philippine Insurrection, are entitled to a pension of $20 per month under the terms of a bill introduced in the Senate by Senator Calder.

American Association of Anesthetists.—At the annual meeting of the association in St. Louis, May 22-24, the following officers were elected for the ensuing year: president, Dr. Eleanor C. Seymour, Los Angeles; vice presidents, Drs. Frank L. Richardson, Boston, and Samuel Johnston, Toronto, Canada, and secretary-treasurer, Dr. F. H. McMechan, Avon Lake, Ohio. The next meeting will be held in San Francisco, in 1923, during the first two days of the Annual Session of the American Medical Association.

Bill Appropriating Money for Care of Lepers.—A bill appropriating the sum of $650,000 to be used in the care and treatment of persons afflicted with leprosy has been presented in the Senate by Senator Ransdell of Louisiana. Authority for the expenditure of the money is given the Secretary of Treasury through the U. S. Public Health Service. It is understood that the entire sum will be expended by the Public Health Service on the equipment and improvement of the leprosarium recently taken over by the government at Carville, La., and also in the cost of transportation in bringing lepers from various parts of the country to Carville for permanent treatment. The Ransdell bill was referred to the Senate Committee on Appropriations.

Research in Sex Problems.—The National Research Council has appointed a committee to take charge of a research program in sex problems. The purpose is to determine the status of scientific knowledge in this field, to determine what research is now in progress in this and other countries, to secure statements from physicians, educators and scientific workers as to the problems on which more data are needed, and to make a thorough survey of research facilities. An appropriation of $25,000 has been obtained to carry on this work after July 1. The committee is endeavoring to lay the foundation for a prolonged scientific inquiry. When sound physiologic bases are established, the work will be extended to include human problems. The members of the committee, according to the Social Hygiene Bulletin, June, 1922, are: Drs. R. M. Yerkes, W. B. Cannon, E. G. Conklin, K. B. Davis, T. W. Salmon and V. C. Vaughan.

Gift of Insurance Library.—The Prudential Insurance Company has made an unconditional gift of the public health, medical and scientific sections of its library to the Library of the Surgeon-General's Office, U. S. Army, Washington. This collection of books, documents and data is estimated to represent about 90 per cent. of the entire public health material of the civilized world, representing, approximately, between 50,000 and 100,000 volumes and publications. The books will be transferred gradually to Washington, for reinstallation on the main floor of the Surgeon-General's Library, where a large section is being cleared for the purpose, to be hereafter known as the statistical division. The library includes countless reprints, articles and clippings on medical and related subjects, brought together during the last thirty years by Dr. Frederick L. Hoffman, the Prudential statistician. The books are down to date; but, as far as practicable, the series of official reports is historically complete. The library should prove of immense value to students of problems of medicine and vital statistics, being arranged on the subject index plan, and readily accessible, while all possible facilities will be extended by the Surgeon-General's Library to students in search of information generally out of reach. It is hoped that the installation can be completed by the first of next year and that sufficient clerical assistance will be provided by Congress to secure not only the continuity of the reports, but also the purchase of the requisite accessions and the technical assistance in special mortality research. The gift has been approved by the Surgeon-General of the U. S. Army, Major Gen. M. W. Ireland, and the Secretary of War, John W. Weeks.

Bequests and Donations.—The following bequests and donations have recently been announced:

Methodist Episcopal Old People's Home, Chicago, $130,000, for a new hall, by the will of Mrs. G. F. Swift.

Association for the Aid of Crippled Children, New York City, $60,000, derived from public subscriptions at an open air fête.

Passavant Hospital, Pittsburgh, $50,000, by the will of Henry Alexander Laughlin, formerly of Pittsburgh.

Beth David Hospital, New York City, $40,000, from gifts received at the dedication ceremony.

St. Mary's Free Hospital for Children, New York City, $25,000 by the will of Mrs. Florence Lydig Sturgis.

Mercy Hospital, Philadelphia, the bulk of an estate valued at $6,750, for a free bed in memory of his mother, Martha West, by the late Josephus West.

Hospital for Diseases of the Chest and the Kensington Hospital for Women, Philadelphia, each $5,000, by the will of John E. Baird, who died recently in Honolulu.

Seaside Home for Invalid Children, Atlantic City, N. J., $5,000, by the will of Mary H. Jones.

Samaritan Hospital, Philadelphia, $1,200, collected by a crippled employee.

St. Joachim's Hospital, Watertown, $500, and St. Elizabeth's Hospital, Utica, N. Y., $1,000, by the will of Dr. Laurentine Rouchel.

Bethel Memorial Hospital, New York, $1,000 and the residue of her estate, under the will of Mrs. Mary E. P. King.

Methodist Home for the Aged, Philadelphia, and the Asbury Park (N. J.) Hospital, each $100, by the will of Margaret P. Field.

For a national tuberculosis hospital at Colorado Springs, Colo., a 21-acre site has been donated.

For a home for children suffering from heart disease, a large estate at White Plains has been donated by Martin and Arthur Zinn, as a memorial to Mrs. Mary Zinn. The home is under the supervision of a medical board.

University of South Dakota, a large and valuable medical library, consisting of 1,400 volumes, by the will of Dr. Frederick A. Spafford of Flanderau.

Marine Hospital, San Francisco, an amphitheater, by the Knights of Columbus.

LATIN AMERICA

Argentine Campaign Against Quacks.—The new Argentine criminal code which has been enforced since May 1, provides a penalty of from fifteen days to one year imprisonment for persons practicing medicine without proper training and license.

Personal.—A banquet has been tendered Dr. Carlos Lagos García by the medical force of the Hospital de Niños at Buenos Aires, of which he is the surgeon. His work, "Las Deformidades de la Sexualidad Humana," was awarded a medal and prize at the recent centennial celebration of the Academia de Medicina, as mentioned on page 1731. It is proposed to present him with a gold medal at the banquet.

Mexican Publications on Yellow Fever.—The Public Health Department of Mexico has published recently two popular pamphlets for use in its campaign against yellow fever. One contains instructions as to how yellow fever may be prevented and the other is on the rôle of *Chara foetida,* an alga, in preventing the development of the mosquito larva. ——According to a recent statement, so far there have been only five cases of yellow fever in Mexico during the present year.

FOREIGN

Cancer Research Institute in Netherlands India.—The *Nederlandsch Tijdschrift* relates that plans are under way for the cancer institute at Bandoeng, made possible by the Zuur legacy. It is to be connected with the already established hospital and medical laboratory.

Ophthalmological Society of the United Kingdom.—At the annual convention of this society held in London, May 11, the following officers were elected: president, Dr. A. Maitland Ramsay; vice presidents, Drs. J. H. Fisher, Sir John Parsons, Harold Grimsdale and Cyril Walker; secretaries, Drs. J. F. Cunningham and R. Foster Moore, and treasurer, Sir Arnold Lawson.

Reciprocity Proposed Between Spain and Germany.—The *Medicina Ibera* relates without comment that the German ambassador at Madrid has informed the Spanish government that conditions regulating the admission of foreign students to German universities have been modified recently. The applicant will be admitted, provided the university which he selects has room for him, and provided the country from which the student comes concedes the same privilege to students from Germany.

University Representatives Meet.—At a conference held in London, May 13, by representatives of the universities of the United Kingdom the following subjects were discussed: (1) the urgent need for the provision of enlarged opportunities for advanced study and research; (2) the increase of residential accommodation for undergraduate and other students; (3) specialization in certain subjects of study by certain universities, and (4) the organization of adult education as an integral part of the work of the universities.

Medical Newspaper.—A new departure has been made in Madrid, Spain, with the publication of *La Voz Médica,* a journal which in its makeup and treatment of subjects follows newspaper style. The second number is practically all devoted to different phases of Cajal's genius, most of the articles being by prominent lay writers. A cartoon of Cajal and an autograph appear on the center of the front page. The subscription price is five pesetas. The editor is Dr. A. del Busto, and the office address is Caracas 13, Madrid.

Cajal's Retirement.—Having reached the age limit, 70 years, on May 1, Prof. Ramón y Cajal was retired from his connection with the chair of histology and pathologic anatomy at the University of Madrid. Spain and Latin America are taking the lead in organizing a tribute to him, and among the early features of this is the Cajal number of the *Archivos de Medicina* of Madrid, which gives the complete list of his works. It fills eleven pages, a total of 247 articles and books, the first, his "Manual of Histology," dating from 1889. The *Siglo Médico* opened a subscription in honor of Cajal, and is publishing some of the letters that accompany the subscriptions.

Personal.—Prof. L. Michaelis of Berlin has been invited to lecture on physiologic chemistry at the Japanese University of Nagoya, and the Berlin University has given him a year's leave of absence for the purpose.——Professor Nonne of Hamburg has been asked to deliver a course of lectures at the University of Buenos Aires.——The *Münchener medizinische Wochenschrift* states that Privatdozent Capelle has accepted a call to the chair of surgery in the medical school at Asunción, Paraguay.——The *Liége Médical* reports that Professor Depage of Brussels, chief of the Hôpital de l'Océan during the war, has been appointed president of the League of Red Cross Societies.

International Bibliography on Industrial Hygiene.—The hygiene department of the International Labor Bureau proposes to organize a bibliography of all publications on occupational diseases and vocational hygiene. The International Labor Bureau consequently is appealing to all persons who are publishing articles on industrial and social medicine to send them a bibliographic reference of their work (name of writer, title of work, name, volume, page and date of the publication in which the work appeared), or better yet, send a reprint. The address is Hygiene Department, International Labor Bureau, Geneva, Switzerland. The bureau agrees to send its bibliography on industrial hygiene to all the collaborators.

Echegaray Prize to Cajal.—The Academy of Sciences at Madrid recently presented the prize founded in 1905 in memory of Echegaray to Ramón y Cajal. This prize is triennial, and the previous recipients have been Saavedra, the Prince of Monaco, Arrhenius and Torres Quevedo. The *Siglo Médico*, in commenting on the ceremony, quotes from Cajal's "Memories of My Life" that, in 1895, one of the members of the Academy of Sciences happened to visit Berlin, and Virchow asked him, "What is Cajal doing now? Is he continuing his interesting discoveries?"—the first time that the member had heard of Cajal. When he returned to Spain he was instrumental in having Cajal brought into the academy, so that, as Cajal says, "I had the singular privilege of having been nominated for membership in the Spanish Academy by Virchow."

Deaths in Other Countries

Dr. **James Middlemass,** lecturer in psychologic medicine at the College of Medicine, Newcastle, May 2, aged 59.——Dr. **C. Somerton Clark,** who served twenty years with the Punjab Mission of the Church Missionary Society in India, from splenic leukemia, in England, April 6.——**Sir Henry Davy,** formerly president of the Exeter Branch of the British Medical Association.——Dr. **Gustav Hamel,** in London.——Dr. **G. Falk,** a dermatologist of Munich.——Dr. **I. Rosanes,** chief of the surgical department of the Stephanie-Spital at Vienna for thirty-six years.——Dr. **Juan Azúa y Suárez,** professor of dermatology and syphilis at the University of Madrid, and a frequent contributor to the literature on these subjects.——Dr. **S. G. Vinaj,** professor of physical therapeutics at the University of Turin and author of numerous works on massage, hydrology, etc.——Dr. **M. Zacharias de Alvarenga** of S. Paulo, Brazil.——Dr. **G. De Vecchi,** hospital inspector at Milan, aged 67.——Dr. **C. V. Ditlevsen,** a Danish physician, who made a special study of dermatology in the Danish West Indies and the Congo.——Dr. **João Moniz Barreto de Aragão,** lieutenant-colonel in the Brazilian army.

CORRECTION

Dedication of Hospital.—In The Journal, May 27, page 1649, it was stated that the dedication ceremony of the Beth Israel Hospital was held May 14. This should have read Beth David Hospital.

Government Services

Army Appropriation Bill Passes Senate

The Army appropriation bill, reaching a total of $341,750,000, has passed the Senate in the record time of six hours, and is now in the hands of conferees from both houses for a final agreement on the various amendments. The bill as changed by the Senate provides for an army of 133,000 men and 12,530 officers. Additional appropriations were made by the Senate for expense of camps of instruction for the National Guard, the sum being increased from $3,000,000 to $9,500,000. The money for civilian military training camps is fixed at $1,800,000. An increase from $2,700,000 to $3,600,000 was accorded the members of the Officers' Reserve Corps for summer training purposes, and the appropriation for pay of reserve officers, called to active duty, was increased from $250,000 to $2,000,000. The measure as it finally passed the Senate provided for the reduction of the commissioned officers in the army now fixed at 17,000 to 12,530 through the medium of a plucking board of five general officers, who shall select the officers to be either retired or discharged from the army so as to bring the total down to 12,530 within five months from the date of passage of the act. According to information secured at the office of the Surgeon-General of the Army, this wholesale reduction of officers will not affect the Medical Corps to any considerable extent. The increase in the appropriations for summer training camps and for the Officers' Reserve Corps, if finally adopted, will also assure the holding of the regular summer training camps for medical reserve officers and members of the Medical Officers' Reserve Corps units in medical colleges of the country at Carlisle Barracks.

Foreign Letters

LONDON

(From Our Regular Correspondent)

London, May 15, 1922.

A Bread Bill

Before the war, a press campaign was carried on in favor of bread made from what was called "standard flour" (flour which contained the germ and pericarp of the wheat, unlike the ordinary white flour which was then used almost exclusively). Bakers, much against their will, produced what were called "standard loaves," which were not white, like ordinary bread, but of a darkish color. The appearance of these loaves was not so inviting as that of the white loaf, and the idea got about that the dark color was due to the addition of dirt and sweepings of the shop to the white flour. In spite of the campaign in which it was shown that standard bread was much superior as an article of diet, standard bread soon disappeared from the bakers' shops.

Some members of Parliament, among them Dr. Nathan Raw, have now introduced a bill to regulate the composition of flour milled as standard flour and of bread sold as standard bread. The object is to enable the public to know whether bread offered for sale contains the component parts of the wheat grain which are essential to nutrition, and "to encourage as far as possible the milling of wheaten flour and wheaten meal, and the consumption of wheaten bread in which such important parts are included. Medical research on vitamins is a new factor in support of the use of whole meal flour, especially for children. Yet, at the present time, only a small proportion of the bread sold contains the germ and other important nutritive elements in the wheat grain. The promoters of the bill assert that when such bread is the principal element in the diet of children, it is productive of debility, and development is arrested. The important clauses of the bill are as follows:

> Standard quality wheaten flour shall be made only from well-cleaned wheat, shall be straight-run, and shall contain the whole of the flour extractable from the wheat, with a quantity of the germ amounting to at least 1 per cent. of the total weight. Standard quality wheaten meal shall be made only from well-cleaned wheat, and shall contain the whole of the component parts of the wheat grain, excluding only such portion of the bran as will not pass through a fine wire sieve of 324 meshes to the square inch, with a quantity of the wheat germ amounting to at least three-fourths of 1 per cent. of the total weight. Standard quality wheaten bread shall be made either from standard quality wheaten flour or from standard quality wheaten meal, as described above.

Sir Thomas Browne: An Anthropological Study

Sir Arthur Keith, who has recently examined the skull of Sir Thomas Browne and also the extant portraits of him, discusses in a letter to the *Times* his racial origin. He was born in London in 1605. For several generations, his mother's people lived in Middlesex and Sussex. His father came from Cheshire, where his ancestors had held land for four generations at least, and from what we know of the population of that part of England, may well have been of the pre-Saxon or Welsh stock. Sir Arthur Keith thinks that he derived his chief bodily characteristics from his father's side. His complexion was dark, his hair dark brown. These features are more common in Wales than in any other part of Great Britain. His head was dolichocephalic, measuring 196 by 146 mm. (cranial index 74.5). A greater portion of the length of the head lay behind the auditory meatus than in front of them; whereas, in most persons today, it lies in front. His growing brain must have expanded backward much more than is common. As a result, the roof of his skull is low pitched, its highest point rising only 113 mm. above the auditory meatus. The forehead, therefore, was receding. A head of low pitch is common in Britain, particularly among the natives of the western counties. His face was rather wide in proportion to its length. His nose was narrow and long, its width in the skull being only 22 mm. and its length 53 mm. His lower jaw showed medium chin development; the distance between the angles was above the average—99 mm.

This type of face, and particularly the long narrow nose, is commonest among the natives of western Britain and again indicates a pre-Saxon lineage for the wise and mystic theological physician of Norwich. A point which Keith does not refer to is how frequently a non-Saxon strain can be traced in great English writers. A cast taken from the skull is of great interest. It shows that the temporal lobes are particularly well developed. This is in keeping with Browne's preeminent command of words and aptitude for languages, as well as his fondness for music. Such studies as this, Keith thinks, form the background of true biography. He hopes that physicians may win the sympathy of great minds in their desire to elucidate the nature of English genius by doing for them what he is certain Browne would have done for himself.

The "Journal of Scientific Instruments"

Under the title the *Journal of Scientific Instruments,* a new journal has appeared. It is issued by the Institute of Physics, because of the need of a journal dealing with methods of measurement and the construction and use of instruments. In Germany, there are four or five journals which cover this field, and one, which devotes itself entirely to scientific instruments, has been of great influence in emphasizing the importance of scientific methods in the study of technical and industrial problems. Research workers and manufacturers in this country have long felt the need of such a journal; for, although descriptions of instruments and methods of measurement are published in the specialized journals and in the transactions of societies, emphasis is not, as a rule, laid on the construction of the instruments, nor are detailed drawings generally reproduced. Still less is there an indication of possible applications of an instrument or method in a field other than that for which it was originally devised. The new journal is managed by a committee appointed by the Institute of Physics, on which the Department of Scientific and Industrial Research and the National Physical Laboratory were represented. A preliminary number of the journal has been published.

In a foreword, Sir J. J. Thomson, F.R.S., president of the Institute of Physics, points out that there is no publication in the English language which covers the ground of the journal. Descriptions of instruments and methods of measurement are given in journals devoted to particular branches of science; but, results being of primary importance, little space can be afforded to descriptions and detailed drawings of instruments. Instrumental methods are frequently valuable for researches of quite a different character from that for which they were developed, and workers who may be interested in apparatus as distinct from results may never see the publication in question, even if they know of its existence. The expenses of the journal will be considerable, as a high standard must be maintained; and it is doubtful whether receipts will cover expenditure, at any rate to begin with. Neither the Institute of Physics nor the Department of Scientific and Industrial Research has funds available to meet a deficit. Steps are being taken to raise a guarantee fund for the purpose. Before deciding to publish the journal, some indication as to its probable circulation will be necessary, and readers of the preliminary number are asked to signify their intention to subscribe.

It is proposed to issue the journal monthly, at the price of 2s. 6d. (about 60 cents). The annual subscription will be $7.50. It is estimated that with a circulation of 1,000, there will be a deficit of $10,000 per annum, and that a circulation of 3,000 will render the journal self-supporting. The preliminary number contains 36 pages of reading matter. The titles of a few of the articles will indicate the scope: "Instruments and Apparatus in Relation to Progress in Physiology," by A. V. Hill, F.R.S.; "The Use of a Reference Plate for Micrometric Measurement of Astronomical Photographs," by Sir Frank Dyson, F.R.S. (Astronomer Royal); "Two Machines for Rapidly Weighing Loads of a Few Milligrammes"; "The Measurement of the Internal Diameters of Transparent Tubes", and "The Production of Uniform Cylinders of Small Diameter."

The Smoke Evil

The Minister of Health has arranged for the appointment of one or more competent advisers to assist local authorities and manufacturers in combating the smoke evil. Legislation in regard to abatement of the smoke nuisance dates back as far as 1875; but it is so inadequate that the health authorities of the large cities have had to apply to Parliament for special powers to deal with the matter. Manufacturers are taking an increased interest in it and are learning that black smoke shows bad management and waste. But, in the domestic consumption of coal, there is little improvement. The old-fashioned smoke producing grate still keeps its place. However, the more general adoption of gas heating has led to some improvement, especially in London, where the asyphyxiating November fogs of former years have been replaced by something much milder.

The Cocain Habit

For some time addiction to cocain has been a prevalent vice. The death of an actress, after an orgy in which the drug played a part, first drew public attention to the extent of the vice. The sale of cocain, except for medicinal purposes, has been made penal, but this has not stopped traffic in the drug. Sale through pharmacists is, of course, controlled, but the drug is brought into the country from abroad by sailors and other persons, and secretly disposed of. Speaking at a dinner of the Pharmaceutical Society, the Home Secretary, after thanking the society for the help it had given in the administration of the Dangerous Drugs Act, pointed out how difficult it was for the police to detect the importation of drugs, such as cocain, while unregulated and unrestricted production was allowed in other countries. We must look to international agreements for restriction of production. The suggestion has also been made that cocain addicts should be prosecuted with the same rigor as the agents from whom they obtain their supplies. Under the existing law, they, of course, are prosecuted when found in the possession of the drug. In one case, a young man was sent to jail for six months. He felt that the sentence was very hard, but on his release he was grateful, for the enforced abstention from the drug had cured him of the habit.

PARIS

(From Our Regular Correspondent)

May 19, 1922.

International Intellectual Cooperation

Monsieur Léon Bourgeois submitted a report recently to the League of Nations, concerning questions on international intellectual cooperation. At the suggestion of the French government it was decided, at the second meeting of the League, to refer this matter to the council of the League, and eleven members were appointed on a commission which should include twelve members, the last seat being reserved for an American scientist. The commission at the present time is composed of the following members: Professor Banerjee, University of Calcutta; Prof. Henri Bergson, College of France; Miss Bonnevie, University of Christiania; Professor de Castro, University of Rio de Janeiro; Mme. Curie, University of Paris and University of Warsaw; J. Destrée, Royal Academy of Belgium; Professor Einstein, University of Berlin; Prof. G. A. Murray, Oxford University; Professor de Reynold, University of Berne; Professor Ruffini, University of Turin, and Prof. de Torre-Suevedo, University of Madrid. While the council left the members of the commission free to plan their own program, it is expected that it will include a consideration of the three following topics: (1) possibilities of encouraging and improving the organization of scientific research by means of congresses, commissions and institutes; (2) the international relations between universities, and means for the organization of an international bureau of universities, and possibly an international university; (3) international organization of scientific bibliography, and exchange of scientific publications.

Inauguration of the Florence Nightingale School

The inauguration of the Florence Nightingale School took place recently at Talence, near Bordeaux. During the ceremony, a message from Hon. Myron T. Herrick was read by Mr. Jaekel, United States consul at Bordeaux. The general secretary of the prefecture, the general commanding the eighteenth army corps, the mayor of Bordeaux, notables in the medical world, and the president and members of the administrative committee of the Protestant Sanatorium were present at the inauguration of the school, which is annexed to the Protestant Sanatorium of Bordeaux. It was founded in memory of American nurses, nearly three hundred in number, who died on the French front during the war.

The Practice of Medicine by Students

The law of Nov. 30, 1892, concerning the practice of medicine has been modified. This modification concerns interns (they are not as a rule doctors of medicine) and medical students. Article 6 of the old law read:

> Interns of hospitals and asylums appointed after examination and having twelve credits (which means three years of medical study), and medical students having finished their course can be authorized to practice medicine during an epidemic or to replace physicians.

This article has been modified as follows:

> Interns of hospitals and asylums appointed after examination and having sixteen credits (corresponding to four years of medical study), and medical students having finished their course and consequently having twenty credits (five years of study) can be authorized to practice medicine in case of epidemic or to replace physicians.

As in the past, this authorization is given by the prefect of the department and is limited to three months; it is renewable under the same conditions. However, students who are still under the old law of four years of study (sixteen credits), can obtain the authorization as formerly, when they get their sixteen credits, or at least twelve, if they are interns.

Monument Erected to Lucas-Championnière

The unveiling of the monument erected to the memory of Lucas-Championnière, who died about ten years ago, was held, May 14, in the courtyard of the Hôtel-Dieu. He introduced in France antiseptic methods in modern surgery. The ceremony was presided over by the minister of hygiene. Speeches were made by Prof. Simpson Hendley, of London, Professor Depage, of Brussels, Professor Hartmann, in the name of the Academy of Medicine and the Hôtel-Dieu, and by Dr. Bazy, for the Academy of Science. They spoke about the fight of Lucas-Championnière in favor of antisepsis, and of his pioneer work in the resection of the knee, preventive trephination, the treatment of fractures by massage and early mobilization, the radical cure of hernia, etc. The monument is the work of the sculptor Paul Richer.

BERLIN

(From Our Regular Correspondent)

May 10, 1922.

Congress of German Surgical Association

In April, the Deutsche Gesellschaft für Chirurgie celebrated its semicentennial, presided over by Dr. Hildebrand, head professor of surgery in the University of Berlin. The first surgical congress was opened by B. von Langenbeck in April, 1872. In his opening address, Hildebrand referred to the great progress that surgery has made in the last fifty years. This forward movement is due, first, to the advances in pathologic anatomy, and secondly, to the development of diagnostic methods. Furthermore, the new teaching in regard to the interdependence of the organs and their products, and the doctrines of internal secretion and constitutional pathology have undermined the localistic conception of disease.

On the first day of the congress, the problem of general surgical infection and its treatment was discussed, chiefly by Lexer and Eden; Neufeld, director of the Berlin Institute for Infectious Diseases, and Klapp. Lexer distinguishes, in general surgical infection, two principal groups: bacterial infection and general toxic infection. These two forms of infection overlap, to a certain extent, but the distinction is a practical one. Then there are mixed types of the first and second groups, which were in the past referred to as septicopyemia. Fever is not necessarily the expression of a general infection but may be of a toxic nature (resorption fever). Changes in the clinical picture will establish the diagnosis. Demonstration of bacteria in the blood furnishes the final proof; the absence of bacteria points to the toxic type. If there are bacteria in the blood and the number is increasing, it is of little importance whether the augmentation takes place in the blood or whether new bacteria are being continually thrown into the blood stream from an outside focus. Lexer thinks that the active increase of bacteria in the blood is an established fact. It is worthy of note that the severest acute types of bacterial general infection may persist for some time without developing metastases. However, metastatic types are often less dangerous. There is a certain relationship between metastases and resorption fever —the resorption of bacteria.

General toxic infection may be divided into infection from animal toxins, infection from bacterial toxins and infection from so-called tissue toxins. An example of the first group is snake venom; of the second, tetanus, and of the third, the toxins associated with burns. A separation of bacterial toxins and tissue toxins is important. There are also transitional forms. Not all pathologic manifestations are traceable to bacterial toxins.

In this connection, a number of questions arise that still await solution; for example, whether the tissue toxins alone play an important rôle and to what extent they break down the defense measures of the organism. They often act after the manner of foreign protein, producing fatigue phenomena and similar manifestations. Injection of tissue toxins into animals causes local signs of inflammation. These phenomena often take on the form of anaphylactic symptoms. Possibly we have here an explanation of the vasotonic effect brought about by the parenteral administration of proteins. Also the action of shock may possibly often be explained by intoxication through decomposition products (toxinemia traumatica). In any event, a separation of the tissue and bacterial toxins must always be sought.

According to the statements of Eden with regard to inflammatory processes and wound infection from the standpoint of physical chemistry, the organism endeavors to counteract disturbances by sending to the part affected an increased supply of blood. Thus, hyperemia may bring about an adjustment in the inflamed area in which the physicochemical disturbances (for instance, in the form of an increased hydrogen-ion concentration and an augmented osmotic pressure) find expression. Therefore, we should not, in such cases, use substances intended to combat hyperemia—not even though they be bactericidal. The preservation of nerve conduction is important in connection with hyperemia, as is shown in roentgenograms depicting the healing of artificial fractures with and without severance of the sciatic nerve. If the nerve is not severed, there is hyperemia, and callus appears by the end of two weeks; otherwise, not until a much later period. We should employ substances that attract leukocytes instead of repelling them, as we need the leukocytes to heal the wounds. In this connection, the influence of electrolytes, through the rearrangement of ions, and also the conditions of osmotic pressure play an important part. In an acutely inflamed area; in the presence of marked hypertonia, edemas and impeded influx of blood, we must not employ such substances as increase the pressure of the tissue proteins due to the absorption of moisture; which accentuate metabolism, or bar the road for the elimination of injurious metabolism products, even though such a substance may exert a bactericidal action; otherwise, an incision will be required to relieve the tension and save the tissues.

In the case of chronic inflammations, on the other hand, an accentuation of the inflammatory processes will bring about an adjustment of the disturbances and lead to a cure. Physicochemical processes also exert a decisive influence in the destruction of bacteria and in the formation of toxins. Only with the possession of an exact knowledge of these processes and their bearing on the healing process in wounds will it be possible to discover a clinically useful disinfectant; and it must be borne in mind that the processes to be noted in a fresh wound are different from those in an inflamed wound, and that these, in turn, differ from the reactions in the test tube.

The Experimental Basis of Chemical Antisepsis

Neufeld emphasized that in recent years a transition from strict asepsis to antisepsis had taken place. A number of new substances have been brought forth. The main thing is to test these new substances by animal experimentation. It is not so much a question whether they destroy at once the spores of bacteria as it is whether they destroy the toxins and inhibit further bacterial growth. An endeavor must be made to find substances that act on anaerobes and streptococci at one and the same time.

Klapp discussed deep antisepsis. The old form of antisepsis was accomplished by destruction of the tissues. There was no great difference between antisepsis and corrosion. Surgical solution of chlorinated soda exerted its effect in the same manner. There is no antiseptic that leaves the tissues entirely intact.

Marriages

Charles E. Proshek, New Prague, Minn., to Miss Gabriel Preiss of Prague, Czechoslovakia, at Prague, April 1.

William Henry Jamieson, Ottawa, Ill., to Miss Haylord M. Norrick of Indiana, May 17, in Ottawa.

Elmer Henry Gramling, Milwaukee, to Miss Lila White of Manitowoc, Wis., April 21.

Ernest Gladstone, New York, to Miss Edith Bailey of New Haven, Conn., April 28.

Elmer Lincoln Mather, Akron, Ohio, to Miss Ruth Fairfield of Elkhart, Ind., May 7.

Ipolitas B. Bronushes to Miss Edna Marie Droppelman, both of Baltimore, May 23.

Vincent John O'Conor to Miss Katherine Carey, both of Chicago, June 1

Deaths

John Herbert Claiborne ⊕ New York; University of Virginia Department of Medicine, Charlottesville, Va., 1883; veteran of the Spanish-American War; member of the Medical Society of Virginia, American Academy of Ophthalmology and Oto-Laryngology, American Ophthalmological Society and New York Ophthalmological Society; formerly clinical instructor in surgery, department of ophthalmology, at the Cornell University Medical College, New York; ophthalmologist to the Flushing Hospital and Dispensary; died, May 27, aged 61, from heart disease.

Abraham Given Shortle ⊕ Albuquerque, N. M.; Baltimore Medical College, 1896; founder and president of the Albuquerque Sanatorium; member of the National Society for the Study and Prevention of Tuberculosis; formerly president of the Surgical and Medical Association of the Southwest and the New Mexico Antituberculosis Society; secretary of the New Mexico Public Health Society, and member of the American Climatological and Clinical Association; died, May 26, aged 41, from septicemia.

John James Andrews, Chicago; McGill University Faculty of Medicine, Montreal, 1903; L.R.C.P., L.R.C.S., Edinburgh, Scotland, L.F.P.S., Glasgow, Scotland, 1904; formerly clinical assistant surgeon and instructor of gynecology at Northwestern University Medical School, Chicago; at one time ship surgeon on boats plying between Montreal and Liverpool; served in the C. A. M. C., during the World War with the rank of captain; died, May 30, after a short illness, from streptococcemia, aged 42.

Daniel Buttrick Smith ⊕ Cleveland; Charity Hospital Medical College, Cleveland, 1867; formerly president of the board of education; at one time professor of diseases of the eye and ear, Cleveland College of Physicians and Surgeons; also lecturer at his alma mater and Western Reserve University Medical School; for fifty years on the staffs of the Lakeside, St. Vincent's, Charity, Cleveland City, and St. Luke's hospitals; died, May 19, aged 71.

William Monroe Lewis ⊕ Los Angeles; Bellevue Hospital Medical College, New York, 1879; founder and president of the Pacific Hospital; formerly adjunct professor of materia medica and therapeutics, and lecturer on pharmacy at the Kansas City University Medical Department; at one time president of the Los Angeles County Medical Society; died, May 19, aged 64, from heart disease.

Ephraim K. Browd, New York; Medical Department of the University of the City of New York, 1886; member of the Medical Society of the State of New York; gynecologist to the People's Hospital, and the New York Polyclinic Medical School and Hospital; died, May 17, aged 62.

John R. Robinson, Colorado Springs, Colo.; Jefferson Medical College, Philadelphia, 1882; member of the Colorado State Medical Society and the Colorado Ophthalmological Society; served two terms as mayor of Colorado Springs; died, May 10, at Saint Joseph, Mich., aged 66.

Hiram Eldridge Conley, Cannon Falls, Minn.; State University of Iowa College of Medicine, Iowa City, 1884; member of the Minnesota State Medical Association; president of the board of education; died suddenly, May 27, aged 66, from heart disease.

Elmer Brownell Beaudry, New York City; Medical Department of the University of the City of New York, 1883; member of the Medical Society of the State of New York; died, May 22, aged 61, at the Union Hospital of the Bronx, from pneumonia.

George Patrick Gill, Rockford, Ill.; Northwestern University Medical School, Chicago, 1906; member of the Illinois State Medical Society; served with the British R. A. M. C., during the World War; died, May 5, aged 39, from septicemia.

Thomas Walker Simpson, Napanee, Ont.; Victoria University Medical Department, Toronto, Ont., Canada, 1884; L.R.C.P., Edinburgh, Scotland, 1884; formerly mayor and town councilor of Napanee; died, May 15, from pneumonia.

William Radford Gray, Bellingham, Wash.; State University of Homeopathic Medicine, Iowa City, Ia., 1890; for eleven years a member of the board of education; died, May 15, aged 60, at St. Joseph's Hospital, from paresis.

⊕ Indicates "Fellow" of the American Medical Association.

John Starr Sappington, Fort Sam Houston, Texas; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1913; served in the M. C., U. S. Army, during the World War; died, May 7, at West Point, Ga., aged 31.

Frank Fuller Hutchins, Antwerp, N. Y.; Medical Department of the University of the City of New York, 1893; member of the Medical Society of the State of New York; died, April 18, aged 53, from pneumonia.

John W. Ellis, Killeen, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, Fort Worth, Texas, 1901; member of the State Medical Association of Texas; died, May 11, aged 44.

William J. Duff, Port Huron, Mich.; University of Michigan Medical School, Ann Arbor, 1885; member of the Michigan State Medical Society; city health officer; died, May 26, aged 65, from angina pectoris.

Thomas A. Matthews, Castalia, N. C.; University of Maryland School of Medicine, Baltimore, 1890; member of the Medical Society of the State of North Carolina; died, April 29, aged 54, following a long illness.

William J. K. Lavin, Walnuthill, Ky.; Medical Department, University of Louisville, Louisville, Ky., 1893; formerly county physician; also a druggist; died suddenly, May 8, aged 52, from acute indigestion.

Emerson E. Newcom, Blackford, Ky.; Medical Department, University of Louisville, Louisville, Ky., 1894; member of the Kentucky State Medical Association; died, March 10, aged 56, from chronic nephritis.

Emmett Grant Fish, Union Springs, N. Y.; Cornell University Medical College, New York, 1904; member of the Medical Society of the State of New York; died, May 9, aged 44, from pneumonia.

Thomas Edward Costain, Chicago; Chicago Homeopathic Medical College, 1892; professor of surgery at Hahnemann Medical College and Hospital of Chicago; died, May 31, aged 61, from uremia.

James Thomas Faulkner, Lansing, Kan.; Kansas City Medical College, Kansas City, Mo., 1903; member of the Kansas Medical Society; died, May 1, aged 45, from cerebral tuberculous meningitis.

George G. E. Neuber, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; died suddenly, May 25, aged 60, from heart disease, while visiting a patient.

Charles Burdett Forsyth ⊕ Alexandria Bay, N. Y.; Bellevue Hospital Medical College, New York, 1898; died, May 23, aged 45, at Ogdensburg, following an operation.

Chester Dexter Umberhine ⊕ Santa Fe, N. M.; Rush Medical College, Chicago, 1885; died, May 12, aged 59, at Frankfort, Ind., from heart disease and dropsy.

David Denis Clark, Decatur, Ind.; Fort Wayne College of Medicine, Fort Wayne, Ind., 1891; formerly coroner of Adams County; died, May 1, aged 56, from erysipelas.

James A. Moreland, Jamestown, Pa.; Medical Department of Western Reserve University, Cleveland, 1882; died suddenly, May 16, aged 66, from heart disease.

James H. Christie, North Madison, Ind.; Cincinnati College of Medicine and Surgery, 1870; died, May 7, aged 72, at Indianapolis, from cerebral hemorrhage.

Elmer John Farnham, Patten, Me.; Jefferson Medical College, Philadelphia, 1899; also a pharmacist; died suddenly, May 7, aged 48, from heart disease.

Theron Earl Roe, Tigerville, S. C.; College of Physicians and Surgeons, Baltimore, 1910; died suddenly, May 11, aged 34, from cerebral hemorrhage.

Albert Josiah Taylor, Orlando, Fla.; Medical School of Maine, Portland, 1889; died, May 19, aged 55, following an operation for cholelithiasis.

Claud B. Van Horn, Woodson, Texas; Central College of Physicians and Surgeons, Indianapolis, 1892; died recently, aged 65, from diabetes.

Frederick W. Schule, Philadelphia; St. Louis Medical College, St. Louis, 1878; formerly of Chicago; died, May 20, aged 77, from myocarditis.

Thomas R. Thornton, Lees Summit, Mo.; St. Louis Medical College, St. Louis, 1868; died, February 26, aged 78.

William F. O'Brien, Fairland, Ill. (licensed, Illinois, 1881); died, May 13, aged 72, from senility.

Albert N. Fouch, Williams, Calif. (licensed, California, 1776); died, May 6, aged 92.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

COLLECTION AGENCIES

Two Concerns About Which Physicians Have Complained

THE UNITED STATES NATIONAL ADJUSTMENT COMPANY

During the past two or three years The Journal has received complaints from physicians in various parts of the country relative to the methods of a collection agency calling itself the United States National Adjustment Company and doing business from the Transportation Building, 608 South Dearborn Street, Chicago.

A physician in Oklahoma reported that he and other physicians of the same town had given several accounts to this concern and had been unable to get answers to inquiries concerning collections. At that time The Journal's Bureau of Investigation took up the matter with the United States National Adjustment Company by telephone and the excuse offered was that the concern was extremely short of clerical help and was far behind in its correspondence. Later a physician from Arkansas made a similar complaint. The concern was again telephoned and a week later the physician notified us that he had, at last, received word from the agency, "with a check and an explanation." Still later a Michigan physician wrote that he had given accounts to this concern for collection and that, while he had written them three letters within a month, he had not had the courtesy of a reply to any of them. Recently a Baltimore physician wrote that he had given the United States National Adjustment Company a large number of bills to collect and that "while they have collected some, they have not yet sent me any cash."

We are now in receipt of a letter from a Virginia physician reading in part:

> "I am enclosing proof of collection of one of my accounts given to a Chicago agency who have apparently obtained many physicians' contracts in Virginia. I know of none to whom they have ever remitted. Is there any way by which the American Medical Association could aid in this matter? I can get no reply from them in this case."

With this letter the physician enclosed a letter from the United States National Adjustment Company to a previous patient acknowledging the receipt of a cheque paying in full the account that had been owed the physician. There was also enclosed a formal receipt covering the same amount. The dates of the letter and the receipt show that the patient paid the account to the United States National Adjustment Company in October, 1921; the physician to whom the account was owing writes on May 25, 1922, that the money has not yet been remitted to him.

In February of this year the United States National Adjustment Company called up The Journal office protesting against its criticisms made in letters written to physicians in answer to inquiries regarding the concern. The company was told that documentary evidence was on hand to prove every statement made. The concern then stated that it was able to produce overwhelming evidence of good service it had rendered physicians. It was suggested that such evidence be submitted and it would be given due weight. This was four months ago. So far nothing further has been heard from them!

THE NATIONAL ADJUSTING ASSOCIATION

The National Adjusting Association is a collection agency that seems to have its headquarters in Los Angeles and a branch at 37 West Van Buren Street, Chicago. Complaints regarding the methods of this concern have been received from physicians in Colorado, Illinois, Indiana and Kentucky. Two physicians from the same city in Kentucky have written recently that the local agent obtained accounts from them by stating that the National Adjusting Association did not use the correspondence method of collecting but put collectors in the field who did business by personal contact. After placing a number of bills for collection with the concern, both these physicians found that the agency was using form letters and similar methods of attempting to collect. Unfortunately, the physicians in each case had signed a contract which made no reference whatever to the methods employed in collection, but which did contain this clause:

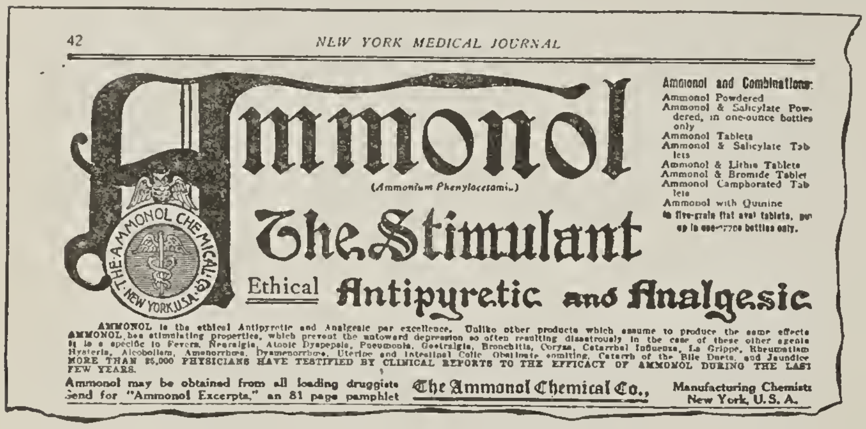
> "In event the undersigned should withdraw any claims after having assigned the same to said Association, the commissions thereon shall be paid to said Association the same as if said Association had collected such claims in full. . . ."

A clause of this kind in a contract would seem to put a premium on unsatisfactory service. All the collection concern would need to do would be to make the physician so disgusted with its methods as to cause him to desire to withdraw his bills from its hands. The company would thus get a lot of "easy" commissions.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Ammonol Tablets.—The Ammonol Chemical Company of New York City, shipped, between October, 1919, and June, 1920, a quantity of Ammonol Tablets from New York to Porto Rico. The product was misbranded. Physicians will remember that The Journal has exposed the unscientific character of this product many times. Ammonol was one of the first products taken up by the Council on Pharmacy and Chemistry and a report published in The Journal, June 3, 1905. The federal chemists reported that analysis of Ammonol Tablets showed that it contained acetanilid, ammonium carbonate, sodium bicarbonate and sodium phosphate. The article was declared misbranded because it was so labeled as to deceive the purchaser in that it did not show on the label the quantity or proportion of acetanilid contained therein. Furthermore, it was falsely and fraudulently claimed in or on the trade package that the article was of inestimable value and efficacy in cases of influenza, rheumatism, indigestion, alcoholism, painful menstruation, etc. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9822; issued Jan. 27, 1922.*]



42 NEW YORK MEDICAL JOURNAL

Ammonol

(Ammonium Phenylacetamide)

The Stimulant

Ethical Antipyretic and Analgesic

Ammonol and Combinations:
Ammonol Powdered
Ammonol & Salicylate Powdered, in one-ounce bottles only
Ammonol Tablets
Ammonol & Salicylate Tablets
Ammonol & Lithia Tablets
Ammonol & Bromide Tablets
Ammonol Camphorated Tablets
Ammonol with Quinine
In five-grain flat oval tablets, put up in one-ounce bottles only.

AMMONOL is the ethical Antipyretic and Analgesic par excellence. Unlike other products which assume to produce the same effects AMMONOL has stimulating properties, which prevent the untoward depression so often resulting disastrously in the case of these other agents. It is a specific in Fevers, Neuralgia, Atonic Dyspepsia, Pneumonia, Gastralgia, Bronchitis, Coryza, Catarrhal Influenza, La Grippe, Rheumatism, Hysteria, Alcoholism, Amenorrhoea, Dysmenorrhoea, Uterine and Intestinal Colic, Obstinate vomiting, Catarrh of the Bile Ducts, and Jaundice. MORE THAN 25,000 PHYSICIANS HAVE TESTIFIED BY CLINICAL REPORTS TO THE EFFICACY OF AMMONOL DURING THE LAST FEW YEARS.

Ammonol may be obtained from all leading druggists
Send for "Ammonol Excerpta," an 81 page pamphlet

The Ammonol Chemical Co., Manufacturing Chemists New York, U. S. A.

Johnson's Female Regulator.—The Logan Pharmacal Co., Philadelphia, and the France and New York Medicine Co., New York City, respectively, shipped between February, 1920, and February, 1921, from the states of Pennsylvania and New York, respectively, to the island of Porto Rico, a quantity of "Johnson's Female Regulator" which was misbranded. The federal chemists reported that analysis showed the product to consist of sugar-coated pills containing extracts of vegetable drugs. The product was falsely and fraudulently represented as an effective remedy for relieving pain during labor, and as efficacious in overcoming female debility, lack of ambition, tired feeling, suppression and other menstrual irregularities. In May and August, 1921, respectively, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9847; issued Jan. 27, 1922.*]

Fosfo-Ferrogen De Johnson.—A quantity of this product offered for sale and sold in the island of Porto Rico in July, 1920, was declared misbranded by the federal officials. The Bureau of Chemistry reported that the product contained caffein and compounds of iron, quinin, strychnin, arsenic and calcium. The package contained such claims as:

> "Cerebral Reconstituent Increases Physical and Intellectual Power For General Debility."
>
> "Valuable in the Treatment of Phthisis, Neurasthenia, Impotence, Nervousness and General Debility."

These and similar claims were declared false and fraudulent and, in May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9850; issued Jan. 27, 1922.*]

Bick's Nerve Tonic.—The Palestine Drug Co., St. Louis, Mo., shipped in April, 1919, a quantity of "Bick's Nerve Tonic" that was misbranded. The Bureau of Chemistry reported that analysis showed the product to consist of two preparations: (1) a brown tablet containing phosphorus, phosphates, zinc and iron and (2) a yellow pellet containing phosphate, iron and strychnin. The preparation was falsely and fraudulently claimed to be one of the best treatments known for "nervous rundown conditions" and for the treatment of weak and irritated conditions of the nervous system. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9839; issued Jan. 27, 1922.*]

Vitalo.—A quantity of this preparation was shipped in September, 1920, by the Allan-Pfeiffer Chemical Company, St. Louis, Mo., from Missouri to Louisiana. The Bureau of Chemistry reported that analysis showed the stuff to contain vegetable extractive matter, including damiana, nux vomica, sugar, alcohol and water. It was falsely and fraudulently labeled "A Nerve and Muscle Tonic," a "Remedy for General Weakness, Nervous Debility and for the Nerves, Brain and Muscles." In April, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9788; issued Jan. 11, 1922.*]

Correspondence

ALBERT ABRAMS

To the Editor:—From numerous lay sources we have been hearing that the medical profession, impelled by selfish motives, is unwilling properly to investigate the methods introduced by Dr. Albert Abrams, much the same in general tenor as expressed by Mr. Upton Sinclair in his letter published in The Journal, April 29, page 1334.

In the year 1917, when one of us was editor of the *California State Journal of Medicine* and the other was a member of the publication committee of the Medical Society of the State of California, we called on Dr. Abrams and proposed to him the following plan:

At the time to which we refer, Dr. Abrams claimed to be able to make immediate and accurate diagnoses, a drop of the patient's blood only being required, in these distinct conditions: hereditary syphilis, acquired syphilis, cancer, tuberculosis, pregnancy, streptococcus infection, and colon bacillus infections. He was unwilling, at that time, to commit himself beyond this group.

We offered to furnish him with blood of 200 patients from the University of California and Stanford University clinics, each of whom was known to be the subject, in uncomplicated form, of but one of the diseases noted. With the blood, Dr. Abrams was to be given the clinic number of the patient and to have access to both the patient and his record immediately after rendering the diagnosis in writing. His representative was to be allowed to be present when the blood was taken from the patient in order that no incorrect clinic number might be substituted.

The findings of the investigation were to be published in the *California State Journal of Medicine* as a report, without comment; the list of known diagnoses in the 200 cases to be accompanied by the diagnoses as established by Dr. Abrams from his examination of the blood. It was stated to Dr. Abrams that the *California State Journal of Medicine* would reserve the right to criticize the method editorially, such criticism to be favorable or adverse as the results of the investigation would warrant.

Dr. Abrams refused flat-footedly in any way to cooperate in such an investigation.

Sol. Hyman, M.D.,
Alfred C. Reed, M.D.,
San Francisco.

"DETOXIFYING DEVICES IN THE LIVING BODY"

To the Editor:—I was very much interested in the editorial on "Detoxifying Devices in the Living Body" (The Journal, May 6, p. 1390). We have been working along this line for a few years and find not only the immune reactions which you mentioned, but several more of a synthetic nature, which are extremely interesting. We also find that some of the reactions are quite specific for certain species. For example, we find that human beings frequently employ an entirely different reaction for the detoxication of a certain chemical substance (phenylacetic acid, in particular) than that found in the body of the dog under like circumstances.

Perhaps, most interesting of all, if not the most important, is the fact that the animal body, as shown by some of our recent results, can build out of waste nitrogen products (urea) the necessary aliphatic amino-acid for the detoxication of certain aromatic fatty acids. We find that the animal body can build glycocoll out of the urea fraction of urinary nitrogen. The human body can build the amino-acid glutamin (glutaminic acid) in addition to glycocoll. The chicken builds ornithin in the same way to protect itself against benzoic acid, and we believe that for protection against brombenzol the dog will, if furnished organic sulphur, be able to build cystin.

I believe that you have the right idea when you say that a great many immunity reactions are fairly simple and of a chemical nature. I think that the chemical defense mechanism of the body will yield some new light on the subject of immunity when better understood.

Some of our results were presented in a general way recently: "The Fate of Foreign Organic Compounds in the Animal Body" (*Physiological Reviews,* Vol. **2,** No. 2, 1922), "Synthesis of Amino Acids in the Animal Organism (*Journal of the American Chemical Society* **44**:618, 1922).

Carl P. Sherwin, M.D., New York.
Professor of Chemistry, Fordham University School of Medicine.

[Comment.—We are glad to refer to these researches of our correspondent, whose investigations have added to our knowledge of the detoxifying devices of the organism. In his latest contribution (Shipley and Sherwin: Synthesis of Amino Acids in Animal Organisms, I, Synthesis of Glycocoll and Glutamine in the Human Organism, *J. Am. Chem. Soc.* **44**:618 [March] 1922), it has been shown that man will synthesize glycocoll at the expense of urea, as do the lower animals. The synthesis of another amino-acid (glutamin) at the expense of urea nitrogen has also been demonstrated in the case of a man. The two amino-acids may be built simultaneously as readily as either compound alone. Thus, when 3 gm. of benzoic acid was fed to a healthy man, 92 per cent. of it was detoxicated by excretion in the conjugated form of benzoyl glycocoll (hippuric acid). Similarly, phenylacetic acid fed in even larger doses reappeared conjugated with glutamin. The experiments showed that neither benzoic nor phenylacetic acid when fed in moderate doses (from 3 to 10 gm.) to man acts as a stimulator of endogenous metabolism when the subject has been reduced practically to a state of endogenous protein catabolism. This is shown by the fact that the amount of total nitrogen excreted is not increased during the period of acid ingestion. It is also shown that neither glycocoll nor glutamin is built at the expense of "extra destroyed protein," but rather at the expense of one or more of the nitrogenous constituents of the urine, and of these only urea is affected to a marked degree. During the periods in which glycocoll and glutamin were being synthesized in the organism for the purpose of rendering the ingested acids less toxic, the urea nitrogen dropped from about 75 per cent. of the total nitrogen to 28 per cent., and during a subperiod of a certain day, to the extremely low value of 12 per cent. of the total nitrogen. It appears to be a demonstrated fact that an organic acid is detoxicated at the expense of the urea nitrogen, and an inorganic acid (hydrochloric acid) at the expense of the ammonia nitrogen.]

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FERRÁN'S TUBERCULOSIS VACCINE

To the Editor:—I should like to get some information on the antituberculosis vaccine and serum prepared by the Spanish physician, Dr. Ferrán. Some clinicians of South America and in this country have reported favorably on both products.

Viriato A. Fiallo, M.D., Santo Domingo, R. D.

Answer.—A description of Ferrán's vaccine was published in the Madrid Letter (The Journal, Oct. 4, 1919, p. 1074). The consensus is that this product is still in its experimental stage. The Spanish physiologist Dr. Verdes Montenegro has recently stated (*Archivos de Medicina, Cirugía y Especialidades,* May 6, 1922, p. viii) that Ferrán's conception of tuberculosis has been received with the respect due a scientist but with evident coldness. He adds that Ferrán's experiments were repeated by Calmette in France, and Mayoral in Spain, but unsuccessfully. So far there is little positive evidence as to the value of Ferrán's preparation. Ferrán himself (*España Médica,* April 10, 1922, p. 1) practically admits that the preventive action of his antialpha vaccine is still unproved.

Declining Death Rate Among Negroes.—A remarkable decline has taken place in the last decade in the mortality of negroes, says the *Statistical Bulletin,* Metropolitan Life Insurance Company, April, 1922. This company, which has more than 1,600,000 colored policy holders, reports the mortality of colored policy holders in 1911 as 17.5 per thousand, and in 1921, 13.2 per thousand, a drop of 25 per cent. The improvement, says the *Bulletin,* is not local but represents a very broad movement affecting virtually all areas. There are many factors acting favorably on the health of the negro, among which is the development of health activities in the South and Southwest. The economic status of negroes, which has risen since the war, is also a factor favoring the negroes' health.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 11. Sec., Eclec. Bd., Dr. James Edwin Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

District of Columbia: Washington, July 11. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Florida: Tampa, June 12-13. Sec., Dr. W. M. Rowlett, Tampa.

Hawaii: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Illinois: Chicago, June 26. Supt. of Registration, Mr. V. C. Michels.

Indiana: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

Michigan: Ann Arbor, June 13. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.

Missouri: St. Louis, June 12-15. Sec., Dr. Cortez F. Enloe, State House, Jefferson City.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

New Mexico: Santa Fe, July 10-11. Sec., Dr. R. E. McBride. Las Cruces.

North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 11. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

South Dakota: Waubay, July 18. Director, Dr. H. R. Kenaston, Bonesteel.

Tennessee: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. De Loach, 1230 Exchange Bldg., Memphis.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

Vermont: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Washington: Olympia, July 11. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 11. State Health Commissioner, Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Hawaii January Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 9-12, 1922. The examination covered 10 subjects and included 55 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1922)	80
McGill University		(1919) 75, (1920)	83.5

Vermont February Examination

Dr. W. Scott Nay, secretary, Vermont State Board of Medical Registration, reports the written examination held at Burlington, Feb. 14-16, 1922. The examination covered 12 subjects and included 90 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1921)	92.9
University of Vermont		(1920) 82.6, (1921)	92.7
McGill University		(1920)	92.8

Book Notices

Abdominal Pain. By Prof. Dr. Norbert Ortner, Chief of the Second Medical Clinic at the University of Vienna. Authorized translation by William A. Brams, M.D., and Dr. Alfred P. Luger, First Assistant, Second Medical Clinic, University of Vienna. Cloth. Price, $5. Pp. 362. New York: Rebman Company, 1922.

English readers are fortunate in being able to obtain a translation of Dr. Ortner's little volume on differential diagnosis of abdominal pain. The translator, an American, through considerable contact with Dr. Ortner, has rendered a valuable service to a large number of readers unable to read the original. The arrangement of the text is such that one has merely to localize pain to any one of the various regions of the abdomen, and then consult this book. He will find a catalogue of all the possible causes of pain arising there. The most important or frequent cause is mentioned first. This condition is then described in detail. If more than one organ or tissue which might give rise to pain lies in this region, diseases of each are given full consideration, following which is given differential diagnosis of all other conditions that might cause similar pain. These descriptions must, of necessity, be brief. The last chapter is devoted to a discussion of pain, according to radiation, effect of food, bowel movement, bodily movement, menstruation, etc. It is bewildering to note how many varieties and causes of abdominal pain there are, and then realize the enormous experience the writer must have had. One feels, as he reads this volume, that he is getting first hand information from a teacher, and not a rehash of other textbooks. Students, practitioners and specialists, either internists or surgeons, should alike profit by this new addition to the English medical armamentarium.

System der Neurose. Von Dr. Emil Kugler. Paper. Price, 84 marks. Pp. 188. Berlin: Urban & Schwarzenberg, 1922.

This is a comprehensive but somewhat ponderous exposition of the neuroses, based on a personal study of two thousand cases from all walks of life and observed in the course of thirty years. In the first part the neuroses are taken up according to their causation. The somatic causes are classified as: neuropathic constitution; anomalies of the ductless glands; migraine; anemia; malnutrition; vascular disorders; digestive disorders, and intoxications. The psychic causes are classified as: peculiar relation to surroundings; error in upbringing; sexuality in youth; marriage; climacterium; overwork; exaggerated notions of disease, and traumatic neuroses. In the second part a symptomatic classification is given: exhaustion neuroses; vascular neuroses; the neuroses of fear, and those of hypochondriasis, depression and hysteria. Throughout the work the author keeps close to the facts as observed in his numerous cases, and he has also made a profound study of the literature, with references to the more important articles conveniently arranged at the end of each chapter.

Exophthalmic Goitre. A Lecture Delivered at the Northeast London Post-Graduate College, April 27, 1921. By Walter Edmunds, M.A., M.Ch.Cantab., F.R.C.S., Consulting Surgeon to the Prince of Wales' General Hospital. Cloth. Price, 3 shillings 6 pence. Pp. 35, with 5 illustrations. London: Baillière, Tindall & Cox, 1921.

This is a lecture delivered to graduate students. It is decidedly discursive and incomplete. Pathology and etiology, clinical features and treatment, are each given a few pages. There is something concerning the history of the disease and a not infrequent expression of individual opinion with which one is not always in accord. The most interesting feature of the book is the pair of illustrations showing the parathyroids of the Indian rhinoceros, the specimens of which are in the Museum of the Royal College of Surgeons.

Society Proceedings

COMING MEETINGS

Arizona Medical Association, Prescott, June 14-15. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Colorado Congress of Ophthalmology and Oto-Laryngology, Denver, July 28-29. Drs. M. D. Brown and J. M. Shields, Metropolitan Bldg., Denver, Secretary.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Massachusetts Medical Society, Boston, June 13-14. Dr. W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston, Secretary.
Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

AMERICAN PEDIATRIC SOCIETY

Thirty-Fourth Annual Meeting, held in Washington, D. C., May 1-3, 1922

(Concluded from page 1751)

The Basal Metabolism of Prematurity

DRS. FRITZ B. TALBOT and WARREN SISSON, MARGARET E. MORIARTY and ALICE J. DALRYMPLE, Boston: The seven of twenty-two prematures studied by us in relation to caloric intake and weight curve were organically sound but had the characteristic appearance of premature infants, and, so far as we have been able to ascertain, were prematurely born from one to two months. They had a high pulse rate and an unstable temperature, and were too weak to nurse the breast at first. They were consequently fed by a Breck feeder or a tube, and the precautions usually taken with the new-born were carried out. There was no more variation in the metabolism findings previously obtained in the studies of new-born infants. The caloric intake per kilogram of weight was high. The basal metabolism, on the other hand, was strikingly low, no matter how it was charted. This low metabolism seems to be dependent on the fact that there is a small amount of active heat-forming tissue in these incompletely developed infants. This evidence is contrary to the generally accepted belief that the small subjects with relatively large body surface produce a more uniform amount of heat per unit of body surface than do larger subjects. Premature infants are so protected with blankets and hot water bottles that an excessive loss of heat is prevented. These infants are unable to compensate for such a loss of heat, as evidenced by the subnormal temperature which results from deprivation of external warmth. The infants did not gain weight until they were able to digest close to 200 calories in the day. The only food that was assimilated completely to accomplish this was human milk. It was also found that a relatively large proportion of the food intake goes into new body tissue. A large excess of caloric intake over the basal is necessary because of the relatively greater amount of growth essential for the normal development of these babies.

DISCUSSION

DR. JULIUS H. HESS, Chicago: The important thing in these premature infants is to give sufficient fluids. We have found it impossible to give anything like the caloric needs during the first week or two, but unless we give from one seventh to one eighth the body weight in total fluids the babies do not do well. The amount of fluid makes a surprising difference in the quantity of breast milk that they can metabolize, and a surprising difference in the results.

Celiac Disease

DR. ROOD TAYLOR, Minneapolis: Of the seven cases included in this study, the disease was preceded in six by a long period of malfeeding, and in four by a definite parenteral infection. Gastric achlorhydria was present in five cases in which the stomach contents were examined. The duodenal juice was examined in three cases, and a pathologic pigment, urobilinogen, was found in one case. This is evidence of a diffuse pathologic condition in the liver. In a second case there was a complicating Banti's disease; in a third case, leucin and tyrosin were present in the urine, and in all the patients the liver was smaller than normal. The duodenal juice in all cases contained bile salts and starch and protein splitting ferments. Examination of the stools in four cases revealed fairly good fat splitting. Data are also included which afford evidence of the considerable therapeutic efficacy of lactic acid milk and dextrose in the treatment of this disease.

Indications for Tonsillectomy in Infancy and Childhood

DR. HENRY HEIMAN, New York: The indiscriminate removal of tonsils should be condemned. If obstructive symptoms are present with evidence of high arched palate as the cause of obstruction, the adenoids should be removed. If there is persistent nasal discharge that does not yield to the usual therapeutic measures and in the absence of sinusitis, adenoidectomy should be performed. Tonsillectomy is indicated if the tonsils are sufficiently large to cause obstruction, difficulty in breathing or swallowing; if the frequent occurrence of tonsillitis has produced definite disease in the tonsils; if there are recurrent accumulations of cheesy material in the crypts of the tonsils, or if on pressure this may be extruded from the tonsils, with the presence of foul odor and symptoms of toxic absorption; and in cases of persistent cervical adenitis following tonsillitis whether of pyogenic or tuberculous origin. Each case must be studied individually, and the advantages and risks considered before operation. Tonsillitis alone or when associated with other conditions is usually but a manifestation of systemic infection. If the infection becomes generalized, it occurs in spite of the tonsil, not because of it.

DISCUSSION

DR. EDWIN H. PLACE, Boston: The evidence as to the protective function of the tonsil is open to some question. There is some evidence that the tonsils are the point of attack in scarlet fever. If the tonsils are removed, the temperature drops by crisis, and the disease continues in an extremely mild form. The evidence is as yet not such that we should say that the tonsils should come out in scarlet fever; but as to the protective function of the tonsils, the evidence, in my opinion, is the other way.

DR. H. M. MCCLANAHAN, Omaha: If a child has a high arched palate, the removal of the adenoids does not correct the trouble. In Omaha a wave of tonsillectomy beyond belief has passed over the city. The family physician or the pediatrician should decide whether the tonsils should be removed. When there is cervical adenitis, rheumatism or an infectious process, whatever may be the function of the tonsils, they are no longer performing it, and should be removed.

DR. LAWRENCE T. ROYSTER, Norfolk: In Virginia, one or more laryngologists with nurses and an anesthetist hold clinics in rural communities and operate on all children rounded up for this purpose. These cases are passed on by nurses. They are simply enlarged tonsils or appear to be so to the nurse. In the absence of any distinctive symptoms, an enlarged tonsil is not necessarily an indication for operation. No child should be subjected to the risk of tonsillectomy until examined for definite indications.

DR. CHARLES HERRMAN, New York: Formerly I was a medical school inspector. We were expected to find that from 20 to 25 per cent. of school children had enlarged tonsils; if a smaller number was recorded, it was thought that the examinations were not sufficiently careful. The school nurse then made repeated visits to the parents until treatment was given. The result was that a certain number of children were subjected to tonsillectomy in whom the operation was not necessary. If I understood correctly, Dr. Heiman stated that the presence of a high arched palate and a sinusitis were contraindications to operative interference. Though persons with a high arched palate cannot be entirely relieved of their obstructed nasal breathing by operative procedures, they certainly can be improved; the same holds true of persistent nasal discharge and sinusitis.

Dr. Isaac A. Abt, Chicago: If there is a reasonable doubt after mature deliberation, and after a laryngologist and a general practitioner or a pediatrician have studied the case, the child should be given the benefit of the doubt and the tonsils should be removed.

Study of Brain Tumors in Young Children

Drs. Frederic H. Bartlett and Martha Wollstein, New York: Among 4,563 necropsy records at the Babies' Hospital, there were nine cases of neoplasm of the brain, an incidence of 0.2 per cent. The ages ranged from 2 weeks to 3 years. In five cases the neoplasm was located in the cerebellum, and two in the cerebrum. The five infratentorial tumors involved the vermis and extended into one lobe of the cerebellum, compressing the other lobe; all had distorted the medulla. None gave rise to metastases in other organs. All the tumors were large and very vascular, and contained small hemorrhages and areas of necrosis. Hydrocephalus was present in all five cases. The two supratentorial tumors were dissimilar in location and structure. One tumor involved the corpora striata, optic thalami and the corpora quadrigemina. Histologically, this tumor was a glioma. In the other case the tumor was a gliosarcoma. There is every reason to believe that the tumors had grown to a considerable size before they gave symptoms that attracted attention. Then the symptoms were comparable to those in adults. Two symptoms commonly associated with brain tumor are vomiting and convulsions. While these patients were in the hospital, none presented any unusual frequency of vomiting, nor was the vomiting of an explosive type. Convulsions occurred in only one case, and then only a few hours before death. The infrequency of vomiting and convulsions in this series may possibly be explained by the gradual increase in intracranial pressure and by the extreme adaptability of the young brain tissue to pressure gradually applied. The spinal fluid obtained on lumbar puncture in these seven cases varied in amount from 5 to 30 c.c. The pressure was increased only when the patients were seen early. The fluid was clear and colorless except in one case, in which it was yellow. The cells were increased in only one case. Globulin was not increased, except in the case in which the fluid was yellow. In this case the fluid was blood tinged at the necropsy, which was explained by a comparatively large amount of hemorrhage and necrosis in the tumor.

DISCUSSION

Dr. Charles Hunter Dunn, Boston: Four or five cases of brain tumor have come to necropsy at the Children's Hospital. All were much like the cases Dr. Bartlett described. Four of the tumors were cerebellar, and two originated in the basal ganglions. None of the children showed convulsions. I have seen only one successful operation on a brain tumor in a young child, and in that case, in which the patient was 2 years of age, the tumor was cortical in origin and convulsions were the first symptom. It is only in the cortical tumors that convulsions are an early symptom.

Aplastic Anemia, with Report of a Case in a Child Four Years Old Markedly Improved by Transfusion

Dr. Charles Herrman, New York: This child was admitted to the hospital with a history of fever and pain in the abdomen for two weeks. Examination revealed asthenia, marked pallor, puffiness of the face, and ecchymotic spots on the left calf. The temperature was 101 F.; pulse, 150; respiration, 30. The blood count revealed: Erythrocytes, 750,000; hemoglobin, 25 per cent; leukocytes, 2,500; polymorphonuclears, 25 per cent.; lymphocytes, 75 per cent. A transfusion of 380 c.c. of whole blood without citration was administered. Gradual but progressive improvement followed for a time. The patient died after five months.

DISCUSSION

Dr. Rood Taylor, Minneapolis: It is very doubtful whether the disease known as pernicious anemia ever occurs in infancy and childhood.

Dr. Alfred Hand, Philadelphia: I recently had a case somewhat similar to Dr. Herrman's except that the leukocyte count was somewhat higher, about 30,000. Transfusion brought the hemoglobin up to 85 per cent. The effect was transient, however. The following day the hemogobin was 20 per cent. The case progressed to a fatal issue.

Dr. John Lovett Morse, Boston: From the histories of these cases it seems that there must be some sort of intoxication as a basis. The general treatment should be directed to the elimination of the toxemia, and in that way we may possibly hit upon the cause. My feeling is that if such a patient gets well after transfusion, the case is not one of this form of anemia but a case of purpura.

Lucilia, the Ubiquitous Paralysis Fly and Its Ally, the Buzzard.

Dr. E. W. Saunders, St Louis: There is proof that *Lucilia* is the obligate host of a botulinoid organism, a toxivirus which paralyzes and kills any vertebrate so far experimented on. Lucilia epizootic is primarily an avian disease. I raise the query whether it is not incumbent on the advocates of *Lucilia* causation of human poliomyelitis to prove that man, who is admittedly accessible to *Lucilia,* is susceptible to its toxivirus, or whether it is obligatory for despisers of *Lucilia's* claims to prove that man alone of all vertebrates is insusceptible. The universal distribution of *Lucilia,* its extreme hardihood, its activity in human and animal habitations when the thermometer without registers 40 below zero, and its habit of depositing its paralysant ova indifferently on animal or vegetable matter, either fresh or in a state of putrescence, all incriminate this insect. The buzzard is protected by law in every state, in spite of the fact that it has been proved guilty of carrying disease germs over whole continents. There is necessity for immediate destruction of this bird by the federal government.

Case of Convulsions and Mild or Pseudo-Petit Mal Due to Congenital Irritation

Dr. Henry T. Machell, Toronto: A boy, aged 4, was taken suddenly ill with convulsions last July; no diagnosis as to cause was made at the time. About September 1 he began to have petit mal attacks which increased in number and severity until he was having from ten to twenty-four a day, falling and bruising his head and face repeatedly. In February he had screaming spells, and grasped the genitals every time he urinated. Investigation revealed irritation under the foreskin, on freeing which, the screaming and petit mal attacks ceased promptly. Two months later the boy was having from two to fifteen falling attacks daily. It would seem that the theory that the attacks were due to genital irritation must be abandoned, and that we must fall back on the original petit mal theory.

Xanthoma Tuberosum with Diabetes Insipidus

Dr. P. J. Crozer Griffith, Philadelphia: A boy, aged 9 years, was seen, Sept. 21, 1921, on account of "yellowness" and swelling of the abdomen. Enlargement of the abdomen was noted at 3 years, but was temporary. He was apparently in good health until January, 1919, when he had an attack of jaundice from which he recovered in two or three weeks. In April, 1920, a fall on the head was followed by a lump which disappeared, but soon another developed which was excised and the bone scraped, Injections of mercuric chlorid were started on the ground of possible syphilis. A few days later icterus developed; the abdomen enlarged, the liver also enlarged, debility and emaciation came on, and these symptoms have continued. At the same time small nodules appeared on the skin of the palms and the neck, and these spread more or less over the body. In the summer of 1921, polydipsia and polyuria developed. There was universal jaundice. There were some nodules on the skull. Parchment yellow papules and maculopapules were present, especially about the nose, mouth, eyelids, side of the neck, axillae, palms, and the flexor and extensor surfaces of the limbs; they were large and abudant about the knees. The spleen became enlarged and was felt 4 cm. below the costal margin. The blood pressure was particularly low: systolic, 78; diastolic, 58. The amount of urine varied from 5,000 to 8,000 c.c. daily. Under the administration of sodium chlorid it rose to 10,000 c.c. The specific gravity was usually below 1,007. Pituitary extract given by mouth had no effect, but pituitrin "O" given hypodermically, 1 c.c. daily, reduced the amount of urine to normal but did not affect the specific gravity. A study of the basal metabolism revealed nothing abnormal. The only abnormalities of the blood were a slight leukocytosis and an increased resistance to hypotonic salt solution; the blood sugar was 0.06 per cent.; the blood cholesterol, 397 mg. per hundred cubic centimeters. The Wassermann reaction was negative. The feces contained no bile pigment; there was an excess of fat. The phenolsulphonephthalein test of the kidney function gave an excretion of 25 per cent. the first hour, and 10 per cent. more the second hour. The child was in the hospital for two months, and left with little change in his condition. Xanthoma tuberosum is an exceedingly rare condition. It seems probable that this is the second case on record.

A Peculiar Case of Purulent Meningitis in the New-Born

Dr. T. De Witt Sherman, Buffalo: This case is unusual in that the exciting agent belonged to the group of *Bacillus lactis-aerogenes,* and that the isolated bacillus could not be identified with any known organism. The intestinal origin of the infection was corroborated by the pathologic changes in the liver. The baby was normal until it was 3 days old, when it developed a convulsion, a temperature of 104 F. by rectum, and tonic contraction of the right arm, with contraction of the flexor muscles of the forearm, causing a condition resembling tetany. From the onset on the third day until the sixth day of life, the baby had numerous, and at periods continuous, convulsions. On the seventh day it developed Cheyne-Stokes respiration and cyanosis, and died. The diagnosis was meningitis, probably hemorrhagic. The diagnosis following necropsy was suppurative leptomeningitis, acute catarrhal gastro-enteritis, acute hepatitis, degeneration of the heart and kidneys, and acute swelling of the spleen.

An Unusual Case of Mediastinal Tumor

Dr. Thomas B. Cooley, Detroit: In a boy of 7, previously apparently well, a very large tumor mass in the mediastinum caused sudden grave dyspnea. The mass seemed to fill more than half the thorax. A provisional diagnosis of Hodgkin's disease, persistent thymus or lymphosarcoma was made. An axillary node removed later showed nothing characteristic histologically. Because of two grave attacks of dyspnea, it was decided to resort to intensive roentgen-ray treatment. There were no more attacks of asphyxia after the first treatment. This was probably Hodgkin's disease, or lymphosarcoma.

Prognosis and Treatment of Tuberculosis in Infancy and Childhood

Dr. Rowland Godfrey Freeman, New York: It is characteristic of tuberculosis in early life that it may cause considerable temperature elevation with little leukocytosis or increased polymorphonuclear count. There is very little emaciation, and the lesion is more likely to be in the lower lobes of the lung than in the apexes. Tuberculosis in infancy which is localized may be cured by prompt interference. If, however, it has involved the lungs, it rapidly becomes a generalized tuberculosis and gives an absolutely bad prognosis. If an infant or young child with a chronic lung condition emaciates rapidly, the probability is that the condition is not tuberculosis. Tuberculosis of the lungs in children more than 1 or 2 years of age may in many cases be cured if prompt action is taken, fresh air used persistently, heliotherapy used cautiously, and rest given for a long period; and if a nourishing and digestible diet and cod liver oil are given. These children, if destined to do well, rapidly lose their fever and soon gain weight.

Dosage of Diphtheria Antitoxin

Dr. Edwin H. Place, Boston: The effective dose of antitoxin must be determined chiefly by the results actually obtained in practice rather than by *a priori* facts from animal experiment. In the south department of the Boston City Hospital, the drop from an average of 40 per cent. to about 15 per cent. in 1895 occurred with a dosage of from 1,500 to 2,000 units. It was thus evident that doses now considered relatively small would effectively control a large percentage of cases, and it soon became evident that late in the disease no dose was effective. Figures collected in the course of these observations tended to show that: (1) doses of from 2,000 to 4,000 units of antitoxin were inadequate in diphtheria treatment, even if repeated at intervals; (2) intravenous antitoxin in doses averaging 30,000 might save lives that might be lost with less adequate treatment, and (3) no dose of antitoxin is likely to reduce the mortality of diphtheria, as a whole, unless the delay in administration can be eliminated. It is not a bad dictum that any inflammation of the mucous membrane, unless proved clinically otherwise, should be treated as diphtheria. The fear of anaphylactic shock is much greater than facts justify, and the fear of diphtheria poisoning is tremendously less.

DISCUSSION

Dr. L. Emmett Holt, New York: Dr. Place gives large doses because he always has been giving them. Progress is not made by people who repeat exactly the same therapeutic measures. I do not think Dr. Place would risk the lives of his patients if he gave the doses that others have found to be safe in the treatment of diphtheria.

Dr. William H. Park, New York: We have tried different doses of antitoxin, from 2,000 to 16,000 units. It was surprising how little difference there was in the mortality. Those receiving the larger doses made quicker recoveries, but the large doses did not seem to save more lives. I think that Dr. Place may with safety risk giving smaller doses. We have found it possible to prepare a serum for intravenous injection that causes no chills. I think that we are getting together on the belief that the intravenous injections are better than the subcutaneous and intramuscular injections; that a single dose is necessary, repeated, if one wants to repeat it, and that a large enough dose is necessary; but you may give more if you want to do so.

Study of Acidosis Due to Ketone Acids

Drs. J. L. Gamble, S. G. Ross and F. F. Tisdall, Baltimore: Using as subjects epileptic children who were being fasted as a therapeutic measure, it was undertaken to determine the extent to which the reduction of the plasma bicarbonate during fasting is due (1) to depletion of the inorganic base of the plasma, and (2) to the concentration of ketone acids developing in the plasma. It was found that the total inorganic base concentration was during fasting accurately sustained at its usual average value. The reduction of bicarbonate was thus apparently due entirely to the concentration of abnormal organic acids in the plasma. This inference was sustained by direct measurements of the concentration of ketone acids in the plasma. It was also found that small amounts of sucrose by mouth brought about a restoration of the bicarbonate concentration to its usual size. From these data it is inferred that glucose rather than bicarbonate is the logical agent in the treatment of nondiabetic ketosis.

DISCUSSION

Dr. Oscar M. Schloss, Boston: This work falls in line with clinical observations of the last few years in reference to the use of glucose in the treatment of ketosis rather than the use of sodium bicarbonate. In a number of cases it has been extremely interesting to see children with an extreme degree of acidosis due to ketones relieved in the course of twelve or fourteen hours by the administration of large amounts of glucose.

Dr. W. McKim Marriott, St Louis: This point, that it is not necessary to give bicarbonate in acidosis due to ketones, is of great practical value. It is not only unnecessary to give bicarbonate, but is a distinct disadvantage to do so. That has been brought out by experience as well as by theoretical speculation. When we give sodium bicarbonate, the amounts of sodium and sodium ions in the blood is increased, and this increase disturbs the balance between the sodium, calcium and magnesium ions. There is another type of organic acidosis which is accompanied by dehydration while there is a considerable excess of fatty acids. In these cases the administration of sodium bicarbonate will temporarily cause a cessation of symptoms; but, unless the cause is removed, the effect of the bicarbonate will be relatively ineffectual. In cases of this type as well as those due to ketosis, one may employ glucose.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

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Imidazol Excretion in the Urine Under Normal and Pathologic Conditions

Dr. Karl K. Koessler and M. T. Hanke, Chicago: In 1919 we (1) published a colorimetric method for the quantitative determination of imidazols which enabled us to determine quantities as small as 0.01 mg. with an accuracy of from 0.5 to 3 per cent. The method is based on the interaction that occurs between imidazols and paraphenyldiazoniumsulphonate, and which on addition of a sodium carbonate solution results in the formation of a red color. There are other substances in the urine which give this reaction, as, for instance, certain aromatic oxyacids (phenols). Therefore, before the method can be applied to the urine, it is necessary to remove all other compounds which might give a similar color reaction, and all substances which might interfere with the color production. This is accomplished by a simplification of a method which Weiss had first developed for the partition of urine in a study of the urochromes. One hundred cubic centimeters of the exactly measured twenty-four hour specimen is precipitated with 25 c.c. of a saturated solution of lead acetate. The precipitate formed is composed of the lead carbonates, urates, sulphates, phosphates and certain chromogens, as urobilin. The precipitate is not removed by filtration, but sodium hydroxid is carefully added to the mixture until the supernatant liquid is colorless. Occasionally a urine sample contains so much coloring substances that two or even three 25 c.c. portions of lead acetate solution are required. From about 12 to 18 c.c. of sodium hydroxid solution must be added for each 25 c.c. portion of lead acetate solution. The second precipitate obtained on addition of the sodium hydroxid solution contains lead hydroxid and the lead salts of urochrome, urochromogen, of the aromatic oxyacids and of most purins. The clear liquid obtained on filtration from this voluminous precipitate is treated with from 1 to 2 gm. of disodium hydrogen phosphate, which removes the last traces of lead. The colorless filtrate is concentrated by heating on the steam bath, which removes the volatile phenols. The colorless or faintly yellowish clear liquid is made up to volume, and its content on imidazols is determined by the method described in 1919.

We could prove by precipitation with silver nitrate that 86.4 per cent. of the total color value is due to imidazol compounds. The imidazol content is expressed in milligrams of imidazolacetic acid, and the amount excreted in twenty-four hours is designated as the imidazol index (1.1). The study of the imidazol index in normal and pathologic conditions leads to these deductions: The imidazol excretion of the normal healthy adult varies between 100 and 180 mg. in twenty-four hours. This imidazol index is to some extent dependent on the protein intake, and decreases on a diet low in protein. In most pathologic conditions, the imidazol excretion lies close to the normal limits. In diseases which are associated with a marked retention of water, as cardiac insufficiency and cirrhosis of the liver with ascites, the imidazol excretion is often markedly decreased. The lowest values, however, from 0 to 40 mg., are observed in nephritis, especially those forms associated with retention of other nitrogenous metabolites. The determination of the imidazols in the urine (and in the blood) promises to yield valuable information regarding the excretory function of the kidney.

Effect of Substitution of Exogenous Fat for Tissue Fat on Heat Production and Fat Combustion

Drs. H. B. Richardson and E. F. Du Bois, New York, and E. H. Mason, Montreal: During a fast a diabetic patient continues to oxidize food elements derived from his own tissues. The question then arises as to what benefit results from reducing the diet below the amount so oxidized. Data bearing on this question were obtained by means of the respiration calorimeter. The seven patients studied had either mild or moderately severe diabetes. They were observed while fasting and again following a diet which replaced the food elements oxidized during the fast, the total calories and the calories from protein, carbohydrate, and fat as determined by the calorimeter, being used as a basis for comparison. The diet was given in small portions every two hours, and the observations were begun one and one half hours after the last food. The first group of patients studied received the equivalent of 1.5 gm. of protein per kilogram of body weight and the amount of fat oxidized while fasting. The increase in total metabolism over fasting averaged 3.7 per cent. A second group received the exact amount of protein, fat and carbohydrate oxidized while fasting. The increase in this group averaged 2.3 per cent. The increase for the whole series averaged 2.7 per cent. Excess of fat to the extent of from 50 to 230 per cent. above the amount metabolized while fasting caused rather less increase. This was true even when the diet containing the excess fat was continued for four days. The extension of the fast to two days and of the diet to between two and seven days produced no greater increase than did the shorter periods.

The protein metabolism increased somewhat with replacement diet, and also in three of the four patients to whom excess fat was given. The increase for the entire series averaged 16 gm. of protein a day. When the carbohydrate was replaced, patients with mild or moderately severe diabetes oxidized more carbohydrate than after twenty-four hours of fast. In such cases the fat metabolism decreased. When fat and protein alone were replaced, the patients oxidized less carbohydrate than after a fast. The metabolism of fat then increased, but only to an insignificant extent, averaging 3 gm. a day. The amount of fat metabolized seemed to bear little relationship to the amount given in the food. Sometimes less fat was metabolized when large amounts were given in the food, than when little or none was given. The present work shows that there may be grave errors in calculating the metabolism of fat from the fat in the food. This must be remembered in all calculations of the ratio between fatty acid and glucose. The fact that the foodstuffs metabolized on a replacement diet are essentially the same as when the patient is fasting suggests the need of further investigation into the cause of the improvement in diabetic patients during a fast. The well known reduction of metabolism by undernutrition is substantiated by these observations. A replacement diet continued four days did not cause a similar reduction. Replacement seemed to hold the metabolism at about the level previously reached by fasting.

Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum

Drs. Joseph A. Capps and George H. Coleman, Chicago: In a series of experiments for determining the localization of pain in the walls of the peritoneal cavity, our method is to pass a trocar into the abdomen and, after removal of the point, to insert a silver wire, with the end of which various parts of the parietal peritoneum and diaphragm are stimulated. The first subjects for observation were cases of ascites. Later on, however, we injected air into the abdominal cavity and found that this made it easy to explore the parietal wall and also the under surface of the diaphragm. Our conclusions, drawn from the experiments, are that: The parietal peritoneum, and its underlying serosa so far as explored, namely, all the anterior median areas and the lateral areas as far as the anterior superior spines, are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than 1 inch. Our observations confirm the conclusions of Ramström and Lennander that the parietal peritoneum is devoid of pressure sense. The peritoneum covering the diaphragm is devoid of pressure sense as applied by light contact or stroking of a beaded wire point. But to strong pressure with a beaded point or light contact with a rough point it is acutely responsive to the sense of pain. The localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord, and thence referred to the neck by the sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself.

DISCUSSION

Dr. Emanuel Libman, New York: The observations of Drs. Capps and Coleman are not only important from a theoretical standpoint, but they can be used with the greatest advantage in practical clinical work. In a number of cases, the formerly published observations of Dr. Capps helped me in making diagnoses. One case was of unusual interest. The patient became ill two weeks before I saw him, with his physician, complaining of pain in the shoulder, pain in the left side of the abdomen and pain on swallowing. Such a group of symptoms could be due to a lesion of the mediastinal pleura and a lesion of the outer part of the diaphragm. It was a bit far fetched to consider two such localizations. It was much more practical to consider the possibility of a lesion involving the pleura over the marginal part, and over the mesial part of the diaphragm. Such a condition could give the exact localizations of the pain from which the patient was suffering. On careful examination, a few fine friction râles were heard low down in the left axilla. A diagnosis was made of a lesion of the lowest part of the left lung. A lesion of such type, taking a long time to give physical signs, is often of tuberculous nature, although it may occur as a complication of influenza. When the patient entered the hospital a week after I first saw him, the roentgenologic examination revealed a lesion of the lung exactly where it had been clinically localized. Later, the lesion extended upward, and tubercle bacilli were eventally found in the sputum.

Experiments with Quinidin on Conduction and on the Refractory Period in the Dog's Heart

Drs. Alfred E. Cohn and Robert L. Levy, New York: The experiments were performed on the assumption that circus excitations are responsible for the state of auricular fibrillation. The maintenance of this condition depends on the possibility of rapid reexcitement of the muscle, and this in turn on the duration of the refractory period, and the rate of the conduction of the impulses. The mass of the muscle must be a sufficient size, but this need not be considered, for the normal size of the auricle in man meets this requirement. We studied the rate of conduction and the duration of the refractory period in dogs, before and after the intravenous injection of quinidin sulphate. The rate of the heart was natural, and the vagus nerves were intact. Under ether anesthesia, the chest was opened in the median line. Nonpolarizable electrodes were fastened to the right auricle at two points, each being part of a galvanometer circuit, and the other electrodes being inserted in the tissue at the edge of the incision. The two records were photographed on the same film. This permitted the calculation of the rate of impulse conduction. The refractory period we found by tabulating chronologically the time between natural auricular activity and a signal point in the curve, made by stimulating the auricles with break induction shocks. The longest period not followed by a response is the refractory period. Our results were not uniform. The rate of conduction either rose or remained unchanged. This effect either facilitates the maintenance of the circus or has no influence on it. The refractory period was increased in four experiments and decreased in two. The increase in one and the decrease in another experiment was slight; in two experiments the increases were about 40 and 80 per cent. This effect is advantageous in the attempt to break the circus, and overbalances the effect on conduction which facilitates its continuance. The lack of uniform results parallels that found in administering quinidin to patients. These results differ from those of Lewis, which were uniform. The difference is probably due to the exclusion of the action of the vagus nerves in his experiments. The nature of the action of quinidin in terminating fibrillation is revealed by these investigations.

A Clinical Report on the Use of Quinidin

Drs. L. E. Viko, H. M. Marvin and Paul D. White, Boston: Of seventy-four cases of permanent auricular fibrillation or flutter treated with quinidin at the Massachusetts General Hospital and the New Haven Hospital, fifty cases, or 67 per cent. were returned to normal rhythm; of these, twenty-five cases relapsed after varying periods, while twenty-five cases, or 33 per cent. of the series still maintain normal rhythm after periods from one to over ten months. As factors in determining restoration and maintenance of normal mechanism, age, sex and etiologic type of heart disease seemed relatively unimportant; the older and arteriosclerotic types reacted slightly better than the younger and rheumatic cases. There was a striking parallelism between the probable duration of fibrillation and both restoration and maintenance of normal mechanism; in the cases of less than two months' duration, sinus rhythm was obtained in 82 per cent. and maintained in 73 per cent., while in cases of more than two years' duration only 48 per cent. were restored, and 13 per cent. maintained the new mechanism. Similarly, the presence of objective failure (edema, enlarged liver, etc.), either before or after digitalization made the cases unfavorable for restoration, but very much more likely to relapse. There appeared no close correspondence between the duration of fibrillation and the dosage necessary to restore normal rhythm.

Under quinidin, transitory bundle branch block was produced in two cases, and aberration of the ventricular complexes in four cases. After restoration of normal mechanism, the P R interval was beyond normal limits in fourteen cases, probably in part at least a digitalis effect. Measurements in ten cases by the "7-foot roentgen-ray plate" before and after restoration of normal mechanism disclosed no striking changes. Untoward results under quinidin therapy have occurred in five cases, or 6.7 per cent. of the series; in two of these, one a transient, unimportant peripheral embolism, and the other a fixed flutter, in which digitalis later induced a four to one auriculoventricular block, the results were not serious. In one case, fixed flutter with pulmonary embolism resulted in death. In two cases, sudden death was considered due to pulmonary or cerebral embolism. Permission for necropsy was not obtained.

In a few cases the improvement from restoration of normal rhythm was striking and unquestionable; in others, previous digitalization obscured the picture. Two patients not receiving previous digitalis showed definite clinical improvement following the establishment of sinus rhythm. Four patients not responding to digitalis gave excellent results with quinidin. Fourteen responding well to digitalis showed definite additional improvement from quinidin. In all, twenty patients (27.3 per cent. of the series) presented definite improvement from quinidin; it was notable that all but three of these had fibrillation of short duration.

In comparing the frequency of untoward results in 452 cases of fibrillation in which quinidin was given, as reported in the literature, with 200 cases of fibrillation in which quinidin was not given, the percentage of embolism was reasonably equal, but sudden death occurred more frequently under quinidin. The untoward results under quinidin occurred largely in cases with failure and fibrillation of long duration. In seven cases of paroxysmal fibrillation of flutter treated with quinidin, the results have been promising, but this series is not yet large enough to justify conclusions. If administered only to patients with permanent fibrillation or flutter of short duration and slight or no failure, and to patients with paroxysmal fibrillation or flutter, quinidin should prove a valuable and probably comparatively safe therapeutic agent.

Ventricular Hypertrophy: A Comparison of Electrocardiographic and Postmortem Observations

Drs. Frank N. Wilson and George R. Herrmann, Ann Arbor, Mich: In fifty-nine cases in which electrocardiographic observations were made during life, the relative weight of the two cardiac ventricles (the ratio L/R) was determined postmortem by the method of Lewis. According to the L/R ratio shown, the cases may be divided into four groups:

Group 1. L/R ratio above 2.20; abnormal left ventricular preponderance. Fifteen of our cases fell in this group. In only two of these did the electrocardiogram indicate definite left ventricular preponderance. In six instances the electrocardiogram indicated questionable left ventricular preponderance. In the seven remaining cases the curves were essentially of the normal type. Of the eight cases in which the electrocardiogram indicated left ventricular preponderance or questionable left ventricular preponderance, the ventricular weight exceeded 250 gm. in five; it exceeded this figure in none of the seven cases which showed no electrocardiographic preponderance.

Group 2. L/R ratio from 1.80 to 2.20; left ventricular preponderance within normal limits. Sixteen of our cases fell in this group. The electrocardiogram indicated definite left ventricular preponderance in four, and questionable left ventricular preponderance in one. In three of these five cases the ventricular weight exceeded 250 gm. In one case the electrocardiogram indicated questionable right ventricular preponderance; in the remaining cases it was of the normal type. In none of these eleven cases did the ventricular weight reach 250 gm.

Group III. L/R ratio from 1.50 to 1.78; right ventricular preponderance within normal limits. Twenty-one of our cases fell in this group. In one case the electrocardiogram indicated definite left, and in one case definite right ventricular preponderance. The ventricular weight was low in both of these cases. In the remaining nineteen cases the electrocardiogram was of the normal type; the ventricular weight was below 250 gm. in all.

Group 4. L/R ratio below 1.50; abnormal right ventricular preponderance. Seven cases fell in this group. In none of these cases did the electrocardiogram indicate definite or questionable right ventricular preponderance; in one case the electrocardiogram indicated definite left ventricular preponderance (ventricular weight, 199 gm.). In the remaining six cases the electrocardiogram was of the normal type; in only one of these cases did the ventricular weight exceed 250 gm.

In our series of cases there is no relation between the ratio L/R and the form of the electrocardiogram when the ventricular weight is below 250 gm. When the ventricular weight exceeds 250 gm., a relation exists, but it does not appear to be a close one. We conclude that if the ratio L/R influences the form of the electrocardiogram, the effects of its influence are greatly disturbed, especially in hearts which are not greatly hypertrophied, by other factors which affect the form of the ventricular complex.

Action of Cinchophen in Human Subjects with Normal Nucleic Acid Metabolism

Drs. J. H. Pratt and G. P. Grabfield, Boston: Human subjects with normal nucleic acid metabolism, on a purin-poor (as near purin-free as was possible) diet, were given cinchophen (1 gm. three times a day) and their uric acid excretion studied. A preliminary period showed that the endogenous level of uric acid excretion varies greatly in different individuals (from 295 to 450 mg. a day, averaging 340 mg.); in addition, we noted variations amounting to as much as 30 per cent. in the same individual on different days. If cinchophen is administered in the dosage mentioned, over a two day period, there is a sharp rise in the uric acid excretion, which falls to the endogenous level on the withdrawal of the drug. If, however, the exhibition of cinchophen is continued over a five day period, there is a compensatory fall in uric acid excretion which may more than counterbalance the rise. The level of uric acid in the blood remained unchanged in these subjects. In certain subjects no demonstrable increase in uric acid excretion occurred. In these experiments the collection of specimens was controlled by creatinin determinations, and the diets were supervised with the utmost care to prevent the ingestion of purin-containing foods. We have been unable to demonstrate any change in the blood uric acid within two hours after the administration of 2 gm. of cinchophen. Experiments are now in progress to determine the distribution of blood uric acid and to determine the action of cinchophen in patients with damaged kidneys. One such patient so far studied has shown the usual rise after the administration of the drug.

Vitally Stainable Reticulation and Chromatic Granules in Erythrocytes Preserved in Vitro

Dr. O. H. Perry Pepper, Philadelphia: Reticulation is found only in young erythrocytes, and it was hoped by determining how long this reticulation persisted in erythrocytes preserved in vitro to learn whether or not such preservation rendered the erythrocytes less suitable for transfusion. Human and rabbit erythrocytes were employed, and samples were either defibrinated or taken into sodium citrate solution according to the Rous-Turner technic, and were preserved as sterilely as possible at various temperatures. It was found that in the defibrinated preparations kept at 8 C. the reticulation would persist for from three weeks to a month. In defibrinated blood kept at body temperature, the reticulations steadily decreased after about eighteen hours, and had all disappeared after seventy-two hours. This may give some hint of the duration of reticulation in a circulating erythrocyte. The results with the Rous-Turner preparations were very variable, and in many instances the addition of the citrate solution at once markedly reduced the number of erythrocytes showing reticulation. Reticulated forms, however, were found in such preparations preserved in the icebox for one month. During the period of preservation, especially in the case of defibrinated rabbit's blood preserved at 8 C., there develop in an increasing number of erythrocytes one or more small refractile granules, which appear crimson when the preparation is vitally stained with brilliant cresyl blue. These are probably identical with the "substantia metachromatica" of Cesaris-Demel, and their development during in vitro preservation favors the view that they are a degeneration phenomenon.

Water Intoxication

Dr. Leonard G. Rowntree, Rochester, Minn.: Larson, Weir and Rowntree observed patients with diabetes insipidus who developed headache, nausea, asthenia, incoordination, marked sweating and, in one instance, mild subcutaneous edema, on the forcing of water subsequent to the administration of pituitary extract. Water intoxication was produced in dogs through the administration of large quantities of water by stomach tube subsequent to subcutaneous administration of extract of the posterior lobe of the pituitary gland. Large quantities of water at hourly intervals, 50 c.c. per kilogram of body weight, subsequent to 3 c.c. of pituitary extract, resulted regularly in the development of asthenia, restlessness, frequency of urination, diarrhea, nausea, retching, vomiting, tremor, salivation, muscle twitching, ataxia (tonic and clonic), convulsions, frothing at the mouth, stupor and coma. Death ensued when water administration was continued after the onset of convulsions, whereas complete recovery resulted within twelve hours in a large proportion of the animals if no more water was given.

Water intoxication has since been induced in various animals without the use of pituitary extract. In dogs, administration by stomach tube of 50 c.c. per kilogram every half hour results regularly in the appearance of nausea, vomiting, salivation, convulsions, stupor and coma, within from four to eight hours, and death ensues if water administration is continued after the onset of convulsions. Cats, rabbits and guinea-pigs are similarly affected by water. This intoxication results from the ingestion of ordinary drinking water or distilled water (from block tin or glass) irrespective of its temperature. Although the quantities of water given are excessive, the amount absorbed is definitely limited. The intoxication is not accompanied by significant changes in body temperature, by edema or by constant or marked changes in blood volume. The blood pressure is somewhat increased, and may reach as high as 200 mm. of mercury during the convulsions. Intracerebral pressure in one experiment was found to be increased to an amount corresponding to that of 35 cm. of water. This increase was not proportionate to or parallel to increase of blood pressure.

The convulsions are cerebral in origin and of extreme violence at times, usually lasting from one to ten or fifteen minutes. They may be tonic, but are usually clonic in character and are likely to recur at intervals. In the interim, the animal presents a state of stupor or coma with marked muscular flaccidity, extreme asthenia and abject helplessness. Hypertonic salt solution administered intravenously after the early evidence of toxicity prevents, as a rule, the onset of convulsions and coma. Necropsy reveals no gross changes.

It is of more than passing interest to learn that all of the symptoms of uremia can be experimentally induced by excessive water intake. An increase in cerebral pressure is unquestionably concerned etiologically in water intoxication. The evidences of intoxication disappear rapidly on the intravenous administration of hypertonic salt solution. The relation of water intoxication, if any exists, to uremia, eclampsia and epilepsy is not clear as yet.

(To be continued)

Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

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*Nephritis in Children. G. Boyd, Toronto.—p. 375.
*Eczema in Breast-Fed Infants as Result of Sensitization to Foods in Mother's Dietary. W. R. Shannon, St. Paul.—p. 392.
Sitting-Height and Stem-Length in Private School Boys. H. Gray, Boston.—p. 406.
*Presence of Formic Acid in Urine of Infants and Older Children. M. D. McNeal, Rochester, Minn., and C. J. Eldridge, Chicago.—p. 419.
*Prophylactic and Therapeutic Value of Pertussis Vaccine. G. R. Davies, Syracuse, N. Y.—p. 423.
Chlorin Content of Cows' and Goats' Milk and Formulas Commonly Used in Infant Feeding. W. R. Sisson and W. Dennis, Boston.—p. 431.
*Respiratory Obstruction Resulting in Death. J. W. Bruce and S. Graves, Louisville, Ky.—p. 438.

Nephritis in Children.—An attempt was made by Boyd to determine the functional pathology of the nephritides in children. Infections, often apparently insignificant, were the most important etiologic factors in a series of twenty-six cases, tonsillitis occurring in 42.3 per cent. Cases of nephritis in childhood are divided by Boyd into (*a*) acute glomerulonephritis, (1) resolving, (2) nonresolving; (*b*) chronic glomerulonephritis; (*c*) nephrosis. The acute cases which recover are differentiated from the nonresolving type, by: (*a*) better response to renal function tests; (*b*) steady and rapid improvement clinically, and (*c*) rapid diminution and complete disappearance of the albuminuria. The chronic cases differ in the history of past symptoms and signs attributable to the kidney, especially nycturia, in the presence of more numerous casts in the sediment. Relapses occur frequently in the more severe cases, and of themselves justify a bad prognosis. Tests of renal function give invaluable aid in determining the prognosis and line of treatment. The concentration test and the determination of the blood nitrogen constituents furnish the most reliable data. Consideration of the response to functional tests coupled with clinical observation, enables one to foretell fairly accurately the outcome in individual cases. Administration of calcium salts, particularly the lactate, is of definite value in clearing up the edema. Pathologically, the most common lesion in the acute cases is a glomerulonephritis of the intracapillary type, accompanied by more or less degeneration in the cells of the convoluted tubules. The chronic cases showed the same lesions as the acute cases plus scarring and fibrotic changes. In the nephrotic case, tubular changes predominated.

Eczema Result of Sensitization to Foods.—The cases of eczema reported by Shannon occurred in either exclusively or essentially breast-fed infants. Treatment was mainly dietary. Recourse was had to external applications as a supplementary treatment in most cases. Several cases had shown no improvement during a preliminary period of external therapy alone. Dietary treatment consisted in the removal of offending foods from the dietary of the mother and patient or their limitation. It was guided by the results of cutaneous protein tests performed on the infants. The technic of the tests was that described by Walker, with the exception that the infant's back was used instead of the forearm. Interpretation of the positive reaction was based on the occurrence of an erythema at the site of the test, as well as a wheal.

Formic Acid in Urine of Children.—Formic acid was found by McNeal and Eldridge in the urine of ten infants and nine older children suffering from various diseases. The urine in all cases was negative to copper reduction tests. The method of Autenrieth for the determination of formic acid in the urine was used.

Value of Pertussis Vaccine.—Although it appears that the individual child responds differently to the pertussis vaccine, Davies' experience shows that the duration of the disease is shortened by its administration. Paroxysms were lessened in severity and duration, and whooping and vomiting were alleviated.

Enlarged Thymus Causes Early Death.—Bruce and Graves relate the case of a boy, aged 4 months, whose illness dated from the day after his birth when his mother noticed that his breathing was more noisy than normal. He was not cyanotic and did not seem to be in distress. This noisy breathing became more and more pronounced. He had been cyanotic only once, for about five minutes, when he seemed to strangle. An enlarged thymus was the cause of the trouble. He was not benefited by the roentgen-ray treatment. About one week before his death the respiratory difficulty became worse. About forty-eight hours before his death a roentgen-ray treatment was given and shortly after this, his symptoms became greatly exaggerated and continued so until his death. The necropsy confirmed the enlargement of the thymus.

American Journal of Hygiene, Baltimore

May, 1922, **2**, No. 3

Inheritance of Duration of Life in Man. R. Pearl, Baltimore.—p. 229.
Original Diagnostic Culture for Determination of Virulence of Diphtheria Bacilli. L. C. Havens and H. M. Powell, Baltimore.—p. 234.
Certain Correlation Factors of 1918 Influenza Epidemic. C. E. A. Winslow and C. C. Grove, New Haven, Conn.—p. 240.
Production of Hemolysins and Hemagglutinins in Domestic Fowl. R. R. Hyde and C. E. Bailey, Baltimore.—p. 246.
Control of Hookworm Disease. XI. Vertical Migration of Infective Hookworm Larvae in Soil (Preliminary Report). F. K. Payne, Baltimore.—p. 254.
Resistance of Different Hosts to Experimental Trypanosome Infections, New Method of Measuring Resistance. W. H. Taliaferro and L. G. Taliaferro, Baltimore.—p. 264.

American Journal of Roentgenology, New York

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Roentgen-Ray Evidence of Abdominal Small Intestinal States Embodying an Hypothesis of Transmission of Gastro-Intestinal Tension. R. W. Mills, St. Louis.—p. 199.
Conception of Chest Roentgen-Ray Densities Based on Study of Granite Dust Inhalation. D. C. Jarvis, Barre, Vt.—p. 226.
Roentgen-Ray Technic for Demonstration of Small Pneumothorax. J. C. Thompson and N. Barlow, New Haven, Conn.—p. 235.
Value of Roentgenotherapy in Dermatology. G. M. Mackee and G. C. Andrews, New York.—p. 241.
Roentgen-Ray Treatment of Diseases of Skin. H. H. Hazen, Washington, D. C.—p. 247.
Superficial Malignancies. C. F. Bowen, Columbus, Ohio.—p. 255.
Persistalsis of Colon. P. M. Hickey, Detroit.—p. 260.

American Journal of Syphilis, St. Louis

April, 1922, **6**, No. 2

Comparative Clinical Observations on Involvement of Nervous System in Various Phases of Syphilis. J. H. Stokes and A. R. McFarland, Rochester, Minn.—p. 169.
Maryland State Department of Health Venereal Disease Clinic. A. G. Rytina, Baltimore.—p. 185.
*Intraspinal Therapy in Neurosyphilis. J. A. Fordyce, New York.—p. 198.
Practical Observations on Syphilis. II. H. H. Hazen, Washington, D. C.—p. 204.
Diagnosis and Treatment of Primary, Secondary, Latent and Tertiary Syphilis: Review of Literature. S. Feldman, New York.—p. 232.
*Case of Syphilis of Intestine. G. O. Scott and G. H. J. Pearson, Ottawa, Can.—p. 269.
Value of Neurological Examination in Syphilis. R. Hoyt, New York.—p. 273.
*Another Technic for Wassermann Test. E. H. Buttles, Burlington, Vt.—p. 280.
Absolute Diagnosis of Primary Syphilis. I. C. Sutton, Los Angeles.—p. 283.
Studies in Standardization of Wassermann Reaction. XXIV. Comparative Study of Tissue Extracts (Antigens) and Methods of Preparation. J. A. Kolmer and M. E. Trist, Philadelphia.—p. 289.
Studies in Standardization of Wassermann Reaction, XXVI. J. A. Kolmer and E. M. Yagle, Philadelphia.—p. 319.

Intraspinal Therapy in Neurosyphilis.—The value of therapeutic procedures in neurosyphilis, Fordyce states, should be appraised by the permanence of the results not only on the clinical signs and symptoms but also on the changes in the cytobiology of the spinal fluid and blood. If patients are not kept under observation for several years and controlled in this manner statements made by clinicians as to the effect of this or that method of treatment have little or no significance. Intraspinal treatment cures certain types of neurosyphilis in which intravenous treatment alone or when combined with spinal drainage has failed. Spinal drainage is of some value and may in certain cases facilitate the entrance of arsphenamin given intravenously. It more often fails to do more than reduce the cell count. It has little or no effect on the Wassermann reaction or the globulin content. It cannot be endured for a sufficiently long time in chronic types of neurosyphilis to effect a cure.

Syphilis of Intestine.—A case is presented by Scott and Pearson with a suggestive syphilitic history, showing symptoms of generalized abdominal pain and tenderness, severe diarrhea, with the passage of liquid stools, containing mucus and pus, mild icterus, gradual emaciation, and cachexia, failing memory, and a persistently negative serum Wassermann. Recovery was rapid and complete, as far as concerns symptoms, under antisyphilitic treatment, substantiating a presumptive diagnosis of syphilitic enteritis.

New Technic for Wassermann Test.—Buttles uses a 0.5 per cent. suspension of washed human red cells in saline; clear blood serum of guinea-pigs obtained by cardiac puncture; two antigens, (1) the acetone insoluble lipoid antigen of Noguchi, prepared from human heart; (2) cholesterinized extract of human heart, alcoholic. The patient's serum is obtained by puncture of a vein, must be clear and is heated to 56 C. for twenty minutes. Rabbits are immunized against human erythrocytes by four intravenous injections followed by two or more injections intraperitoneally. When the serum titrates 800 or over the animal is bled from the ear or heart and the serum is dried on filter paper. Titrations of all reagents are made before use, nearly in accordance with the directions of Craig. Buttles claims for his technic, which he describes in detail, that the combining of erythrocytes, saline and complement, decreases the number of pipetting operations. Errors from inaccurate pipetting of small amounts of complement and of cell suspension are avoided, as well as errors from inaccurately graduated pipets. The relation between amount of cells and of complement is the same in all tubes. The first incubation furnishes a control against any nonspecific hemolysis.

Annals of Medical History, New York

March, 1922, **4**, No. 1

Nosography in Modern Internal Medicine. K. Faber, Copenhagen, Denmark.—p. 1.
Caspar Wistar, Junior. W. S. Middleton, Madison, Wis.—p. 64.
French School of Surgery in Reign of Louis Philippe. J. C. Da Costa, Philadelphia.—p. 77.
London Surgery in Early Part of Nineteenth Century. J. H. Gibbon, Philadelphia.—p. 80.
Dublin Medical School and Its Influence Upon Medicine in America. D. Riesman, Philadelphia.—p. 86.
History of Pulse Timing with Some Remarks on Sir John Floyer and His Physician's Pulse Watch. J. Rosenbloom, Pittsburgh.—p. 97.

Archives of Internal Medicine, Chicago

May, 1922, **29**, No. 5

*Study of Some Cases of Diabetes Insipidus with Special Reference to Detection of Changes in Blood When Water is Taken or Withheld. C. D. Christie and G. N. Stewart, Cleveland.—p. 555.
*Clinical Calorimetry. XXX. Metabolism in Erysipelas. W. Coleman, D. P. Barr and E. F. Du Bois, New York.—p. 567.
*Id. XXXI. Observations on Metabolism of Arthritis. R. L. Cecil, D. P. Barr and E. F. Du Bois, New York.—p. 583.
*Id. XXXII. Temperature Regulation After Intravenous Injection of Proteose and Typhoid Vaccine. D. P. Barr, R. L. Cecil and E. F. Du Bois, New York.—p. 608.
*Correlated Study of Indications for Tonsillectomy and of Pathology and Bacteriology of Excised Tonsils. L. Hambrecht and F. R. Nuzum, Santa Barbara, Calif.—p. 635.
*Blood Pigment Metabolism and Its Relation to Liver Function. C. M. Jones, Boston.—p. 643.
*Study of Hemoglobin Metabolism in Paroxysmal Hemoglobinuria. C. M. Jones and B. B. Jones, Boston.—p. 669.
*Studies of Cause of Pain in Gastric and Duodenal Ulcers. II. L. L. J. Hardt, Rochester, Minn.—p. 684.
*Seat of Emetic Action of Digitalis Bodies. R. A. Hatcher and S. Weiss, New York.—p. 690.
*Alkali Reserve in Pulmonary Tuberculosis. D. S. Hachen, Cincinnati. —p. 705.

Regulation of Water Excretion by Kidneys.—The regulation of the excretion of water by the kidneys was studied by Christie and Stewart in two cases of diabetes insipidus presenting the typical features, and in one case of polyuria of acute onset, apparently associated with a brain lesion. In the last case the polyuria disappeared permanently after lumbar puncture, but the patient eventually developed symptoms of mental derangement. No evidence was obtained that the condition was associated with any pathologic change in the kidneys. The various tests of efficiency of renal function gave normal results. When pituitary extract was administered the kidney showed normal power of concentrating the urine.

Metabolism in Erysipelas. — Observations were made by Coleman et al. on the basal metabolism of five erysipelas patients during the acute stage of the disease. During the fever, the metabolism is increased from 19 to 42 per cent. above the average normal basal. The increase in metabolism is roughly proportional to the degree of fever. A temperature of 40 C. involves a heat production of about 40 per cent. above the average normal. The change in rectal temperature is not always an accurate index of the change in average body temperature in erysipelas. The regulation of body temperature is similar to that observed in malaria during the stage of high continuous temperature. Both heat production and heat elimination are maintained at a high level. The heat lost in the vaporization of water constitutes from 23.6 to 33.4 per cent. of the total heat elimination. During rising, constant and falling temperatures the percentage of heat eliminated in the vaporization of water was greater than in normal individuals. No specific differences were found between the metabolism in erysipelas and in typhoid fever. Both fevers show approximately the same increase in the level of heat production for the same increase in body temperature. The protein metabolism is greatly increased in both diseases.

Metabolism in Arthritis.—The basal metabolism of four cases of acute and subacute arthritis was determined by Cecil et al. Three cases of acute and subacute arthritis showed no variation from the normal basal metabolism. One case of acute arthritis observed during a continuous temperature of 38.4 C. showed a basal metabolism 26 per cent. above the average normal level. Other observations on the same patient during afebrile periods exhibited a metabolism practically within normal limits. In this case there was a marked loss of body nitrogen during a period when the energy requirement was more than covered by a liberal diet. This indicates a toxic destruction of body protein. One case of gout showed little change in the level of basal metabolism. Four cases of severe arthritis deformans on the Landergren diet, very low in protein but high in calories, excreted from 2.6 to 3.6 gm. nitrogen per day, figures which are well within the normal limits. Three of these patients when tested in the calorimeter had a metabolism rate close to the average normal level. The respiratory quotients were normal, and there was no evidence of abnormal respiratory metabolism following the ingestion of large test meals of glucose and protein. The observations on arthritis deformans do not indicate that it is a disease of metabolism. If infectious in origin, it may be said that the infection is not accompanied by increase in basal metabolism or by toxic destruction of body protein.

Temperature Regulation After Injection of Proteose. — Calorimeter experiments have been made by Barr et al. on subjects after the intravenous injection of proteose and of typhoid vaccine. In five of these it was possible to observe the phenomena of chills. Observation has demonstrated that rise in body temperature is accompanied by increased heat production the amount of which corresponds to the degree of fever. It is found that this increase follows van't Hoff's law, which may be stated as follows: "With a rise in temperature of 10 C., the velocity of chemical reactions increases between two and three times." The phenomena of the chill following intravenous injection of proteose or vaccine are strikingly similar to those of the malarial paroxysm, the method of temperature regulation being almost identical.

Pathology of Excised Tonsils.—Of 218 persons said clinically to need a tonsillectomy, microscopic examination of their removed tonsils gave evidence of pathology in 93 per cent.; 7 per cent. were normal. Of these 218 persons, 63 per cent. gave a history of repeated "sore throats," 14 per cent. of frequent colds and were told that they had enlarged tonsils, 8 per cent. complained of mouth breathing, 8 per cent. of rheumatism and 7 per cent. of otitis media. Chronic lacunar (crypt) tonsillitis was found by Hambrecht and Nuzum occurred in 42 per cent.; chronic interstitial tonsillitis in 21 per cent.; chronic peritonsillitis in 6 per cent., gross or microscopic abscess in 10 per cent., and lymphatic hyperplasia as the only change in 14 per cent. Hemolytic streptococci were isolated in 96.1 per cent. of all tonsils and were the predominating organism in 85.4 per cent. In nearly every instance the same organisms were isolated from the adenoid tissue as from the tonsils of that patient. Avirulent diphtheria bacilli were isolated but three times in the entire series.

Blood Pigment Metabolism.—Jones asserts that increased blood destruction is accompanied by an increase of the bile pigments in the blood plasma and bile. Alterations in liver function, due to infection, new growth, cirrhosis, or even a profound anemia per se, are also accompanied by marked increases in bile pigment, both in the bile and plasma. Jaundice, in cases with liver damage, may be entirely due to an alteration in bile pigment metabolism, without the necessity of any accompanying obstructive process or increase in the normal process of blood destruction. In gallbladder disease the bile pigments in the duodenal contents are abnormally high, especially in those fractions containing the greatest concentration of bile from the gallbladder. Cases of uncomplicated cholecystitis show a greater concentration of bile pigments than cases of cholelithiasis. A presumable functional incapacity of the liver properly to metabolize hemoglobin, resulting from any cause resulting in liver damage, is accompanied by a lowered hemoglobin content of the blood. Such cases also show high bile pigment values in the plasma and bile. Owing to the frequent association of hepatitis with cholecystitis it is probable that the frequent accompaniment of a low hemoglobin content and an apparent anemia in chronic gallbladder diseases is due to an alteration in liver function.

Hemoglobin Metabolism in Paroxysmal Hemoglobinuria.—The experiments made by the Joneses suggest that a large part of the transformation of hemoglobin into bilirubin could occur normally in the blood vessels. Possibly the greater portion of this change takes place in the blood vessels of the liver because of the vascularity of this organ. The low bile pigments urobilin and urobilinogen can be formed in the liver, without the intervention of bacterial action in the intestine. Experimental evidence in man suggests strongly that the bulk of this pigment elimination is normally carried on by the liver.

Cause of Pain in Gastric Ulcer.—Hardt asserts that the pain in gastric ulcer is primarily due to the peristalsis acting on an irritable focus. All the medical measures by which gastric acidity is neutralized and suppressed also inhibit the gastric peristalsis and thus relieve the pain. Patients with uncomplicated duodenal ulcer do not experience pain during the period of digestive peristalsis, even in the presence of an adequate acidity. Active peristalsis of the "hunger type" is essential in the production of pain.

Seat of Emetic Action of Digitalis Bodies.—Hatcher and Weiss believes that digitalis bodies cause reflex nausea and vomiting through their direct action on the heart. The afferent impulses pass from the heart to the vomiting center in the medulla, by way of the sympathetic mainly, in part by way of the vagus, probably. Nausea and vomiting accompanying various circulatory disturbances, and more particularly those of cardiac origin, acquire a new interest for the clinician in the light of our results. A theory relating to the physiology of nausea and vomiting is submitted.

Alkali Reserve in Pulmonary Tuberculosis.—Although there is a decrease in the alkali reserve as the case advances, at no time, Hachen states, is there a marked "acidosis" in pulmonary tuberculosis.

Archives of Neurology and Psychiatry, Chicago

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*General Symptomatology and Differential Diagnosis of Disseminated Sclerosis. B. Sachs and E. D. Friedman, New York.—p. 551.
Multiple Sclerosis: Location of Lesions with Respect to Symptoms. E. W. Taylor, Boston.—p. 561.
*Incidence of Multiple Sclerosis in United States Troops. P. Bailey, New York.—p. 582.
Lesions of Auditory and Vestibular Apparatus in Multiple Sclerosis. I. Friesner, New York.—p. 584.
*Studies in Pathogenesis of Multiple Sclerosis. G. B. Hassin, Chicago.—p. 589.
*Investigation of Axis Cylinder in Its Relation to Multiple Sclerosis. J. H. Leiner, New York.—p. 608.
*Multiple Degenerative Softening Versus Multiple Sclerosis. G. B. Hassin and P. Bassoe, Chicago.—p. 613.
*Mental Symptoms of Multiple Sclerosis. S. Brown II and T. K. Davis, New York.—p. 629.

Diagnosis of Disseminated Sclerosis.—According to Sachs and Friedman the diagnosis of disseminated sclerosis is warranted in the presence of a combination of any number of important signs enumerated by them as the result of their analysis of 141 cases, particularly if corroborated by the entirely negative character of the pupillary reactions and of the biologic tests. That there will be occasional pitfalls and errors may be conceded, but that is practically as true of disseminated sclerosis as it is of all other organic diseases of the central nervous system.

Incidence of Multiple Sclerosis.—Among approximately 3,500,000 men examined by the neuropsychiatric officers of the U. S. Army, a total of 69,394 cases of nervous and mental disease and defects were identified. Among 6,916 so-called organic cases, there were 511 cases of multiple sclerosis, a distribution average among organic conditions of 7.4 per cent. The average of foreign born in the whole group of organic conditions was 9.2 per cent., while in multiple sclerosis it was higher, namely, 12.7 per cent. Thirty per cent. of the patients with multiple sclerosos gave a family history of nervous diseases (as compared with syphilis of the central nervous system, for example, in which only 7 per cent. of the patients had a family history of nervous diseases); 10 per cent. gave a family history of mental disease.

Pathogenesis of Multiple Sclerosis.—A brief review is presented by Hassin of the histopathologic changes in multiple sclerosis studied on material from thirteen cases. The best known and the most notable characteristic features of multiple sclerosis are the so-called patches of sclerosis. Three pathologic features—apparently healthy fibers, fibers totally or partially demyelinated and fibers in a state of wallerian or secondary degeneration—occur not only in the patches themselves but also in parts of the central nervous system which show no visible patches. There are definite early changes in the form of widespread swelling of the myelin substance. The myelin alteration is an acute and early manifestation with the formation of a waxy patch. The glia undergoes changes later. The pathologic changes are primarily ectodermogenic, the mesodermogenic tissue participating in the alterations of the disease secondarily. Vascular and septal changes are present, but are accidental phenomena. Theoretically, it is possible to produce the changes of multiple sclerosis without concomitant changes in the connective tissue elements. The patches of sclerosis are not representative of territorial areas in relation to the arterioles, the venules and the perivascular lymph drainage. The lesions of multiple sclerosis cannot be produced experimentally either by interference with, or irritation of, the vascular supply of the spinal cord.

Condition of Axis Cylinder in Multiple Sclerosis.—Leiner states that the axis cylinder is damaged and may be destroyed. Frequently the axis cylinders survive the lesion and the primary edema is followed by a subsidence of the same. The medullary sheath is more seriously involved than the axis cylinder. It may be completely destroyed while comparatively well preserved axis cylinders remain. The medullary sheath may be preserved, at least in part. Leiner accepts Spiegel's conception that disintegration of the medullary sheath is accompanied by edema of the axis cylinder.

Multiple Degenerative Softening.—Recent histopathologic studies of the central nervous system have brought to light a group of cases presenting peculiar lesions in the form of scattered foci of degeneration. These foci or plaques differ microscopically from the patches of multiple sclerosis, encephalomyelitis and similar conditions and may be the cause of many indefinite clinical syndromes. These probably include many cases described as degenerative encephalitis, disseminated encephalomyelitis, malignant or acute multiple sclerosis, poliencephalitis superior of Wernicke, and other conditions. Generally speaking, they do not conform, either clinically or pathologically, to any established morbid entity. The histopathologic examination of such a case Hassin and Bassoe believe justifies the conclusion that this is a disease group sui generis which they propose to designate as multiple degenerative softening in order to emphasize the contrast with multiple sclerosis. The most conspicuous pathologic features of the acute degenerative type are soft patches which grossly resemble the firm patches of multiple sclerosis, but which microscopically have a definitely different structure. The soft patches are associated with a diffuse degeneration of the brain substance.

Mental Symptoms of Multiple Sclerosis.—The mental symptoms of multiple sclerosis are divided by Brown and Davis into two groups: first, those which are primary and directly the result of the organic lesions; second, those which are incidental and secondary. In the first group they place euphoria, since it seems to be associated with the organic brain condition; likewise the mental defect symptoms, the occasional hallucinations of organic origin and the very rare confused states and Korsakoff's psychosis; also the occasional terminal states with delusions of grandeur. In the second group they place those transitory delusional states and depressions which appear to arise as a result of the condition of incapacity in which the patient finds himself. Here probably belong suicidal attempts and delusional trends accompanied by hallucinations often of only a few months' duration. There are still other delusional trends which are more like dementia praecox. However, marked distortion of thought and oddities of conduct which are so frequent in dementia praecox are not encountered in multiple sclerosis. While multiple sclerosis has symptoms in common with other organic brain diseases, the mental symptoms do not closely resemble these conditions. The clinical picture is not that of paresis nor that of cerebral arterio sclerosis. The symptoms are more like those occasionally seen in cases of brain tumor.

Colorado Medicine, Denver

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Pneumococcus Mastoiditis Without Otitis Media. L. T. Richie, Trinidad.—p. 95.
Treatment of Nontuberculous Infections of Chest Following Infection of Respiratory Tract. T. E. Carmody, Denver.—p. 97.
Relations of Infections of Upper Respiratory Tract to Nontuberculous Infections of Chest. M. D. Brown, Denver.—p. 100.
Restoration of Function in Hydronephrosis. O. S. Fowler, Denver,—p. 103.

Endocrinology, Los Angeles

March, 1922, **6**, No. 2

Suprarenal Insufficiency from Viewpoint of Clinician. C. E. de M. Sajous, Philadelphia.—p. 197.
*Influence of Endocrine System on Intra-Ocular Tension. J. Imre, Jr., Budapest, Hungary.—p. 213.
*Case of Retarded Mentality in Child, Treated by Organotherapy. M. J. Konikow, Boston.—p. 218.
Studies of Thyroid Apparatus. V. Significance of Comparative Mortality Rates of Parathyroidectomized Wild Norway Rats and Excitable and Nonexcitable Albino Rats. F. S. Hammett, Philadelphia.—p. 221.
*Use of Pituitary Extracts by Mouth in Treatment of Diabetes Insipidus. M. H. Rees and W. H. Olmsted.—p. 230.
Childhood Myxedema or So-Called Sporadic Cretinism in North America. M. B. Gordon, Brooklyn.—p. 235.
Effect of Body Tissues Other Than Thyroid on Basal Metabolic Rate. J. C. Aub and M. Taylor, Boston.—p. 255.

Influence of Endocrines on Eye Tension.—Imre has found that a disturbance in the balance of the endocrine system causes a disturbance in the intra-ocular tension. When the balance is restored the intraocular tension approaches or becomes normal. The glands that seem to play the principal rôle in the regulation are the hypophysis, thyroid, thymus and gonads.

Organotherapy in Retarded Mentality.—A case is described by Konikow of a girl, 14 years of age, who had manifested rapidity of growth and developed skeletal proportions suggestive of gigantism. Considerable mental retardation was evidenced. Obvious improvement in her scholastic record was seen while she was undergoing organotherapeutic treatment. Renewed retardation occurred when treatment was discontinued and there was improvement with its resumption.

Pituitary Extract in Diabetes Insipidus.—In a case of diabetes insipidus Rees and Olmsted found that by giving desiccated posterior lobe substance in salol coated capsules the polydipsia and polyuria were as effectively controlled as with hypodermic injections of pituitary extract.

Journal of Parasitology, Urbana, Ill

March, 1922, **8**, No. 3

Herpetomonas Muscae-Domesticae, Its Behavior and Effect in Laboratory Animals. R. W. Glaser, Princeton, N. J.—p. 99.
*Rat Tapeworm, Hymenolepis Diminuta, in Man. W. A. Riley, Minneapolis and W. R. Shannon, St. Paul.—p. 109.
New Myxosporidian Parasite of Channel Catfish, Ictalurus Punctatus. H. S. Davis.—p. 118.
New Rat Tapeworm, Schizotaenia Sigmodontis, from North America. A. C. Changler and C. L. Suttles, Houston, Texas.—p. 123.
Microsporidian Parasite of Nematode. R. Kudo and D. C. Hetherington.—p. 129.
Poisonous Nature of White-Marked Tussock-Moth. H. H. Knight, St. Paul.—p. 133.
Study of Trypanosoma Americanum. R. W. Glaser, Princeton, N. J.—p. 136.
Fluke Infections and Destruction of Intermediate Host. F. C. Baker, Urbana.—p. 145.

Rat Tapeworm in Man.—Riley and Shannon relate the case of an infant, 9 months of age, who was suffering from an intestinal upset, with green, foul smelling stools. The bowel movement contained worm segments. Examination of the stool showed these segments in numbers. In addition to the intestinal upset, the baby had an eczema. The discharged worms agree in every respect with descriptions and specimens of *Hymenolepis diminuta,* except in scolex characters, which were not available. The child had been breast fed, and reared in a good home, in a cleanly environment. The clue to possible sources of infection was obtained when the mother stated that in mid-summer at the age of 7 months it had been allowed to creep on a grassy plot in the yard.

Military Surgeon, Washington, D. C.

April, 1922, **50**, No. 4

Measures for Development of Organization and Extension of Influence of Medical Reserve Corps Systems of Government. M. Ashford, U. S. Army.—p. 363.
Proposed New First-Aid Packet: Study from Medical Department Equipment Laboratory Medical Field Service School, Carlisle Barracks, Pa. J. P. Fletcher, U. S. Army.—p. 394.
War Typhus. A. M. Caccini, U. S. Army.—p. 403
Spontaneous Gangrene of Scrotum J. A. Hawkins, U. S. Army.—p. 419.
Military Use of Intelligence Tests. R. Sheehan, U. S. Army.—p. 423.
Laboratory Survey of Men Attending C. M. T. C. at Camp Jackson. W. C. Cox, U. S. Army.—p. 429.
Basal Metabolism and Basal Metabolic Rate in Disease. S. A. White, U. S. Army.—p. 433.
History of Military Medicine. F. H. Garrison, U. S. Army.—p. 448.

New York Medical Journal

April 19, 1922, **115**, No. 8

Endothermy. G. A. Wyeth. New York.—p. 437.
Constitutional Symptoms of Tuberculosis. A. K. Krause, Baltimore.—p. 441.
Diagnosis and Treatment of Mental Diseases in General Practice. F. X. Dercum, Philadelphia.—p. 446.
Pyogenic Infections of Digestive Tract and Their Biologic Treatment. N. P. Norman and A. A. Eggston, New York.—p. 449.
Reply to Certain Antagonistic Criticism of Nonsurgical Biliary Tract Drainage. B. B. V. Lyon, Philadelphia.—p. 456.
Causes of Loss of Vitreous Humor, Prolapse of Iris and Subsequent Membrane Formation in Cataract Extractions. S. McA. Payne, New York.—p. 466.
External Function of Pancreas and Its Bearing on Surgery of Pancreas. J. J. Gilbride, Philadelphia.—p. 470.
Pathogenesis of Diabetes Mellitus. D. W. Kramer, Philadelphia.—p. 472.
Diabetes Mellitus. A. Z. Wolodarsky, New York.—p. 475.
Diagnosis of Injuries of Soft Structure of Knee Joint. M. Strunsky, New York.—p. 477.
Congenital Deformities. C. E. Coon, Syracuse, N. Y.—p. 478.
Orthopedic Significance of Backache. J. K. Young, Philadelphia.—p. 480.

New York Medical Journal and Medical Record

May 3, 1922, **115**, No. 9

Urologist's Views on Syphilis. C. H. Chetwood, New York.—p. 501.
Two Fundamental Forms of Syphilis. F. X. Dercum, Philadelphia.—p. 504.
Diagnosis of Neurosyphilis. I. H. Pardee, New York.—p. 507.
*Diagnosis of Late Hereditary Syphilis and Lupus in Otorhinolaryngology. G. Portmann, Bordeaux, France.—p. 508.
Transmissibility of Syphilis in the Latent Stage and Insufficient Treatment of Early Syphilis. S. Feldman, New York.—p. 512.
Interpretation of Wassermann Reaction. S. Wallenstein, Baltimore.—p. 514.
Treatment of Gonorrheal Epididymitis. A. Ravich, Brooklyn.—p. 516.
Keratosis Blenorrhagica or Gonorrheal Keratosis. J. E. McDowell, Philadelphia.—p. 518.

*Infection of Kidney. W. C. Quinby, Boston.—p. 520.
Diagnosis and Therapy of Certain Lesions of Urinary Tract. L. Buerger, New York.—p. 523.
Urine Examination as Index of Renal Disease. H. W. Jones, Philadelphia.—p. 531.
Importance of Roentgen-Ray Examination in Early Diagnosis of Renal Calculus. W. T. Schmidt, Philadelphia.—p. 533.
*Contracture of Neck of Bladder. E. Beer, New York.—p. 536.
Worthwhile Tests of Kidney Function. M. F. Morris, Atlanta, Ga.—p. 538.
*Effect of Serial Administration of Silver Arsphenamin on Kidney. D. M. Sidlick and M. L. Mallas, Philadelphia.—p. 540.
*Spider Bite of Glans Penis Simulating an Acute Abdominal Condition. W. S. Woody, Hopewell, Va.—p. 542.
Report on Steinach Operation in Senility and Premature Senility. A. L. Wolbarst, New York.—p. 543.

Diagnosis of Late Hereditary Syphilis and Lupus.—Hybrid cases of syphilis and tuberculosis are most rare, for out of 50,000 observations in the course of fifteen years (1900-1915) at the otorhinolaryngology department of the University of Bordeaux, only five cases are found to be diagnosticated scrofulate de verole, without, besides, the assurance of the laboratory. But in four cases followed by Portmann since that time and which clinically seemed to be luposyphilitic hybrids, thorough laboratory researches have shown that one case was tuberculosis of a lupic form, and the other three were cases which proved to be late hereditary syphilis. Portmann insists on the importance of establishing an accurate diagnosis to avoid the disasters of inopportune therapeutics.

Infection of Kidney Always Secondary.—Quinby stresses the fact that infections of the kidney, whether acute or chronic, blood borne or ascending, are always secondary to a primary focus elsewhere than in the kidney itself. Therefore if a cure can be accomplished by means other than nephrectomy, it will be most assured after this primary focus has been adequately controlled.

Diagnosis of Contracture of Neck of Bladder.—The diagnosis of contracture of the neck of the bladder Beer states is suggested by the youth of the patient in whom the residual urine is found and when the rectal examination shows a small prostate. This suspicion is verified by the cystourethroscopic examination which shows a rather typical picture. The floor of the supramontane urethra (that is, the prostatic urethra between the bladder cavity and the verumontanum), shows directly above the verumontanum a relative falling away (cavity) to be immediately followed by a more or less thick raised bar which forms the inferior circumference to the fibrotic neck. In the typical uncomplicated case there is no lateral lobe enlargement, and this picture, together with the presence of residual urine, makes the diagnosis contracture of the neck which has been regularly disclosed by suprapubic exposure. In Beer's experience, lateral sphincteric obstruction has been rare.

Effect of Silver Arsphenamin on Kidney.—Observation of ten patients who were treated biweekly by Sidlick and Mallas and who were given eight intravenous injections of solution of the silver arsphenamin in doses of 0.2 gm. has convinced them that silver arsphenamin when given intravenously does not cause functional disturbance of the kidney. A nephritic condition, if present in a syphilitic patient being treated with synthetic arsenical compounds, has been acquired prior to treatment.

Spider Bite of Glans Penis Causes Abdominal Symptoms.—About fifteen minutes after being bitten on the glans penis by a spider while seated on a privy hole Woody's patient began to feel pain in his lower abdomen which in a few minutes spread upward to the upper abdomen and lumbar region. This rapidly became worse so that he was obliged to quit work. Fifteen minutes later he was suffering intense agony. The entire abdomen, especially the epigastric region, was hard, of a boardlike rigidity and very sensitive to pressure. The temperature was 98 F., pulse 62, the patient was drenched in a cold perspiration and the whole picture was one of intense suffering. There had been no nausea, vomiting or diarrhea. Retention of urine and complete absence of intestinal peristalsis supervened. These symptoms continued for four days when the patient had a good movement, and voided voluntarily for the first time since being bitten. The improvement in his condition continued to complete recovery. At no time were there any local signs at the site of the bite.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 22, 1922, No. 3199

Radium Therapy. R. Knox.—p. 631.
*Diagnostic Value of Lumbar Puncture in Cerebral and Spinal Hemorrhages. W. Harris.—p. 635.
Simple Goiter. R. McCarrison.—p. 636.
Detachment of Retina, Probably Due to Exposure to Light During an Eclipse. N. B. Harman and P. MacDonald.—p. 637.
*Method of Preventing Puerperal Infection. F. H. Whyte.—p. 638.
Valentine Mott's Aneurysm Needle for Ligature of Innominate and Subclavian Arteries. A. H. G. Doran.—p. 639.
*Trichotillomania Due to Threadworms. H. C. Semon.—p. 641.
Treatment of Influenza by Salicin. E. B. Turner.—p. 641.
Gonococcal Septicemia. J. A. Jenkins.—p. 641.
Acute Diffuse Nephritis in Children. A. R. Sami.—p. 642.

Diagnostic Value of Lumbar Puncture in Cerebral and Spinal Hemorrhage.—In five cases of acute cerebral apoplexy seen by Harris lumbar puncture showed the cerebrospinal fluid to be intimately mixed with an opaque with blood. In only two of these cases had cerebral hemorrhage been suggested as the cause of the mental confusion or coma, urema having been diagnosed in two of the cases, and lethargic encephalitis in the other. The latter patient lived for fifteen days after the rupture of a small aneurysm on one anterior cerebral artery. The extreme diagnostic value of blood mixed with the cerebrospinal fluid removed by lumbar puncture is emphasized.

Preventing Puerperal Infection.—The method described by Whyte depends on the fact that the germs present and unsterilizable on the walls of the lower genital tract and neighborhood may be passed over and not pushed higher up when making a vaginal examination or introducing the hand into the uterus by using specially devised apparatus consisting of two funnels and a repositor. Contact with the tissues is prevented by working inside of the funnel.

Trichotillomania Due to Threadworms.—A 6 year old boy was first noticed to pull out his hair when 3 years of age, and the habit had become severe enough to produce considerable disfigurement. The scalp was denuded mainly in the left frontal area, and epilation was mostly with the right hand, and at times done quite subconsciously, so that the child would simultaneously "play with a toy with his left hand and pull out his hair with the right." The habit was not practiced during sleep, and there was nothing to suggest that local pruritus in any way disturbed him. Latterly he had been turning his attention to his mother's hair. The scalp itself appeared to be somewhat deficient in sebaceous secretion, but was not otherwise abnormal or irritated, and the hairs which Semon epilated (without protest) showed no evidence of dystrophy or other nutritional disturbance. Inquiry elicited the fact that the appetite was exceedingly capricious, and that threadworms had been noticed in the stools, and treated ineffectively from time to time since the age of 18 months. Under anthelmintic treatment a complete cure was effected.

April 29, 1922, **1**, No. 3200

Influence of Industrial Employment on General Health. M. Greenwood.—p. 667.
*Excision of Head of Femur in Arthritis Deformans (Osteo-Arthritis) of Hip-Joint. H. Platt.—p. 672.
*Etiology and Treatment of Diabetes. A. Renshaw and T. H. Fairbrother.—p. 674.
*Fragilitas Ossium Associated with Blue Sclerotics in Four Generations. J. B. Alexander.—p. 677.
Recognition and Treatment of Minor Degrees of Fibrositis. T. Marlin.—p. 677.
Case of Osteitis Deformans. J. Lindsay and R. G. Gordon.—p. 678.
"Pernicious Anemia," Aplastic or Toxic. J. F. Rey.—p. 679.
*Local Application of Tuberculin. J. Crocket.—p. 679.
Abdominal Form of Influenza D. A. Rice and H. O. Williams.—p. 680.

Excision of Head of Femur in Osteo-arthritis.—The operation described by Platt involves the following steps: (a) The removal of the overhanging mushroomed portion of the femoral head, leaving the stump of the neck of a reasonable length and with a slightly expanded upper end rounded off so as to simulate a new head; (b) the stump of the neck is brought deeply into the acetabulum by fully abducting the limb; (c) the great trochanter, which has been detached as an integral step in the exposure of the hip-joint, is reattached to the femoral shaft at a lower level, thus acquiring a position of mechanical advantage. In removing the femoral head it is necessary to use a wide osteotome with a curved shaft in order to reproduce the rounded stump of the neck. The surface of the cancellous tissue thus exposed, after being smoothed off by filing, is thoroughly impregnated with Horsley's wax. The same procedure is carried out in the raw area left by the detachment of the trochanter. In addition, this latter area is covered by a small aponeurotic flap elevated from the vastus externus and turned upward, leaving bare the femur in the region where the trochanter is to find its new site. With regard to the approach to the hip-joint used in this operation, in Platt's experience the posterolateral route described by Brackett is the most adequate.

Bacteriology of Diabetes.—From the stools of diabetics a new organism (*B. amyloclasticus intestinalis*) has been isolated by Renshaw and Fairbrother which splits up starchy foods, forming oxybutyric acid, diacetic acid, butyl alcohol, and acetone. Sugar is also formed during this fermentation. Acetone has also been found in quantities capable of estimation in the stools of diabetics. The authors suggest that in diabetes carbohydrate fermentation occurs in the alimentary canal, forming abnormal products which probably so affect the glycogenic function of the liver as to lead to improper storage therein of the glucose from the alimentary canal during digestion. Definite lines of treatment include elimination or suppression of this organism.

Heredity of Blue Sclerotics.—Alexander cites a case of a boy, aged 7, who had blue sclerotics and who had had many fractures. The mother showed very deep blue sclerotics but had not had fractures. Her hearing was defective. The patient's two sisters also presented blue sclerotics, with, however, no history of fractures. The patient's mother's sister had sustained seven fractures during her life and had deep blue sclerotics. The grandmother and great-grandmother had both been the subjects of fragile bones and blue sclerotics. No further history of these phenomena was forthcoming in prevous generations.

Use of Tuberculin Ointment in Tuberculosis.—In addition to using tuberculin hypodermically in pulmonary tuberculosis, Crocket has for several years been using it locally—in gland cases, in lupus, and in abdominal tuberculosis particularly—with excellent results. The tuberculin is made up in an ointment, using anhydrous lanolin as a basis when lupus or adenitis is treated. It is made up in the form of a liniment when dealing with abdominal disease or pulmonary tuberculosis. The strength of the preparation varies according to the reactive power of the patient, the aim being to secure a definite reaction at the site into which it is rubbed, the reaction being indicated by a roughening, a reddening, or a papular eruption on the skin. The ointment or liniment should not be strong enough to produce a general reaction, as indicated by an increase of temperature, anorexia, or malaise. Kochs' old tuberculin T. or P. T., or preferably equal parts of both, is used. Crocket is convinced that tuberculin is the deciding factor. The results are lacking in most of the cases if it be omitted.

Indian Journal of Medicine, Calcutta

March, 1922, **3**, No. 1

Cases of Intestinal Worms. P. Gupta.—p. 1.
Inguinal Herinotomies Under Local Anesthesia (Apothesine). W. V. Kane.—p. 3.
Epidemic Dropsy. B. K. Bhowmick.—p. 6.
H-Ion Concentration of Blood. P. Ganguli.—p. 12.
Lamellibranchiate Mollusks. E. Ghosh.—p. 20.
Pituitary Body. S. C. Sengupta.—p. 25.

Indian Medical Gazette, Calcutta

April, 1922, **57**, No. 4

Laboratory Records from Mesopotamia. No. 3. Cholera. F. P. Mackie and G. Trasler.—p. 121.
*New Form of Cutaneous Leishmaniasis: Dermal Leishmanoid. U. N. Brahmachari.—p. 125.
Dermal Leishmaniasis (Brahmacharii). J. W. D. Megaw.—p. 128.
Normal Indian Infant During First Year. D. F. Curjel.—p. 128.
Tennis Elbow. L. Cooke.—p. 130.
*Epidemic of Anasarca in North Andamans. A. B. de Castro.
Two Cases of Tropical Abscess of Liver Rupturing into Abdomen. A. S. Fry.—p. 135.
Electric Ionization and Nose Operations. K. N. Pradhan.—p. 137.
*Diluted Phenol Injections in Hydrocele. R. E. Hoffman.—p. 138.
Case of Rat Bite Fever in Shillong. B. M. Gupta.—p. 139.
Accessory External Ear. P. Bose.—p. 139.

Cutaneous Leishmaniasis.—The usual result of antimonial treatment of kala-azar is: (1) cure; (2) apparent cure followed by a relapse, or (3) no improvement. A fourth result may follow and that is what happened in the four cases reported by Brahmachari. The visceral leishmania may be left behind with their virus so attenuated that they gave rise to a milder disease, namely, cutaneous leishmaniasis.

Epidemic of Anasarca.—De Castro reports on an epidemic of anasarca, with some gastro-intestinal disturbance, followed by syncope and death. The prominent and most constant symptoms were: swelling of feet, congestion of fauces, palpitation, breathlessness on exertion, hemaralopia, digestive disturbances, diarrhea or constipation, or blood or mucus in stools, swollen, spongy or bleeding gums, heaviness in legs, scanty high colored urine, highly acid, albumin rare; distressing dyspnea, dilation of heart; stomach enlarged. The onset of death is sudden and rapid. In nearly all cases it took place within two hours from onset of the cardiac dyspnea. A constant and fatal symptom was pain in the loins over one or both kidneys. Prominent postmortem conditions were: serious effusion in pleura, pericardium or peritoneum; dilated heart; kidneys enlarged and congested, in one case hemorrhage into the hylum; lungs engorged; stomach, large and small intestines showed a few points of inflammation. Bladder nearly always empty and contracted. Death in diastole. Mortality was about 16 per cent.

Phenol Injections in Hydrocele.—Hoffman has obtained good results in the treatment of hydrocele from the injection of from 1 to 8 c.c. of a mixture of phenol one part and alcohol two or three parts. It is said to be a most satisfactory treatment for all hydroceles not complicated by hernia or larger than an ordinary orange. Sacs even larger than this may be cured if they are thin, but greatly enlarged and thickened ones should be dealt with by open operation. The discomfort from the injection has usually been so small that the patient readily returns for another injection, but an interval of at least three months should be allowed.

Japan Medical World, Tokyo

April, 1922, **2**, No. 4

Leukocytosis Produced by Injection of India Ink Emulsion. K. Nagawo.—p. 93.
*Experimental Researches on Absorption of Fat in Stomach. S. Hirayama.—p. 101.
Action of Sodium Citrate on Phagocytosis of B. Influenzae. S. Amaya.—p. 106.

Absorption of Fat in Stomach.—In all animals examined, whether young or mature, certain hours after fat feeding, Hirayama found that the fat in the epithelium of the mucosa gradually began to increase, penetrating into the deep layer, showing that the epithelium of the stomach mucosa is able to absorb fat. This property differs a little according to the kind of animal, and even in the same stomach at different parts. In mammalia, absorption is the most active in the pyloric portion and in the cold blooded animal in the fundus portion. In mammalia, absorption begins about two or three hours after fat feeding, and in fourteen or fifteen hours it attains its height, completely returning to the former state in about twenty-four hours. In case of cold blooded animals the absorption commences about twelve hours after fat feeding, and in forty-eight or sixty hours the increase reaches its height, and in about eighty or ninety hours it is completely brought back to the former condition. Fat globules in the gland cells are increased almost parallel with the increase of fat in the epithelium, but in a smaller quantity.

Journal of Pathology and Bacteriology, Edinburgh

April, 1922, **25**, No. 2

Constitution of Normal Hemolysin of Ox Serum for Guinea-Pig Blood; Filtration Experiments and Conglutination. N. Yoshinare.—p. 153.
Bactericidal Action on Calf Lymph of Certain Triphenylcarbinol Dyes and Their Leuko-Compounds: Immunity and Hypersensitiveness Toward Vaccinia Variolae. M. Coplans.—p. 173.

Precipitins and Etiology of Serum Sickness. S. Wyard.—p. 191.
Gastric Glands in Extroverted Distal End of Vitelline Duct. G. W. Nicholson.—p. 201.
Histology of Destructive Changes in Itceric Livers. E. Schwarz, New York.—p. 207.
*Fat of Adipose Tissue in Malignant Disease. A. N. Currie.—p. 213.
*Effect of Thyroid Feeding on Bone Marrow of Rabbits. R. K. S. Lim, B. B. Sarkar and J. P. H. Brown.—p. 228.
*Complement-Fixation Tests in Diagnosis of Tubercular Infections. A. Sellers and E. N. Ramsbottom.—p. 247.
Proteolytic Enzyme of Bacillus Pyocyaneus: Inhibition Produced by Normal and Immune Serum. C. E. Dukes.—p. 258.
Mechanism Maintaining Negative Pressure of Pleura and Influencing Absorption. T. W. Wadsworth.—p. 266.
Wassermann Test with Prolonged Fixation at Icebox Temperature. Note on Tests with Bordet's Antigen. E. J. Wyler.—p. 271.
Case of Acute Ulcerative Endocarditis in Child Aged Three and a Half Weeks. J. E. M'Cartney.—p. 277.

Iodin Value of Adipose Tissue Fat in Malignant Disease.—A constancy in iodin value of normal adipose tissue fat from any part of the body was found by Currie. In malignant disease, there are marked differences in the iodin value of adipose tissue fat, these differences being dependent on the nature of the disease and the locality relation of the adipose tissue to the seat of disturbance. The fatty unsaturation finds its highest expression in local carcinomatous fat; fats local to sarcoma and chronic inflammatory lesions being intermediate between normal and carcinomatous as far as the iodin value expression of the change is concerned. A degradation relationship based on an iodin value classification was found to exist for adipose tissue fat.

Effect of Thyroid Feeding on Bone Marrow.—An attempt at a detailed cytologic examination of the bone marrow was made by Lim and associates. Young rabbits were used. Thyroid feeding invariably caused an increase of the polymorphonuclear percentage and a diminution of the small mononuclears, which is best marked in young individuals. In older animals, and on continuing the treatment, the polymorphonuclear percentage falls and may become subnormal, while the mononuclear percentage recovers and may be above normal. The actual number of polymorphonucleus is raised and lowered similarly to the percentage figure, but no decrease below the normal is ever found even after prolonged feeding. In the case of the small mononuclears, there is little or no actual decrease of their number, but in adults and after continued feeding their number may greatly exceed the normal. Daily doses of from 0.25 to 0.5 gm. per kilo of thyroid increase the total number of marrow cells, but larger doses may not do so; the qualitative changes are, however, always similar. Blood counts, red slightly and white more distinctly, are raised in young individuals only; no change occurs in older animals except after prolonged feeding when a slight fall may occur. The differential count shows a marked relative polymorphonuclear increase in the young, and a transitory and less marked polymorphonuclear increase in the adult. The mononuclear percentage shows a fall when the polymorphonuclear percentage rises, but it does not show any rise above the normal even after prolonged feeding. These changes are not so constant in animals given a heavy dose of thyroid. The significance of these changes is discussed, and it is suggested (*a*) that the marrow is stimulated to activity, resulting in the increased production of polymorphonuclears and small mononuclears, according to the age of the animal. The mononuclears, however, do not reach the circulation as such, since there is never any obvious increase in the number of blood mononuclears after prolonged thyroid feeding. They must, therefore, undergo development into another type, viz., erythroblasts and eventually erythrocytes. (*b*) That increased production in the marrow should lead to an increase of the corpuscles in circulation. This is not evident from the blood counts, but may be masked by some such factors as an increased destruction of cells, an increased blood volume, circulatory changes, etc. (*c*) That the marrow mononuclears are not responsible for the supply of mononuclears to the blood stream and therefore do not function as lymphocytes.

Complement Fixation Tests in Tuberculous Infections.—Observations were made by Sellers and Ramsbottom with the object of getting some evidence on the diagnostic value of complement fixation tests in children. The results agree, on the whole, with those of other observers. The authors are not satisfied that complement fixation tests afford a reliable means of clinical diagnosis in tuberculosis cases. They suspect that in some cases of doubtful or clinical tuberculosis, giving positive reactions, the diagnosis was fallacious. Apart from technical difficulties there are serious objections to the application of the test for clinical diagnosis. In tuberculosis fixation tests, the possibilities of group reactions cannot be disregarded. Also the positive results obtained by some authorities with nonspecific antigens, and the work of Forssmann and others on heterophile antibodies, suggest that a positive result is not always proof of a tubercular infection.

Journal of Tropical Medicine and Hygiene, London

April 15, 1922, **25**, No. 8

Hatching and Migration in Mammalian Host of Larvae of Ascarids Normally Parasitic in Cold-Blooded Vertebrates. R. J. Ortlepp.—p. 97.
*Vibriothrix Zeylanica (Castellani, 1904). I. Iacono.—p. 100.

Vibriothrix in Dysentery.—From a case of dysentery a pleomorphic germ was isolated by Iacono which microscopically showed the morphologic characters of a vibrio, a bacillus and a spirillum. From the results of the microscopic and cultural investigation, the author concluded that the organism is *Vibriothrix zeylanica* Castellani. This organism, as already noted by Castellani, Taylor, Anigstein, and others, is not pathogenic, but has a certain practical importance for the clinical bacteriologist, as on superficial examination it might be mistaken for a germ of the true dysentery group as its colonies on colored special medium such as MacConkey, Drigalski-Conradi, Endo, etc., are extremely similar to those of the dysentery bacilli, and it does not produce gas in any sugar medium.

Lancet, London

April 22, 1922, **1**, No. 16

Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 775.
*Experimental and Clinical Comparison of Therapeutic Properties of Different Preparations of Neo-Arsphenamin. H. H. Dale and C. F. White.—p. 779.
*Corpus Luteum in Its Relation to Toxemias of Pregnancy. R. L. M. Wallis and H. G. E. Williams.—p. 784.
Apparatus for Measurement of Small Quantities of Fluid. J. W. Trevan.—p. 786.
Rupture of Cesarean Section Scar. W. R. Mackenzie.—p. 786.
*Tests of Renal Efficiency. F. Kidd.—p. 788.
*Case of Large Urachal Cyst. G. H. Edington.—p. 791.
*Surgical Treatment of Cholelithiasis. J. O'Conor.—p. 792.
*Case of Carcinoma of Lung of Unusual Duration. A. J. S. Pinchin.—p. 792.
Case of Ectopic Gestation Complicated by Suppurative Appendicitis. M. E. Landau.—p. 793.

Comparison of Therapeutic Action of Different Preparations of Neo-Arsphenamin.—The chief conclusion reached by Dale et al. is that the determination of the therapeutic action of neo-arsphenamin on mice infected with trypanosomes is, at least, a very valuable index, if not an accurately quantitative measure, of the therapeutic activity of different samples on syphilis in man. The method has, accordingly, been put into routine use in the Medical Research Council's Department of Biological Standards at Hampstead, an occasional check of therapeutic activity being thus imposed, in addition to the regular testing of every batch of such products for absence of undue toxicity.

Relation of Corpus Luteum to Toxemia of Pregnancy.—From the corpus luteum a chemical compound has been isolated by Wallis and Williams which produces necrosis, and other changes in animals very similar to those found in the toxemias of pregnancy. This substance is not present in the placenta nor in a hydatidiform mole. The overproduction of this toxic substance is said to be the cause of the toxemias of pregnancy, and the results emphasize the important functions of the corpus luteum in pregnancy. The presence of a hypercholesterolaemia, i e., an excess of cholesterol in the blood in pregnancy—is significant, especially as the increase occurs about the fourth month and at a time when the corpus luteum is most active. The blood remains charged with cholesterol until a varying period after labor. In eclampsia much higher figures for cholesterol are found than in normal pregnancy. Further, it has been shown that injections of corpus luteum extract increase the cholesterol content of the blood. In the authors' opinion the presence of excess of cholesterol is of great significance, and they suggest that it represents an attempt on the part of the body to neutralize the toxic substance elaborated by the corpus luteum. The results of these investigations throw light on the association of activity of the corpus luteum with many of the clinical manifestations of pregnancy, and further form the basis of a new test for pregnancy.

Indigocarmin Test of Renal Efficiency Best.—Kidd considers the indigocarmin test of renal efficiency the test *par excellence;* and in surgery he believes that two classes of tests will survive the probation of time and experience—namely, the dye tests (indigo and phthalein), and the blood-urea and urea-concentration tests for prostatic and doubtful bilateral kidney disease. Kidd advises that no surgeon should operate on kidneys and prostates who has not had a good clinical training in the use of tests of renal efficiency.

Urachal Cyst.—In the case reported by Edington the points of special interest were: the history of digestive disturbance as evidenced by sialorrhea relieving the feeling of weight; the very spare condition of the patient, and the slowness of micturition. As regards the cyst itself, although of large size, measuring 13 by 9 cm., it had not formed any troublesome relationships with or attachments to any of the neighboring viscera. Removal was therefore not only possible but comparatively easy. Another interesting point is that, without there being any communication with the interior of the bladder, the fluid contained urea. The difficulty in bringing together at the close of the operation the irregularly divided peritoneum has been noted by other operators.

New Cholecystectomy.—O'Conor describes in detail a method of cholecystectomy which he says is simple in execution, which admits of operative rapidity in a zone where indecisive manipulation is likely to wind the patient, which reduces hemorrhage to a minimum, and which, from start to finish, gives the operator mastery of the situation.

Carcinoma of Lung.—The case described by Pinchin is of interest from two points of view: first, the length of the history—four years from the first symptom; second, the facts that the man had been under the observation of so many physicians at hospital and elsewhere, that the diagnosis of tuberculosis was allowed to rest, and that a diagnosis of neoplasm was apparently entertained.

Medical Journal of South Africa, Johannesburg

March, 1922, **17**, No. 8

*Splenic Abscess. A. F. Wallace.—p. 155.
Case of Urticaria. Sensitive to B. Diphtheroid and Staphylococcus Albus. R. L. Girdwood.—p. 157.
Latent Sinusitis. H. Bodkin.—p. 158.

Abscess of Spleen.—Forty-nine cases of abscess of the spleen are reviewed by Wallace. Nineteen patients were operated on: the other thirty died outside the hospital and the condition was discovered at necropsy. Four of the patients operated on died. All the patients were South African natives. The typical history of a case is as follows: The patient, who has apparently been in good health, is suddenly taken ill with a high temperature, headache, and pains in the neck and body generally. This continues for two or three days, and the patient begins to feel better. His temperature may subside to normal and the headache and pains go. Then he complains of pain in the spleen and on examination the spleen will be found to be enlarged and tender. If the spleen does not rupture, which is the commonest result, it continues enlarging and becomes tympanitic. In a late case the spleen may practically fill the whole abdomen. The spleen appears to be invariably adherent to the abdominal wall and the abscess can be cut boldly into and drained. From a big abscess Wallace has removed as much as 8 pints of pus. An abdominal tumor which corresponds in position and shape to an enlarged spleen and which is tympanitic on percussion Wallace says is pathognomonic of this variety of splenic abscess.

Quarterly Journal of Medicine, Oxford

April, 1922, No. 59

*Reaction of Blood in Relation to Dyspnea. F. R. Fraser. J. P. Ross and N. B. Dreyer.—p. 195.
*More Remote Prognosis in War Nephritis. S. C. Dyke.—p. 207.
*Syphilis of Stomach. J. W. McNee—p. 215.
*Excretion of Potassium Iodid in Urine in Health and Disease: Its Use as Test of Renal Function. G. C. Linder.—p. 227.
Researches on Complement Fixation Reaction in Hydatid Disease. N. H. Fairley.—p. 244.

Reaction of Blood and Dyspnea.—Fraser et al. found that in cases of heart failure with valvular disease the reaction of the blood is more alkaline than normal. Dyspnea is found associated with alkalemia as well as with acidemia. Pronounced acidemia may be present without dyspnea.

Prognosis in War Nephritis.—From the facts presented by Dyke it is apparent that 70 per cent. of cases of war nephritis at all ages terminate in complete recovery before the lapse of twelve months from the onset. The proportion of cases so terminating in recovery is slightly higher under 35 than over. Of patients not fully restored to health by the end of twelve months from the onset, the great majority become chronic nephritics. The occurrence of clinical symptoms of "uremia" at the onset has no unfavorable significance as regards the later prognosis. In cases becoming chronic, there is a tendency for a fatal issue to be determined by circulatory or respiratory conditions. The proportion of deaths from pulmonary tuberculosis among patients in the chronic stage is high.

Syphilis of Stomach.—The case recorded by McNee illustrates the chief clinical and pathologic facts in the commonest variety of syphilis of the stomach which arises as a submucous gumma. A particularly interesting point was the discovery of abundant spirochetes in an actively developing part of the lesion. From a brief historic survey of the literature it is evident that the prognosis in such gummatous lesions of the stomach is good when antisyphilitic treatment is employed. The literature also shows that this is the most frequent form of an uncommon variety of visceral syphilis.

Excretion of Potassium Iodid in Urine.—The iodid test according to Linder is a reliable indication of nephritis when the excretion falls below 35 per cent. In certain cases of nephritis it is the only test of function which shows that there is renal damage. It is a sign of good prognosis in nephritis when the excretion remains unimpaired thoroughout; of fair prognosis when it recovers after being impaired, especially if this occurs after a short space of time; and of bad prognosis and of advanced structural damage when it remains indefinitely in the region of 25 per cent. A reduction of the output to 15 per cent. or less is a sign of very advanced progressive disease, and often foretells an early death. In certain cases it may be an aid in treatment, indicating a less advanced stage of recovery than can be recognized by the clinical signs and other function tests. In a few of Linder's cases there was a slight degree of iodism, but in no case was there any sign of deleterious effect on the kidneys, such as return of hematuria, casts, or edema.

Annales de Médecine, Paris

March, 1922, **11**, No. 3

*Pulmonary Congestion. F. Bezançon and S. I. de Jong.—p. 177.
*Tetragenus Osteo-Arthritis. A. Broca and M. Nathan.—p. 193.
*Tetragenus Septicemia. A. Coyon and J. Lavedan.—p. 209.
Pulmonary Sclerosis versus Fibrous Tuberculosis. Dumarest.—p. 219.
*Postsystolic Venous Pulse. P. Lechelle and M. Mouquin.—p. 232.
*Radiotherapy of Cancer. S. Laborde.—p. 237.

Congestion of the Lungs.—Bezançon remarks that this term is generally applied to all the manifestations in lungs and pleura which are neither well defined bronchitis, pneumonia or pleurisy. He classifies them as true congestion of the lung, acute broncho-alveolitis, and cortical pleuritis. The only true "congestion" is the sudden, rapidly fatal disturbance in alcohol, absinthe and hydrocyanic acid poisoning, snake bites, eclampsia, diabetes, heat stroke and freezing. The anatomic lesion is intense hyperemia in the lung, with actual hemorrhages. Cortical pleuritis is generally of tuberculous origin when it is more than briefly transient.

Tetragenus Osteo-Arthritis.—Broca and Nathan's six cases illustrate the variety of the clinical pictures which this disease may assume, in young and old. The lesions are of slow, torpid development, occasionally flaring up. The focus was cleared out and an autogenous vaccine used, with apparent cure to date in one case. In another, the fistula became infected and the vaccine soon lost its efficacy, but neoarsphenamin completed the cure. In other cases no benefit from this drug was apparent.

Tetragenus Septicemia.—The infection began with a large furuncle in the lumbar region of the young man, and the septicemia ran its fatal course in a month. The tetragenus was found in a pure culture. Some years before there had been a tuberculous abscess in the thigh.

Postsystolic Venous Pulse.—In the elderly woman with mitral stenosis the varicose saphenous veins showed a postsystolic venous pulse, which Lechelle seeks to explain.

Contraindications for Radiotherapy of Cancer.—Laborde discusses what we now can expect from roentgen and radium treatment of cancers, the sensitivity of different tissues and cancer structures, and the causes of failure and mishaps. Nevus cancers seem to be not only refractory but to be aggravated by radiotherapy, with the technic applied to date. It seems that the presence of pigment in a cancer warns to refrain not only from radiotherapy in all forms but also from operative measures; Laborde emphasizes this fact, which does not seem to be generally known. Nothing but electrolysis can arrest the progress of these tumors, and this only when applied early. Resection and radiotherapy have always seemed to speed up malignant disease with pigmentation. Another contraindication emphasized is that with deep involvement of the wall of the esophagus or other organ, radiotherapy will only hasten the end by inducing perforation of the organ. Intense anemia and cachexia render the patient unable to stand the resorption of toxic products generated by the exposures. Metastasis, unless this also is amenable to the rays, should contraindicate radiotherapy. The retrogression of the principal tumor often speeds up metastasis, and thus only shortens life.

Archives des Maladies du Cœur, Etc., Paris

March, 1922, **15**, No. 3

The Mechanism of Asystolia. A. Moukhtar.—p. 113.
*Intermittent Acceleration of Sinus Rhythm. J. de Meyer.—p. 122.

Intermittent Sinus Irregularity. — De Meyer describes a special sinus arrhythmia marked by intermittent accelerated and normal pulsations, which has none of the features of respiratory arrhythmia. Orthodiagraphy confirms that the heart is exceptionally small and the clinical findings indicate hypothyroidism. Thyroid treatment tends to restore a more regular beat. He gives a number of electrocardiograms from such cases.

Archives de Médecine des Enfants, Paris

February, 1922, **25**, No. 2

*The Toxic Phenomena in Toxicosis. P. Rohmer and R. Lévy.—p. 65.
*Mongolism. Mathilde de Biehler.—p. 81.
*Absence of Hepatic Duct. P. Nobécourt and H. Janet.—p. 90.
*Familial Diabetes. P. Lereboullet, G. and J. Blechmann.—p. 94.
*Varicella and Herpes Zoster. Dumoutet.—p. 97.
*Hemolytic Jaundice in Children. J. Comby.—p. 99.

The Toxic Phenomena of Cholera Infantum.—Rohmer and Lévy report from the children's clinic at Strasbourg experiences which apparently establish that the intestinal walls of infants with toxicosis may become pathologically permeable for crystalloids and colloids, but that this permeability is not constant nor intense enough to explain alone the toxic phenomena of cholera infantum. The intestinal walls proved equally permeable in some others tested that were healthy or had other diseases, and in 3 of the severer cases of toxicosis the intestinal walls were not permeable. The 18 infants were tested by ingestion of saccharose or by ingestion of 10 to 20 c.c. of diphtheria antitoxin added to the first 200 gm. of tea fed to the infants with severe cholera infantum and the 6 controls, the blood examined before and sixteen to twenty hours later for the antitoxin units. From 1 : 300 before, it became 1 : 100 or from 0 it became 1 : 20. In 2 there was 0 before and after, and in 1 the figure before and after was 1 : 300. In 3 other infants with dysentery or severe dyspepsia there was no change, the figure 1 : 100 or 0 persisting unmodified. Tests with saccharose always paralleled these findings.

Mongolism in Children.—De Biehler's study of mongolism is based on 5 cases, all boys but one. Two were brothers. All were nervous and restless, differing from myxedema in this as well as in the nonresponse to thyroid treatment, and the appearance. Most mongolians succumb in early life to intercurrent disease. They are not all actual idiots, but they learn by imitation, especially writing, gardening, etc. The father or mother was tuberculous in 3 of the 5 cases; in another the mother was 42 and this was her eleventh child, and there had been three abortions. Thyroid treatment seems to hasten the general and mental improvement, as in one of her cases, but others have failed to note any benefit.

Jaundice from Congenital Malformation.—The child with congenital jaundice survived for seven months although necropsy revealed a total lack of any outlet duct from the liver.

Familial Diabetes in Children.—The fourth child in the family died at 7 in diabetic coma, nine months after the first symptoms of diabetes. The sixth child developed diabetes at 9, and it proved fatal in five weeks although the child had been frail for two or three years before but no glycosuria could be discovered. Fifteen days after an appendicectomy sugar appeared in the urine, up to 200 gm. in the twenty-four hours. The parents were healthy, with no history of diabetes.

Zona and Varicella.—Dumoutet is in charge of an isolated sanatorium for children, and there had long been no cases of chickenpox in the vicinity when five cases developed within three days. There had been a case of zona in a group of newly arriving children twenty days before.

Hemolytic Jaundice in Children.—Comby's review of recent literature confirms the comparatively good prognosis of primary congenital hemolytic jaundice. The acquired primary forms are graver. All medical treatment to date has failed, but repose for body and mind, nourishing food and hygiene may be usefully supplemented with splenectomy. The recoveries after splenectomy outnumber the cases in which it has failed to relieve. Calnet in 1917 had compiled 47 cured or improved in 54 cases of chronic jaundice with splenomegaly. Bénard mentions 5 deaths in his compilation of 48 cases. Before attempting splenectomy, radiotherapy might be given a trial; successful cases with it have been published by Benjamin, Parisot (1913) and Jona (1916).

Journal d'Urologie, Paris

March, 1922, **13**, No. 3

*Hemostatic Action of Radium. G. Marion.—p. 161.
*Phenolsulphonephthalein Test in Urinary Surgery. Tardo.—p. 167.
*Tuberculous Kidney-Lung Fistula. C. Roubier.—p. 195.

Hemostatic Action of Radium.—Marion says that he has found radium exposures a dependable means for arresting hemorrhage from tumors in the bladder or urethra. In the seven such cases he describes in detail the effect was prompt, and the tumors shriveled or they could then be destroyed with the electric current. Before this, any attempt at cystoscopy for local treatment had induced such profuse hemorrhages that it had to be abandoned. The hemostatic exposure was with 10 cg. introduced in the tip of a sound into the bladder, and left for twelve hours. His series includes one case of inoperable cancer of the bladder; the others were bleeding polyps.

The Phenolsulphonephthalein Test in Urinary Surgery.—Tardo contends that the findings with this test have the same clinical value as the Ambard index and surpass it in reliability and convenience. He gives nine tables showing the findings in detail in different types of cases among the 245 patients thus tested.

Tuberculous Kidney-Lung Fistula.—The latent tuberculosis of the right kidney had induced a perinephritis cold abscess which had perforated into a bronchus. The vomica was the first sign of trouble. The subphrenic abscess was cleared out but the kidney disease was not recognized until too late for nephrectomy.

Médecine, Paris

April, 1922, 3, No. 7

Obstetrics and Gynecology in 1921. L. Devraigne.—p. 485.
*Colpotomy. J. L. Faure.—p. 495.
*Oxytocics. Commandeur.—p. 496.
*The Stump of the Uterus. Keiffer.—p. 502.
*The Modern Well Infants' Asylum. V. Wallich.—p. 506.
*Post Partum Intra-Uterine Injections. Potocki.—p. 511.
*Radium Treatment of Metritis. P. Descomps.—p. 518.
*Urinary Disturbance from Uterine Fibroma. L. Gernez.—p. 519.
*Retroversion of the Uterus. M. Deniker.—p. 523.
*Cancer of Body of Uterus. P. Guéniot.—p. 525.
*Age of Fetus. M. Duvoir.—p. 530.
*Salpingitis and Appendicitis. H. Duclaux.—p. 531.
*Vomiting of Pregnancy. V. Le Lorier.—p. 535.
*Oscillometer in Obstetric Practice. P. Balard.—p. 537.
*Masked Treatment of Syphilis. G. Sauphar.—p. 542.
*Albuminuria in the Pregnant. R. Daunay.—p. 544.

Colpotomy.—Faure remarks that incision of the posterior vagina, releasing pus at the lowest point, often arrests instantaneously the gravest clinical pictures from acute adnexitis. But the opening must be large, and allow passage of two drains, at least for the first few days. This is practically the only indication for colpotomy except for old accumulation of blood in the pouch of Douglas.

Oxytocics.—Commandeur ranks sugar first among the harmless oxytocics; it combats the inertia toward the close of labor, when the uterus musculature has used up its supply of glycogen. He has often used it to good advantage, but it does not always have an appreciable action. He gives quinin during the first stage of labor, and with retention after abortion, giving two cachets of 0.5 gm. with a thirty minute interval, and repeating one or two hours later. He adds that new research is necessary on ergot to find some way to give it that will avoid its present dangers. To date, he says, the only safe rule is not to give ergot as long as there is anything in the uterus. The action of this "king of oxytocics" is not an intermittent, rhythmical contraction, but actual contracture. Pituitary extract requires caution as the uterus reacts differently in different persons. In about 20 per cent. there is no response to it; in others a whirlwind of contractions follows. He never uses it unless the path is clear for delivery, and there is no disproportion between fetus and birth passage, and labor has stopped from pure inertia of the uterus. Then it can be given in a small dose, testing the susceptibility of the patient, unless heart disease with failing compensation, eclampsia, albuminuria or disease with high blood pressure contraindicates pituitary extract.

The Stump of the Uterus After Subtotal Hysterectomy.—Keiffer declares that it is remarkable that the cervix so seldom causes disturbance after amputation of the uterus. There may be necrosis or nervous metritis or infiltration of the parametrium with adhesions, or there may be contracture of the ligaments. Hot hydrotherapy and glycerin dressings are called for with infiltration of the parametrium, but contracture of the ligaments with radiating pain yields only to tepid hydrotherapy, sedative enemas at night and light massage, gently stretching the uterosacral, vesico-uterine and broad ligaments twice a week. If the cervix stump has to be removed, this requires access by both abdomen and vagina.

The Pouponnière.—Infants less than a year old that have to be separated from their mothers and fed artificially are cared for by the Woman's Entr'Aide Society in a special asylum managed on the principle that only healthy normal infants less than a year old are admitted. Every infant is isolated for three weeks after its admission, and any child that is taken sick is isolated at first and then sent elsewhere. Five of these institutions are already organized at Paris, and Wallich regards this form of infant asylum as great progress. The mortality has been only 3 per cent. among these little *séparés*. When the infants begin to walk and play with other children, then they can be boarded out with greater safety, and the pouponnière turns them out when they are a year old.

Postpartum Intra-Uterine Injections.—Potocki explains that when these injections become necessary, they require as scrupulous care as an operation. He describes the minute technic.

Radium Treatment of Cervical Metritis.—Descomp's invariable success in a limited experience has convinced him that two or three radium needle applicators inserted in the lips of the cervix is an excellent treatment for old chronic inflammation limited to the cervix. This is better than dilating the cervix to introduce an applicator, as any mechanical action aggravates the inflammation.

Urinary Disturbances with Uterine Fibromas.—Gernez recalls that a fibroma is liable to induce disturbances in the urinary apparatus like those from a gravid uterus. With functional urinary phenomena in women the genital apparatus should be examined with scrupulous detail. A fibroma in the uterus—possibly unsuspected—may be responsible for irritable bladder or retention. The latter is often associated with tenesmus, constipation and hemorrhages in these cases.

Surgical Treatment of Retroversion of Uterus.—Deniker advocates obliterating the pouch of Douglas to ward against recurrence after ligamentopexy. Whatever technic for shortening the ligaments is applied, he urges the abdominal route. This allows revision of the appendix and adnexa, and it also allows the obliteration of the pouch of Douglas, thus leaving no chance for the displacement to return. It is easily accomplished by suturing together the uterosacral ligaments.

Cancer of Body of the Uterus.—Guéniot contends that instead of thinking of cancer last, it should be the first thing to be excluded when consulted by women in or approaching the menopause when a drop or two of blood or irregular menstruation attracts attention. The exploratory curetting should include the entire mucosa, and all the débris should be examined. If the microscope reveals nothing suspicious of cancer, the scraping alone may cure.

Age of Fetus.—Duvoir has found that the age of the fetus in days after the third month corresponds to the figure obtained by multiplying its length in centimeters by 5.6. The age can be estimated even when only the femur, humerus or tibia is available, by adding the length of the bone to 8 cm. and multiplying by 5.6 for the femur and by 6.5 for the humerus or tibia.

Salpingitis Versus Appendicitis.—Duclaux recalls that salpingitis is almost always secondary to an abortion or gonococcus infection; the seat of the pain is lower than with appendicitis, and it is relieved by repose; it increases during the menstrual period and spreads downward. Palpation through the vagina is instructive, as with appendicitis the uterus is movable and moving it is not painful, while the reverse is found with salpingitis. Rectal palpation confirms the salpingitis tumor. Roentgenoscopy is instructive, as also the previous history of vague abdominal pains at times, and loss of appetite.

Uncontrollable Vomiting of Pregnancy.—Le Lorier urges the necessity for purging and keeping the woman in bed, feeding only with milk by the teaspoonful every fifteen minutes, and training in breathing exercises with the spirometer. Sometimes epinephrin helps; 5 drops four times a day, of the 1 : 1,000 solution. When these measures fail, isolation with an experienced and firm nurse is required; nothing allowed by the mouth for two or three days, supplying fluids by rectal drip, and keeping up the respiratory exercises plus inhalation of oxygen. The third day, scraps of ice, Vichy water and aromatized seltzer, and then milk, natural, fermented or flavored to taste, but only by the teaspoonful every fifteen minutes. If milk is not liked, gruels, meat extracts, sherbets or peptoned solutions can be used—all by the teaspoonful. Any food intensely desired by the patient should be allowed, even if it seems indigestible. Human or animal serotherapy has proved successful in some cases; serum from a normal pregnant woman should be given the preference. Injectable extracts of corpus luteum have also given good results. With a pulse permanently over 100, we should not delay too long before emptying the uterus in the most expeditious way.

The Oscillometer in Obstetric Practice.—During labor, the oscillometer applied to the pulse allowed constant supervision of the heart action and, with hemorrhage, warned when transfusion was necessary. It also distinguished between the flagging of the heart and obstetrical shock, and between the real and the apparent death of the new-born when life seemed absolutely extinct.

Masked Treatment of Syphilis in the Pregnant.—Sauphar remarks that when the husband insists on secrecy in regard to a history of syphilis, as the pregnant woman must have systematic treatment, extreme caution and tact are required of the physician. He can discover "intense anemia" requiring intravenous treatment, and the yellow tint of the neo-arsphenamin can be explained by "the addition of caffein to the saline" thus being injected. Calomel has always been the main reliance in masked treatment of syphilis, and Milian advises to prescribe eighty cachets containing each 1 cg. of calomel and 1 gm. of bismuth salicylate, one each day, before two of the meals, and repeating the forty day course after an interval of ten days. The physician can usually find some symptoms as an excuse for this treatment of "the sluggish liver." In this form the mercury is almost always borne well. Hemorrhoids, constipation, "necessity for sparing the stomach," may serve as excuse for administering a mercury suppository by the rectum daily for twenty days. Arsphenamin suppositories have not given encouraging results. During the intervals between the calomel courses, potassium iodid can be given in some preparation. The daily dose must correspond to 2 gm. of the potassium iodid. The physician must also guard the prescriptions, and impress on the druggist not to give information as to the formula. By connivance with some other member of the family, it may be possible to substitute some other prescription for the one actually written. The physician must constantly bear in mind that the aim is the safeguarding of a family hearth and the preservation of posterity. Every kind of ruse and falsehood for this purpose, Sauphar reiterates, is justified, provided that he can retain the woman's confidence throughout the pregnancy.

Albuminuria in the Pregnant.—Daunay describes a number of sources of error in examining the urine of pregnant women. Admixture of vaginal secretion may give the positive reaction for albumin. Fermentation of the urine is one of the other sources of error.

Paris Médical

March 4, 1922, **12**, No. 9

Syphilis in 1922. G. Milian and Brodier.—p. 173.
Prophylaxis and Cure of Syphilis. L. Queyrat.—p. 177.
*Syphilis in Rural Districts. Leredde.—p. 184.
Danger of Inadequate Doses. M. Pinard.—p. 187.
Bismuth Salts in Treatment of Syphilis. G. Milian.—p. 189.
Hidden Active Gonococcus Infection in Women. J. Janet.—p. 191.
Case of Reinfection with Syphilis. Galliot.—p. 194.
*Idiosyncrasy to Arsphenamin. Babalian.—p. 195.

Syphilis in Rural Districts.—Leredde emphasizes the unsuspected frequency of cases of chronic gastric ulcer and of thyroid disease for which syphilis is directly responsible, but is seldom thought of in this connection, especially inherited syphilis. He reviews the experiences of two country physicians in France who examined for syphilis in every chronic affection they encountered. In sixteen months one thus found inherited syphilis in 161 and acquired syphilis in 82 of the 524 patients thus examined. In 22 cases the syphilis in a new-born infant gave the first clue to the unsuspected disease in the family. Besides these 243 certain cases, there were 39 others in which acquired syphilis and 117 in which inherited syphilis was probable or possible. The other rural practitioner states that in the 79 homes in his district, syphilis is known in 35. This village of 1,300 souls is not on a main rail line. Leredde adds that too many physicians nowadays "are not yet etiologists." They treat a gastric ulcer, myelitis, nephritis, deformities and disease as they encounter them, without digging down to find the roots. The two country physicians mentioned had not been able to apply the Wassermann in more than a few of their cases, hesitating to impose the expense on the families.

Idiosyncrasy to Arsphenamin.—Babalian's description is of his own experience. On entering a room in which an ampule of arsphenamin had been opened, he always developed symptoms like severe hay-fever asthma. An attempt at desensitization with subcutaneous injection of 2 cg. induced a grave nitritoid crisis, arrested only by epinephrin: three intramuscular and two intravenous injections.

Presse Médicale, Paris

April 15, 1922, **30**, No. 30

Albumins in the Serum with Cancer. M. Loeper.—p. 321.
*Anaphylaxis in Psychopathies. J. Tinel and D. Santenoise.—p. 321.
Technic for Radium Treatment of Uterine Cancer. Lacassagne.—p. 323.
*Transient Immunity and Durable Immunity. A. Marmorek.—p. 324.

Anaphylaxis in Paroxysmal Dread, Mania and Epilepsy.—Tinel here presents evidence of anaphylactic shocks and upset in the vagus-sympathetic balance in the course of paroxysmally occurring dread, maniacal agitation and epilepsy. The blood seems to be feeling the effect of injury of an anaphylaxis type from invasion by toxins. At any time during the paroxysm, drinking 250 gm. of milk will bring on a hemoclastic crisis, but as soon as the attack is over, it is impossible to elicit the hemoclastic crisis further or at any time until the next paroxysm or epileptic seizure. The paroxysm or seizure is thus explained as the result of overlapping disturbances of humoral origin, probably of anaphylactic origin, and of upset balance in the nervous system.

Reasons Why Immunity Is Transient or Durable.—Marmorek recalls that the diseases which leave durable immunity are those that are caused by a filtrable virus, and those caused by sporozoa and spirochetes which pass through an invisible phase in their development. The conclusion seems inevitable that permanent immunity depends on the smallness, the ultramicroscopic character of the micro-organisms causing the disease. They are so small that they can enter the nucleus of the cell. The reaction of the nucleus to their presence is what constitutes immunity after the disease has been thrown off. This immunity seems to have nothing to do with antibodies, agglutinins, etc. These latter biologic products act only within the limits of humoral and phagocytic, and hence transient, immunity. But if we can run to earth the invisible phases of protozoa and spirochetes, they might be utilized in this stage for production of a vaccine. Judging by analogy, the spirochete of syphilis must have an invisible phase. It may prove possible, further, he says, to get the living nucleus outside of the cell, so that bacteria can act on it as the invisible virus acts on it inside the cell, and thus produce conditions allowing immunization by a vaccine.

April 22, 1922, **30**, No. 32

*Anaphylaxis to Ipecac. F. Widal, P. Abrami and Joltrain.—p. 341.
*Reconstruction of Upper-Lip. L. Dufourmentel.—p. 344.
Curative Action of Mercury in Syphilis. L. Cheinisse.—p. 346.

Anaphylaxis to Ipecac.—Contact with emetin induced eczema in the man of 34 and handling ipecac induced asthma in the man of 55. Both were pharmacists, and this professional malady was cured in both by the usual desensitization procedures.

Reconstruction of Upper Lip.—The young woman's entire upper lip and the tip of the nose had been torn off by a dog bite, but Dufourmentel, with seven operations in the course of four months, reconstructed the face until the effect was perfect as can be seen from the illustrations. The first operation followed an hour after the injury. One illustration shows the deformity resulting when such injuries are allowed to heal spontaneously, as from a war wound.

April 26, 1922, **30**, No. 33

*Resection of the Sympathetic in the Neck. T. Jonnesco.—p. 353.
Radiology of Heart and Aorta. L. Delherm and R. Chaperon.—p. 358.

Cervicothoracic Sympathectomy.—Jonnesco's twelve large illustrations show the various steps for resection of the sympathetic as he performed this operation in treatment of angina pectoris. (Mentioned in these columns recently, pages 892 and 2094 of the preceding volume.) The entire cervicothoracic sympathetic has to be resected, he contends, to suppress the heart-aorta reflex of angina pectoris, and to modify the intracranial circulation.

Schweizerische medizinische Wochenschrift, Basel

April 13, 1922, **52**, No. 15

- *Changing Tonus of the Uterus. O. Beuttner.—p. 357.
- Pseudo-Appendicitis with Influenza. J. Dubs.—p. 363.
- *Acute Necrosis of the Pancreas. R. Schweizer.—p. 366.
- Psychology in Treatment of Neuroses. H. Meier-Müller.—p. 369.
- Injury from the Use of the Fructulet. E. Baumann.—p. 373.

Changing Tonus of the Uterus Musculature.—Beuttner reviews the observations that have been published on the relaxing and contracting of the uterus in response to irritation from within and without. He has published himself some cases in which the nonpregnant uterus alternately contracted and relaxed during instrumental dilatation of the cervix, or the corpus relaxed while the lower segment contracted. The local distention of the corpus may be like a cupola, and this may entail perforation, or it may mislead to the assumption during curetting that perforation has occurred. The uterus may relax and stretch to such an extent from the irritation of a laparotomy incision that a pregnancy seems almost certain. This relaxation from extra-uterine irritation is particularly liable to occur with adnexitis and extra-uterine pregnancy. Patiently waiting, the uterus gradually subsides to its former shape and size, growing harder and paler. The anesthesia does not seem to be the cause of the relaxation of the uterus. The light and air streaming in, and the altered intraperitoneal pressure are enough to explain the change in the tonus of the uterus. He describes some extreme instances.

Pathogenesis of Acute Necrosis of the Pancreas.—Schweizer ascribes acute necrosis of the pancreas to some primary toxic action from gallstones, gastric or duodenal ulcer, alcohol or other source of poison. He has found some plausible primary source of the kind in all the cases of acute necrosis of the pancreas he has investigated. Among the arguments to sustain this view is the fact that an abscess in the pancreas runs a course like an abscess elsewhere; it does not entail acute necrosis. This assumption explains further the variability of hemorrhage in the pancreas, and the scattered fat necrosis; a toxin can be carried by the blood to multiple points which the pancreas ferments could scarcely reach.

Annali Italiani di Chirurgia, Naples

January, 1922, **1**, No. 1

- Opening Lecture of Surgical Course. G. Pascale.—p. 1.
- *Mesogastric Ulcers. R. Alessandri.—p. 13.
- *Aneurysms in the Neck. G. Pascale.—p. 25.
- *Radium Treatment of Mouse Tumor. N. Piccaluga.—p. 40.
- *Present Status of Cysts in the Neck. De Gaetano.—p. 55.

Mesogastric Ulcers.—Alessandri concludes from about 100 operative cases that the special feature of these ulcers is their tendency to burrow deep and thus involve adjacent organs. There was diffuse peritonitis from perforation in four cases of ulcer on the lesser curvature and three on the anterior wall. Only four in this group were saved. The segmental resection may induce slight stenosis, but this and the interrupting of the course of the nerves and vessels never caused any disturbance in his cases nor in his research on dogs. The stomach seemed to be less liable to spastic phenomena after circular resection, and evacuation proceeded as promptly as in a normal stomach and more promptly than after gastro-enterostomy. The mediogastric resection evidently had rendered the stomach less sensitive to different stimuli inducing contraction, spasm of the pylorus, etc., and thus had warded off hyperchlorhydria and pains. Consequently he sees no reason for abandoning mediogastric resection for the longitudinal or step resection technic.

Aneurysms in the Neck.—Pascale reports four cases of traumatic aneurysm of a carotid artery, with or without involvement of the jugular vein, all cured by excision of the sac. His illustrations show the diversity of conditions encountered.

Action of Radioactive Emanations on Mouse Tumors.—In this preliminary communication, Piccaluga relates that the mouse tumors continued to grow and the animals all died in time, notwithstanding the treatment with radioactive emanations. However, the tumors all showed such characteristic modifications under the influence of the emanations, that it is possible that, with improved technic, a curative action might be realized. His tables and illustrations show enlargement of the spleen and leukocytosis as a constant effect of the emanation treatment. The cancer implants in animals previously emanation-treated developed much more slowly than in the controls, but only until effects of the emanations had worn off.

Cysts in the Neck.—De Gaetano classifies these cysts by the clinical anatomic and the histologic anatomic findings. His classification recognizes the embryonal factors in each of the various types, and this enables the surgeon to trace the cyst back to its farthest ramifications and thus insure against recurrence.

Pediatria, Naples

April 15, 1922, **30**, No. 8

- *Bacilli of Typhoid Group in Cerebrospinal Fluid. G. Caronia and L. Auricchio.—p. 337.
- Epidemic Encephalitis in Child, with Necropsy. E. Mensi.—p. 343.
- Case of Parrot's Pseudoparalysis. G. Castorina.—p. 356.
- Examination of Children's Stools. R. Vaglio.—p. 359.

Typhoid Bacilli in Spinal Fluid.—Typhoid or paratyphoid bacilli were found in the spinal fluid in 93 per cent. of fifteen children examined from the fifth to the thirtieth day of typhoid or paratyphoid. There did not seem to be any connection with the duration of the disease or its clinical form. In two children with symptoms suggesting encephalitis, the fluid contained typhoid bacilli although none could be cultivated from the blood.

Policlinico, Rome

April 10, 1922, **29**, No. 15

- Bismuth in Treatment of Syphilis. C. Ducrey.—p. 473.
- Multiple Stenosis of the Urethra. E. Bussa-Lay.—p. 481.
- *Kidney Calculus After Nephrectomy. P. de Favento.—p. 484.
- Vaccination Against Endemic Typhoid. M. Gioseffi.—p. 485.

Nephrolithiasis After Nephrectomy.—De Favento calls attention to the three cases he reports in which after removal of a tuberculous kidney a number of small calculi formed in the remaining kidney and were expelled. There had never been any tendency to lithiasis before.

April 1, 1922, **29**, Medical Section No. 4

- *Asthma. C. Frugoni.—p. 179.
- *Indicanemia and Insufficiency of the Kidneys. P. Marin.—p. 222.

Asthma.—Frugoni tabulates the results of tests of 25 different substances in 32 cases of essential asthma; 12 responded positively to certain animal or plant proteins. In one case nothing but rabbit's serum and hairs induced the asthma. The asthma was accompanied by a pronounced hemoclastic crisis in 4 of 5 tested for this; in a fifth case it probably occurred but was so fleeting it escaped detection. Guinea-pigs prepared with rabbit serum and beef serum and the next day injected by the vein with serum from the corresponding asthma cases died from anaphylactic shock, but not when they had been prepared with the human serum and then injected with rabbit or beef serum. Intravenous injection of serum from one of the asthma cases into a normal subject was followed by the appearance of a skin reaction to the same substances and extracts that gave the positive reaction in the donor. These substances further induced a hemoclastic crisis the same as in the donor. These instances of passive transmission of the state of anaphylaxis were in a healthy child, and in an asthma subject of unknown origin, injected with serum from a beef asthma case. The hemoclastic crisis which was evident, in his tests, from the first moment of application of the asthma-inducing substances until the attack occurred, is not a phenomenon of anaphylactic nature but a colloidoclastic crisis from protein shock.

Indicanemia and the Kidneys.—Marin tabulates the findings in regard to indican in blood and urine, the urea, nonprotein nitrogen, and the Ambard index in 120 patients with various diseases and healthy controls. The variability of the factors responsible for production of indican and its retention, and the fluctuating findings, render indicanemia of little diagnostic import although hyperindicanemia suggests possible insufficiency on the part of the kidneys.

Riforma Medica, Naples,

March 20, 1922, **38**, No. 12

- Iodized Tuberculin. A. Cantani.—p. 265.
- Liver Abscess Cured by Emetin. G. Iannelli.—p. 267.
- Bile Producing Function of the Liver. A. Barlocco.—p. 268.
- Experimental Research on Herpes. R. Vegni.—p. 270.
- Echinococcus Disease of the Lungs. G. B. Girotti.—p. 272.
- *Undernourishment and Exophthalmic Goiter. H. Curschmann.—p. 273.
- Recent Progress in Urologic Surgery. E. Aievoli.—p. 276.

Undernourishment and Exophthalmic Goiter.—Curschmann states that during the years of food scarcity from the war, the number of cases of exophthalmic goiter constantly declined, and the condition in the old cases constantly improved. As food conditions have been progressively improving since, the number of cases of exophthalmic goiter has been increasing to the prewar figures, especially among the well-to-do in his region. He wrote twenty-two physicians and surgeons throughout Germany to inquire their experience, and all report the same drop in the incidence of exophthalmic goiter. Deneke at Hamburg had 217 cases between 1909 and 1914 and only forty-two between 1915 and 1920. Kümmel operated on forty-eight in 1912 to 1915 and on twenty in 1916 to 1919. These and other data presented seem to establish that undernourishment checks the functioning of the thyroid. This suggests that fasting may prove an important adjuvant in treatment of exophthalmic goiter, like Allen's fasting treatment of diabetes. Not only meat but calories in general and fat in particular should be tentatively reduced, recording the metabolic findings.

Archivos Latino-Amer. de Pediatría, Buenos Aires

February, 1922, **16**, No. 2

- *Protracted Slight Fever in Children. J. Comby.—p. 81.
- Aplastic Anemia in Girl of 11. Eugenio Lasnier.—p. 90.
- Amebic Dysentery in Children. A. Volpe and N. L. Bloise.—p. 98.
- *Osteopsathyrosis. J. C. Navarro and J. Sánchez.—p. 110.
- Tuberculosis of Adult Type in Girl of 10. V. Zerbino.—p. 116.
- Albumin Milk in Enteritis. L. Velasco Blanco.—p. 121.
- *Congenital Myatonia. G. Aráoz Alfaro.—p. 125.

Prolonged Slight Fever in Children.—Comby cites from the literature a number of cases in which children of all ages have had a temperature around 38 C. or 100.4 F. for months and even years. In Genevrier's case the child of 12 still has these daily fluctuations of temperature between 37 and 38 C., noted for five and a half years. Change of climate, resection of adenoids and appendix have not modified this "cryptogenous febricula." Comby protests against ascribing these prolonged febrile states, without apparent cause, to the growth. They can usually be traced to autointoxication from some hidden focus in the digestive tract or upper air passages or to thyroid instability. In this latter case, organotherapy is called for. The discovery of the hidden cause is the main thing, and often several factors are involved. He recently encountered an example of familial fever from fatigue. After a fatiguing railroad journey, the child's temperature was 38.5 C. and both father and mother had a temperature over 38. After a night's rest the temperature was normal in all. Comby reiterates that the assumption of "growth fever" is as unjustified as of "fever from teething," but there is no doubt of the existence of what Renault calls the *hyperthermie de fatigabilité* in young and old. Persons of the neuro-arthritic type seem to be especially predisposed to it.

Osteopsathyrosis.—The young infant described presents a typical case of fragility of the bones, plus hydrocephalus. Some improvement has been realized with lumbar puncture and treatment as for syphilis, although there is nothing to suggest syphilis in the family.

Congenital Amyotonia.—Aráoz Alfaro argues that the destructive lesion in the cord may be the result of various infections, including acute poliomyelitis and inherited syphilis. The same factors at different points of the cord may induce different clinical pictures, such as Little's disease or infantile diplegia.

Brazil-Medico, Rio de Janeiro

March 11, 1922, **1**, No. 10

- *Treatment of Foot and Mouth Disease. O. Magalhães.—p. 117.
- *Treatment of Tropic Pemphigus. J. P. Botelho Vieira.—p. 117.
- *Visual Disturbance After Losses of Blood. A. Terson.—p. 119.

Treatment of Foot and Mouth Disease in Cattle.—Magalhães states that the antiserum for this disease he has been using on a large scale in prevention proved successful in 92.2 to 100 per cent. In his latest series of 257 experiences, 99.3 per cent. were successful. In treatment, nothing has been found effectual except copper sulphate by the vein. This has been given in 2,000 cases and with notable results, he says. Others have reported similar success with it in adjoining states.

Tropical Pemphigus.—Botelho Vieira reports excellent results from the use of chaulmoogra oil in treatment of pemphigus. The intramuscular injections on alternate days have to be kept up for some time; sixty injections were made in one chronic case before the cure was complete, and forty-five in another, described in detail. He emphasizes the contagious character of tropical pemphigus and its tenacity. Antimony and potassium tartrate may be effectual in the early cases, but only the chaulmoogra oil has proved capable of arresting the chronic form.

Visual Disturbances After Losses of Blood.—A similar article by Terson was reviewed Feb. 11, 1922, p. 466.

March 25, 1922, **1**, No. 12

- *Treatment of Epilepsy. R. de Souza Lopes.—p. 141.
- Minor Surgery. O. Ramos.—p. 145.

Treatment of Epilepsy.—Souza Lopes here discusses merely the accessory factors responsible for the epilepsy, the irritable motor and sympathetic systems, the toxemia, and the abnormal functioning of the endocrine glands. He describes the different signs of abnormal conditions in these various fields as the main problem in treatment of epilepsy.

Repertorio de Medicina y Cirugía, Bogota

January, 1922, **13**, No. 4

- *Medical Education in Colombia. J. N. Corpas.—p. 179.
- Action of Arsphenamin on the Eye. C. M. Pava.—p. 193.
- *Hygiene in Colombia. L. E. Aconcha S.—p. 205. Conc'n.

History of Medical Education in Colombia.—The first practitioner was a Spaniard, who arrived in 1579, and the first medical teaching began in 1758 when the Colegio del Rosario was founded by the viceroy, but 1801 had arrived before an actual medical faculty was organized. The university was founded in 1826, and a medical society in 1873. This was officially recognized as the Academia Nacional de Medicina in 1890.

Hygiene in Colombia.—In concluding this long study of public health matters in Colombia, Aconcha remarks that "in no country of the world have the legislators and public health authorities passed so many laws and decrees to promote the welfare of the people as in Colombia. . . . The United States is the only country that has adopted the Colombian single and autonomous system of organization of the public health service." He cites figures showing the effectual yellow fever mosquito campaign at Buenaventura. Water casks of the Panama type were distributed gratuitously—rain water being the sole reliance for drinking water—and all open casks were destroyed and the proprietor fined. The campaign against hookworm has been waged for fifteen months with good results. It was found that 6,348 were infected of 7,786 barefoot laborers, but only 38 per cent. of the 264 that wore shoes. The coffee plantations seem to be the main foci of hookworm (93 per cent.).

Semana Médica, Buenos Aires

March 23, 1922, **1**, No. 12

- *Extra-Uterine Pregnancy. E. Zárate, D. A. Rojas and Widakovich.—p. 453.
- Functional Reactions of Stovain. J. A. Sánchez.—p. 466.
- Pay Patients in the Public Hospitals. J. G. Ruiz.—p. 468.
- Prophylaxis of Puerperal Eclampsia. M. Oxilia.—p. 469.
- The Work of Dr. G. Rawson. N. Lozano.—p. 471.
- Notes of Two Ophthalmologists at Paris. Adrogué and Gallino.—p. 477.
- Sympathetic Ophthalmia. R. Argañaraz.—p. 479.
- Case of Lymphoid Leukemia. I. Allende.—p. 485.

Extra-Uterine Pregnancy at Term.—The mother and child left the maternity in good condition about the usual time, although the fetus had developed to term outside of the uterus, the tubal-abdominal pregnancy having proceeded to term. The similar cases on record during the last twenty years are compared with this. During the first few weeks there had been diffuse abdominal pains, and the movements of the fetus later were felt close to the surface of the abdomen, and induced pain. The false labor is dangerous for the fetus, and in this case was the signal for the laparotomy. The child has a few deformities but none pronounced. The neck is abnormally short and the face overlarge, and the right leg is a little short. It cried at once after extraction, and took the breast well, and the woman seems to have recovered without complications of any kind. Several illustrations show the placenta, fetal sac and child. The placenta and sac were detached in one mass, with 5 or 6 cm. of the right tube and the ovary, severing adhesions between clamps. There was scarcely any hemorrhage. The child weighed 2,860 gm. and measured 46 cm.; the chest measure was 35 and the biacromial diameter was 10 cm. At the age of 6 months he seems to be thriving normally.

March 30, 1922, **1**, No. 13

Projectile in Mediastinum. P. Barbieri.—p. 497.
*Hemostasis in the Nasopharynx. L. Samengo.—p. 499.
*Crossed Aphasia. Tiburcio Padilla.—p. 507.
Unofficial Medical Courses. P. J. García.—p. 518.
Necessity for Organization of the Profession. N. Capizzano.—p. 523.
Present Status of Internal Secretions. F. Grieco.—p. 524.

Inflatable Bag for Hemostasis in the Nasopharynx.—Twelve illustrations show the parts and uses of Samengo's "pneumocompressor." It is mounted on a head frame which holds it automatically in place. This device for plugging the nasopharynx does not interfere with operations on the mouth and throat, as the supporting frame can be pushed to either side.

Crossed Aphasia. — Padilla analyzes the conditions which justify the diagnosis of crossed aphasia. He compares four cases from the literature with a case of which he gives an illustrated description. His patient was a righthanded young man with endocarditis lenta, left hemiplegia, and complete motor aphasia. The necropsy findings showed advanced pathologic conditions in the right hemisphere while the left was practically normal.

Siglo Médico, Madrid

March 18, 1922, **69**, No. 3562

*Lactic Acid in Stomach Content. Santiago Carro.—p. 281.
Present Status of Internal Secretions. G. Marañon y Posadillo.—p. 283. Cont'd.
Malaria in Spain. M. Sella.—p. 287. Cont'd.

Lactic Acid in the Gastric Content.—Carro explains that lactic acid is liable to be found in the stomach whenever there is retention plus lack of hydrochloric acid. These conditions may or may not be associated with cancer of the stomach, so that the presence of lactic acid is no criterion for or against malignant disease.

March 25, 1922, **69**, No. 3563

*Milk Protein Therapy. M. Marín Amat.—p. 309.—Cont'd.
Surgical Treatment of Ozena. J. M. Barajas y de Vilches.—p. 312.

Protein Therapy.—Marín Amat has been making subcutaneous or intramuscular injections of milk in 300 cases of eye disease. It is now his routine treatment for ocular infections, and he gives this treatment also for erysipelas, orchitis and peritonitis. He never injects more than 4 c.c., and he uses goat's milk as it happens to be more conveniently available.

Deutsche Zeitschrift für Chirurgie, Leipzig

March, 1922, **169**, No. 5-6

*Ascarid Abscess in Liver. E. Makai (Budapest).—p. 297.
Surgical Complications of Ascaridiasis. R. Girgensohn (Riga).—p. 309.
*Para-Articular Arthrodesis of Hip Joint. M. Kappis.—p. 316.
*Rare Forms of Ileus. W. Block.—p. 329.
*Sacral Anesthesia. A. Barbey.—p. 341.
*Rheumatismal Periosteitis. H. Reh.—p. 361.
Roentgen Stereography. R. Fiebach.—p. 399.
Bile Peritonitis. F. Wagner.—p. 415.

Ascarid Liver Abscess.—The child of 7 had long been subject to ascaridiasis, and had been given treatment for ileus verminosus. Then came violent pains in the liver region, not resembling colic, and the liver was much enlarged. The abscess in the liver was resected and five living ascarids and several ova were found in it, and two ascarids crawled out of the operative wound six and nine days later. The abscess capsule showed that the ascarids responsible for the abscess must have been in the liver for several weeks before the santonin had been given. The abscess cavity had no connection with the bile passages, and Makai is convinced that the ova reached the liver by way of the blood or lymph.

Para-Articular Arthrodesis of Hip Joint.—Kappis reports fourteen cases of tuberculous coxitis in which he immobilized and strengthened the joint by implanting a bolt of bone and periosteum to fit between the trochanter and the crest of the ilium. The outcome justifies extensive use of this method, he says. A similar technic was applied to the shoulder in one case, but the implanted bolt fractured later.

Rare Forms of Ileus. — Block describes some cases and cites others from the literature in which there was complete obstruction of the bowel at more than one point, or complete and partial—a total of eight cases. The mortality is high, over 70 per cent.

Sacral Anesthesia.—Barbey comments on the comparative disregard of the sacral method for anesthesia, known also as the extradural or epidural method. He compares the experiences with it at various clinics, and in 146 cases in Landow's service. The technic is much simpler than nerve blocking, and the by-effects are much milder than with lumbar anesthesia. The anesthesia was complete in 91.8 per cent., and it failed only in 2 per cent.

Infectious Periosteitis.—Reh recalls that a primary acute infectious process in the periosteum is of rare occurrence, but the secondary form is very common. Multiple periosteitis is generally traceable to vascular anomalies.

Klinische Wochenschrift, Berlin

Feb. 4, 1922, **1**, No. 6

Mode of Action of Diuretics. A. Ellinger.—p. 249.
Pain in Diagnosis of Acute Abdominal Affections. F. Karewski.—p. 253.
Calcium Content of the Blood; Effect of Various Poisons Upon It. E. Billigheimer.—p. 256.
Chronic Duodenal Stenosis. H. Meyer.—p. 259.
Morphology of Duodenal Contents in Diagnosis. Langanke.—p. 260.
Congenital Obliteration Azoöspermia. C. Posner.—p. 261.
Psychic Anomalies in Early Childhood. T. Gött.—p. 265.
Paroxysmal Tachycardia. S. de Boer.—p. 269.
Predisposition to Auricular Fibrillation. S. de Boer.—p. 269.
Acute Disturbances of Nutrition in Infancy; Possibilities of Bacillus Coli Serum. Langer and Mengert.—p. 270.
Portal of Entry in Ascaris Infection. Fülleborn.—p. 270.
Osteomyelitis of Thigh After Dental Treatment. Schultze.—p. 271.
*Roentgen Irradiation of Exophthalmic Goiter. Haudek and Kriser.—p. 271.

Roentgen Irradiation of Exophthalmic Goiter.—Haudek and Kriser, of the Vienna roentgen laboratory in charge of Holzknecht, discuss the practical results of roentgenotherapy in the treatment of exophthalmic goiter. Their observations cover 38 cases, in 12 of which the patients have been reexamined; 4 of these can be regarded as cured; 7 are much improved, and one is slightly improved. According to reports of large series in the literature, good results were secured in from 75 to 90 per cent. of the cases. Glaserfeld reports 110 deaths in a series of 2,032 operative cases—a mortality of 5.4 per cent. There have been scarcely any deaths following roentgen irradiation, and the few that have been reported seem to have been due in part to other complications. As for untoward sequels, nothing more than a slight browning of the skin need occur if proper care is taken. Some surgeons have mentioned finding adhesions apparently caused by "planless irradiation." On the other hand, Pfeiffer, Nemenow, Krause and Rave state explicitly that in their operations they have never found tissue changes, ascribable to irradiation, which made the operation more difficult. Many who have experimented with animals have found no such adhesions. The writers warn against giving the treatments too close together, as in many instances an increase of basedowian symptoms results. In several sudden deaths after strumectomy a persistent and at times unusually large thymus was found. Many surgeons recommend in such cases reduction of the thymus as well as of the thyroid, which has achieved good results in certain cases. Other surgeons advise irradiation of the thymus before the operation on the thyroid (Crotti). The roentgenologist will also naturally irradiate a persistent thymus along with the thyroid. With exophthalmic goiter and uterine hemorrhage requiring irradiation, the goiter should be treated first, since otherwise exacerbation of the basedowian symptoms is liable. If the indications for the surgical intervention hold good after irradiation, the general condition of the patient will at least be improved, and there seems to be no doubt that the mortality from surgical operations has been materially lessened by antecedent roentgen irradiation.

Medizinische Klinik, Berlin

March 26, 1922, **18**, No. 13

*Trauma of the Brain and Operative Relief. Tilmann.—p. 393.
Reglementation of Prostitution. Grotjahn.—p. 395.
*Glycosuria Test for Beginning Pregnancy. Kamnitzer and Joseph. —p. 396.
The Headache of the Harried. H. Rehder.—p. 398.
*Cocain Poisoning. E. Pulay.—p. 399.
The Pupils in the Epileptic Seizure. G. Herrmann.—p. 399.
*Intracranial Serotherapy in Tetanus. E. Fränkel.—p. 401.
*Nonspecific Treatment of General Paresis. O. Fischer.—p. 402.
Prevention and Treatment of Cracked Nipples. L. Moll.—p. 403.
Lymphogranulomatosis. H. Stahr and I. Synwoldt—p. 404.
Practical Obstetric Questions. E. Runge.—p. 409.
Present Status of Arsphenamin Brain Fatalities. C. Hart.—p. 411.

Operative Treatment After Trauma of the Skull.—Tilmann regards all cases in which the lumbar puncture fluid shows high pressure or high albumin content, after an accident to the head, as confronted by the danger of epilepsy. Any findings in the spinal fluid suggesting the presence of a chronic inflammatory or reparatory process offer the chance of benefit from intervention at the seat of the injury, aiding in warding off or improving phenomena indicating irritation or a functional deficit. The earlier the intervention, the better the results are likely to be. The war wounds of the skull entailed epilepsy only in 10 per cent. of the cases in his service; others have reported 15, 40 and even 60 per cent. and Poppelreuter says that every injury of the brain entails epilepsy. Tilmann explains that traumatic epilepsy is not a disease but a symptom. Immediate removal of the cause arrests the symptom. In one case of scarlatinal encephalitis, fifteen epileptic convulsions pointed to the exact site of the focus. This was a patch of acute malacia, and it was removed by puncture, and drained, and there have been no further cerebral symptoms during the three years since. The malacia process is not generally classed with inflammation, but the effect may be the same. The war wounded in the head who have recovered from their disturbances have normal lumbar puncture fluids. He adds that no plastic operation should be attempted unless the lumbar puncture fluid shows normal conditions.

Early Glycosuria Test for Pregnancy.—Kamnitzer and Joseph announce an early test for pregnancy which, they say, is simple and reliable. Phlorhizin is injected into the gluteal muscles: 2 c.c. of a solution of 0.03 gm. in 30.5 c.c. of distilled water to which 0.015 gm. procain has been added, and the whole boiled up; 2 c.c. of this represents 0.002 gm. of phlorhizin. In the healthy it takes 0.01 gm. of phlorhizin to induce glycosuria. A negative response, they say, positively excludes pregnancy, either normal or extra-uterine. The findings were conflicting only in 6 of 300 women tested, including 213 control cases of various affections, 67 pregnant, 17 who had just aborted, and 3 with tubal pregnancies. The test is applied fasting. The bladder is emptied, and 200 c.c. of an unsweetened fluid is ingested, and the same amount is ingested anew half an hour after the injection. The woman urinates three times at half hour intervals. The positive reaction is the black tint appearing at once on boiling as the Nylander test is applied. Certain drugs give the positive reaction also. Among the cases cited is that of a young woman six weeks after her last regular menstruation. The urine reaction was strongly positive in half an hour. Three weeks later the pregnancy was interrupted on account of progressive tuberculosis. Frank and Nothmann's assertions in regard to the value of alimentary glycosuria as a sign of pregnancy have been confirmed by others' experience. Glycosuria after test ingestion of 100 gm. glucose—when the sugar content of the blood is not over 0.19 per cent.—is strong presumptive evidence of a pregnancy. [Their announcement was summarized in The Journal April 16, 1921, p. 1141.] The phlorhizin method is a simplification and refinement of this test. How early it can be positive is still a question. In several cases only eight or ten days had elapsed since the last menstruation. A positive response seems to be obtained only in the first three months.

Cocain Poisoning.—Pulay relates that in the last two weeks he has encountered five cases of an erythema in the domain of the trigeminal nerve, resulting from the abuse of cocain. In one case there had been also an attack of convulsions and unconsciousness, the pulse low and fast, the pupils widely dilated. The patients all confessed that they had been trying cocain. In some other cases the rash had followed the use of cocain by a dentist. In one dental case there was an epileptiform seizure the same evening, and the erythema developed the next morning.

Intracranial Serotherapy in Tetanus.—Fränkel relates experiences with grave tetanus in which the patients recovered after subdural injection of tetanus antiserum by lumbar puncture and by trephining of both hemispheres. In one case the incubation had been only forty-eight hours and recovery followed this treatment. Gottlieb has reported that rabbits were saved by trephining and injecting the antiserum in the vicinity of the medulla oblongata after an interval of sixty hours since the injection and of twenty-five hours after the onset of the tetanus. Fränkel has applied the antiserum intracranially in 7 grave cases, and recovery followed in all but 2; in one of the fatal cases mixed infection with gas bacilli was responsible for the fatality, and in the other, a potent antiserum was not available. He cites further Böcker's 2 cases and Slojanoff's case, which have converted them to the supplementary intracranial method, even for cases with a long incubation period, as they are liable to take a turn for the worse at any moment.

Nonspecific Treatment of General Paresis.—An article by Fischer on this subject was summarized in these columns March 11, 1922, p. 768. He here gives the minute details for the treatment with which he has been successful. He begins with 2.5 c.c. of a 10 per cent. solution of sodium nucleinate injected subcutaneously in the arm or between the scapulae. After two or three days, 3 or 4 c.c. are injected in the other arm. Increasing the dose in this way, he reaches 10 c.c., and this is repeated twice, with intervals of several days. Then the treatment is suspended for two or three weeks, and then the series is begun anew from the first. Three or four such series constitute the course.

Monatsschrift für Kinderheilkunde, Leipzig

February, 1922, **22**, No. 5

*Alimentary Fever in Infants. Bessau et al.—p. 641.
*Gordon's Patellar Reflex in Chorea Minor. Noeggerath.—p. 657.
*Prognosis of Tuberculosis in Children. F. X. Cieszynski.—p. 663.

Fever of Alimentary Origin in Infants.—On the basis of a careful survey of their cases of alimentary fever in infants, Bessau, Rosenbaum and Leichtentritt have reached certain conclusions which may be summed up as follows: The temperature curve is not a reliable indication of the severity of acute food disturbances. The temperature may be normal or subnormal in gastro-intestinal toxicosis. In such cases an increase or fall of temperature may signify improvement or the opposite. The influence of hunger and ingestion of food on the temperature curve is hard to determine; in fact, every change in temperature is difficult to interpret. The course of the disease can be controlled only by careful consideration of the other symptoms of intoxication. The increased permeability of the gastro-intestinal mucosa occurring in toxicosis is due to exsiccation; local intestinal irritation need not be assumed. It is not an absolutely constant but apparently a very frequent phenomenon. The blood in gastro-intestinal toxicosis is found to be sterile. In the gastric contents in two thirds and in the duodenal contents in almost all of the cases the colon bacillus was found in large numbers. Negative findings in stomach and duodenum are probably due without exception to the inhibitory effect of the hydrochloric acid. Leukocytosis varied between wide extremes, 9,300 and 43,900, and was not dependent on the severity of the affection.

Diagnostic Significance of Gordon's Patellar Reflex for Chorea Minor.—As the result of Noeggerath's investigations on a group of normal children and a number of children suffering from chorea minor, he states that the Gordon patellar reflex is frequently observable in chorea minor but that it also occurs in children not so affected (in 7 out of 68). This reflex has therefore only a restricted diagnostic value in chorea minor.

Laboratory Methods in Prognosis of Tuberculosis in Children.—Cieszynski says that the refractometric index of the blood serum increased steadily in his cases with a good prognosis and decreased regularly in cases with a bad prognosis. Increase in the percentage of lymphocytes signifies a good prognosis and a decrease a bad prognosis. Disappearance of the eosinophils is a bad sign. Ehrlich's diazoreaction deserves its recognized prognostic value. The Weiss and the Russo reactions, on the other hand, have no prognostic significance. Urobiligenuria and urobilinuria can be used only conditionally for the prognosis.

Zentralblatt für Chirurgie, Leipzig

Feb. 4, 1922, **49**, No. 5

Ligation of the Hepatic Artery Without Injury to the Liver. F. von Hofmeister.—p. 154.
Question of Drainage After Strumectomy. C. Vidakovits.—p. 157.
Blood Pressure Rises with Torsion of Mesentery. Maluschew.—p. 162.
Diagonal Arc Abdominal Incision in Purulent Cases. Vogeler.—p. 163.
"So-Called Ulcus Simplex of the Intestine." A. W. Fischer.—p. 166.

Zentralblatt für Gynäkologie, Leipzig

Feb. 4, 1922, **46**, No. 5

Spontaneous Intra Partum Hematoma of Abdominal Wall. Lichtenstein.—p. 162.
Origin of Cavities in Human Ovum. H. Hinselmann.—p. 165.
A Carcinomatous Uterine Sarcoma. F. Klee.—p. 166.
Metreurysis versus Cesarean Section for Placenta Praevia. Heinlein. —p. 170.
*Alcohol to Arrest Hemorrhage. H. Reh.—p. 176.
Hydatid Cyst in Douglas' Pouch Impeding Childbirth. Louros.—p. 178.

Use of Fifty Per Cent. Alcohol Solution for Hemostasis.—Reh recommends highly the injection of a 50 per cent. alcohol solution to check hemorrhage of the uterus and bladder. He has employed the method frequently in hemorrhages following abortion and in hemorrhages in connection with endometritis. He injects in from one to two minutes 150 c.c. of the solution into the uterus, through a two-way catheter, very slowly and without pressure, in order not to irritate the tubes. He was always satisfied with the results and the procedure seldom caused any pain.

Arbeiten a. d. Anat. Inst., Sendai, Japan

April 5, 1922, No. 7

*Microscopic Anatomy of Brain-Stem. G. Fuse.—p. 1.
Comparative Anatomy of Muscles of Eye. S. Nishi.—p. 65.

Microscopic Anatomy of Brain-Stem.—Thirty-six fine plates accompany this third report of microscopic research on the gray matter in man and animals. (In German.)

Mitteil. ü. Pathologie, etc., Univ. Sendai, Japan

Jan. 31, 1922, **1**, No. 3

Nature of Nissl Body and Nucleoproteid-Like Granule. Marui.—p. 413.
Influence of Bacterial Toxins on the Ear. G. Shimodaira.—p. 421.
Healing Processes in Cornea and Iris. Y. Hayashi.—p. 481.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 11, 1922, **1**, No. 10

*Pathology of the Newly Born. C. de Lange and J. C. Schippers.—p. 950.
*Anatomic Diagnosis of Pulmonary Tuberculosis. W. Bronkhorst.—p. 964.
Aneurysm of Abdominal Aorta. G. P. van Trooijen.—p. 978.
Puerperal Eclampsia. A. Verschoor.—p. 981.
Extravital Cultivation of Tissue. M. A. van Herwerden.—p. 982.

Pathology of the First Weeks of Life.—A case of congenital universal dyskeratosis is illustrated; it is usually improperly called ichthyosis. There was no hyperkeratosis, only a dyskeratosis. The child died the fourth day. A case of intracranial hemorrhage described was evidently due to a hemorrhagic diathesis. Another infant succumbed to an internal hemorrhagic pachymeningitis. In a fourth case the brain showed microgyria with hydrocephalus. In conclusion a case is described in which necropsy of the 5 months infant confirmed the congenital heart defect, and disclosed an accessory liver, partial situs inversus and absence of a spleen, with other anomalies.

Anatomic Diagnosis of Pulmonary Tuberculosis.—Bronkhorst discusses both the qualitative and quantitative estimation and location of the tuberculous process, his article filling fourteen pages. He emphasizes the differences in the roentgen and physical findings which differentiate the productive process, the process with exudation, the cheesy process, cavity formation, and the healing process.

Acta Medica Scandinavica, Stockholm

March 2, 1922, **56**, No. 2

*Aneurysms of Basilar Artery. K. H. Krabbe and K. H. Backer.—p. 95.
*Fibrin Percentage in the Blood. H. C. Gram.—p. 107.
*The Anemia After Influenza. G. Lindberg—p 162.
*Pituitary Disturbance After Epidemic Encephalitis. A. Barkman.—p. 188.

Diagnosis of Aneurysms of Basilar Artery.—Krabbe and Backer describe the case of a syphilitic man of 36 with an aneurysm in the basilar artery. The clinical picture had suggested endarteritis with thrombosis in the region of the medulla oblongata. The man's complaint of "palpitations" in his head, which might have suggested an aneurysm, had not been heeded. The aneurysm was as large as a hen's egg, and was found intact at necropsy. Comparison of this case with similar ones on record confirms the alternation in the course, the paralysis and the ataxia alternating with partial recovery or stationary periods. (In French.)

Fibrin Percentage in Blood and Plasma.—Gram gives fifty-three tables here, presenting the findings in large numbers of persons with various diseases and controls, all tested by his new method. He refers for the technic to his publication in the *Journal of Biological Chemistry*, 1921. The normal fibrin content of the blood plasma in men was found between 0.36 and 0.20 per cent.; in women, between 0.38 and 0.29. Fibrin deficiency was found only in cases of pernicious anemia and degeneration of the liver. In hemophilia, the fibrin percentage was rather high, but he ascribes this to resorption of extravasated blood. High fibrin percentage is found in infectious diseases, tumors and after parenteral injection of protein, and in the pregnant. He ascribes the hyperinosis in all these cases to the slight hepatitis accompanying the pathologic condition. The hyperinosis and hyperleukocytosis are independent effects of the same toxic action, but the fibrin level of the plasma is the more dependable, sensitive and durable reaction. (In English.)

Anemia After Influenza.—Lindberg gave reduced iron in 19 cases of grave anemia consecutive to influenza. The dose was a 1 gm. pill, three times a day, and there was no constipation, he says, with these enormous doses. There were never any symptoms of intolerance, and the hemoglobin percentage doubled in from two to eight weeks in 13 cases and in twelve weeks in one, thus in 70 per cent., while it trebled in 25 per cent., in from six to eighteen weeks. No benefit had been previously derived from iron in any other form or from arsenic. The anemia was of the chlorosis oligochromemia type; the bone marrow had evidently suffered from the disease. The recuperation of strength and energy was remarkable in some of the cases, with hemoglobin down to 22 per cent. (In German.)

The Pituitary in Epidemic Encephalitis.—The case illustrated by Barkman suggests that we had better examine anew from the standpoint of pituitary insufficiency all our cases of epidemic encephalitis. His patient is a robust man of 35 who has increased 35 kg. in weight during the two years since his attack, and the deposits of fat are all at the points where fat accumulates in the female. The general aspect and skin and the expression have changed to a feminine type; the genitals are shrunken; there is scanty growth of beard, and vision is somewhat impaired, with sluggish reaction to light and no convergence. (In German.)

Ugeskrift for Læger, Copenhagen

March 16, 1922, **84**, No. 11

Comparison of Methods for Homogenization of Sputum. Gjørup and Bagger.—p. 275.

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PROBLEMS CONFRONTING THE SECTION ON NERVOUS AND MENTAL DISEASES *

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There has never been a time when the American public was aroused to so much interest in the subjects covered by our section as the present. There had been a slow growth prior to the war, to no small extent due to the interest aroused by the psychanalytic and mental hygiene movements. Among the events connected with the war which increased this interest I may mention: the revelation of an unsuspected amount of feeblemindedness and psychoneuroses in the examination of the draft; the unexpected rôle played by psychoneuroses in swelling the number of war casualties, and the official recognition of the importance of prompt treatment of such cases, as indicated by the appointment of division psychiatrists and the establishment of neuropsychiatric hospitals. The economic and social unrest following the war, with its crime waves and revival of many forms of occultism, tend to maintain the public interest thus aroused.

All around there is a demand for information and guidance, especially along lines of psychology and psychiatry. Judges and juries more than ever before turn to us for explanations of abnormal human behavior, and there is a greater willingness on their part to consider the medical and psychologic points of view. In many juvenile and criminal courts, the opinions of the psychiatric adviser, in determining the fate of the accused, are of as great importance as or of greater importance than the paragraphs of law concerned. Among educators we find the same demand. In the grade schools, high schools, and colleges alike, teachers are asking for aid in dealing with problems n connection with behavior or refractoriness to certain studies or activities on the part of pupils.

Shall this aid be given by the psychologist without medical training or by the medical man possessing knowledge of normal and abnormal psychology? Experience has shown again and again the importance of the medical point of view in connection with these problems, and it is our duty to meet these demands for aid and not pass them by default to the nonmedical psychologists. Let me warn you that the medical profession has no time to lose before facing these issues. One has merely to observe the tables of contents of popular magazines and the subjects of lectures before clubs and public and private gatherings of all kinds to appreciate the extent of the invasion of the field of psychopathology by all kinds of lay psychanalysts and psychologists, some of them well trained and well meaning, others dangerously contaminated by occultism, obscurantism, commercialism, or by all of these. Let us apply prophylaxis before radical treatment becomes necessary: We must persist in hammering on the necessity of teaching more psychology and psychiatry to medical students and of making these subjects compulsory for graduation.

Only by bringing up a generation of physicians with such training will it be possible to uproot one of the greatest difficulties in the way of sound neuropsychiatric prophylaxis, one to which particular attention was drawn in last year's address of the chairman of the Section of Psychiatry of the Royal Society of Medicine of England, E. Farquhar Buzzard.[1] Speaking of mental hygiene as a plant we wish to see flourish, he said that "among the weeds which have choked this plant is one that was sown in ignorance and has been nourished on fear; namely, the popular notion that so-called functional nervous disorders or nerves are not mental disorders." He says, further:

> If we eradicate this weed we shall be able to speak quite as frankly about mental disorders as about gastric disorders, and to discuss psychotherapy as freely as we do diet. If we recognize, and cause to be recognized, that there are all degrees and signs of mental disorders, we shall gradually, but surely, break down the barrier which at present separates "nerves" from insanity, and which preserves for the latter the position of a mysterious and malign ogre lurking in the background and ready to pounce upon its victims from an unseen world. No harm is or ever can be done by dispelling ignorance or clearing up mystery.

Our section comprises both neurology and psychiatry. With the growing interest in our subjects and with the time limit of three half days on our deliberations, the question some day may be raised whether there shall be one section in neurology and another in psychiatry in order to give more members a hearing. This year we have had to refuse promising papers for lack of space, and you will observe that the length of our printed program is such that conciseness in our discussions will be absolutely necessary. I wish to go on record as opposed to any such division, no matter how crowded we may be, for I believe that in practice, as well as in teaching, neurology and psychiatry should be welded together and not separated. A neurologist who is ignorant of morbid mental processes and a psychiatrist unfamiliar with organic nervous diseases are equally undesirable, and will prove to be failures in practice and in teaching.

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* Chairman's address, read before the Section on Nervous and Menal Diseases at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Buzzard, E. F.: Proc. Roy. Soc. Med. (Sect. Psychiatry) **14**: 1 (Feb.) 1921.

MEDICAL EXPERT TESTIMONY

If we of the medical profession consider ourselves the proper advisers to educators, jurists and the public at large in matters of psychopathology and neuropsychiatry, we—and more particularly those of us who claim special knowledge in these branches—should take hold both for the public good and in our own interest to remove an evil which is repeatedly discrediting us with the public and often heaps ridicule upon us. I refer to the present method by which medical expert testimony is given in our courts, particularly in cases involving the questions of insanity and mental responsibility. The usual practice of each side selecting experts who appear in court with a partisan label has led to ills so well recognized that I will dwell on only one of them: the resulting public distrust of our opinions. We share this problem with all medical and other professional men, such as chemists and engineers, but we suffer relatively more damage to our reputations, as cases involving questions of mental responsibility are prone to attract a great deal of popular interest and to be exploited by the sensational press. Even the most discriminating lay people are tempted to question not only the exactness of the knowledge, but the common sense and sometimes perhaps also the sincerity of physicians giving testimony in such cases. If we do not always appear sensible and trustworthy when under oath to tell the whole truth, can we expect the public to trust us as advisers in their serious and intimate personal problems?

From this purely professional standpoint alone there is enough incentive to act. What can we do? Ours is only a small part of a large public problem, and we neuropsychiatrists alone can do little more than think and talk. The whole medical profession, however, as represented by the American Medical Association, can do something if it attacks this knotty problem seriously and with willingness to sacrifice individual material gain on the part of a few persons for the sake of promoting justice and incidentally raising the prestige of our profession.

As an initial step we may take up the suggestion recently made in a letter to the editor of The Journal by Dr. Herman Adler[2] that the American Medical Association create a council on medical jurisprudence "whose main task shall be to work out and establish standards in this subject which can serve as guides not only for physicians, but for the legal profession as well." Other councils of the Association have accomplished great betterment along several lines in the face of great difficulties and opposition on the part of powerful and selfish interests. Let us all agree to devote some of our time and thought to this circumscribed and practical problem, while we also constantly keep in mind the larger ones which I have sketched in a superficial manner in these introductory remarks.

30 North Michigan Avenue.

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2. Adler, H. M.: "American Medical Jurisprudence and the Expert Witness," J. A. M. A. **78**: 1220 (April 22) 1922.

Medical Profession to Lead in Health Movements.—Man is too immoral or too careless, indifferent and selfish to permit a millennium of health to occur. Therefore, it behooves us as members of the medical profession to take the part of leadership in local, district and state health movements. Let us medicinize the social movement. That will help it forward and will place the medical profession in a position to rationally direct the health crusade.—F. Billings, *Nation's Health* **5**:219 (April) 1922.

PULMONARY ASPIRATION OF PARTICULATE MATTER, NORMALLY AND DURING ANESTHESIA *

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There are many phases of medicine which are concerned with the question of the fate of particulate matter inhaled and aspirated into the lungs, especially when its distribution and mode of inhalation or aspiration is considered. From the standpoint of infection in pulmonary tuberculosis by the aerogenic route, it is usual to consider two main modes: the inhalation of dry pulverized sputum, as maintained by Cornet, and the inhalation of fluid droplets freshly expelled from the mouths of phthisical patients, believed by Flügge[1] to be the more probable. There is still another important mode, especially preferred by the adherents of the idea that childhood infection is paramount, and supported by the conception of the latency of the tubercle bacillus; that of the hand to mouth infection, occurring during the floor days of the child, as suggested by Krause.[2]

The problem is a complicated one, and in all probability at times any of these may be the mode of conveying the tubercle bacillus to virgin or susceptible soil, although it is impossible at present definitely to state without hesitation just how most pulmonary infections occur. It is rather singular that, in view of the droplet and hand to mouth suggestions, so little consideration has been given the pulmonary aspiration of fluids. Just as there is a difference of opinion regarding pulmonary infection in tuberculosis so the laryngologists do not all agree as to the mode of infection, during anesthesia, in lung abscess following operations on the upper respiratory tract, the three most prevalent conceptions being: aspiration from the upper air passages, lodgement from the blood stream and infection by lymphatic extention. That the aspiration of foreign bodies under certain circumstances occurs quite readily is universally accepted as a fact.

INTRAPULMONARY THERAPY

Viewing this subject from another angle, the feasibility of intrapulmonary therapy suggests itself. Can solids inhaled in very fine suspension, or liquids be introduced into the lung by the respiratory or aerogenic route, for application to diseased pulmonary sites? The distribution and fate of inhaled solids—soot, smoke or dusts has been carefully studied, on account of its enormous industrial and economic significance. In an elaborate American article by Klotz[3] on pulmonary anthracosis, replete with literature, some important points on the inhalation of carbon pigment (smoke) are emphasized. The deposition in the lungs of carbon pigment from the dust laden air is dependent on the respiratory function and the activity of the lymphatics. The inhaled air with its carbon particles is carried to varying depths in the lung tissue. The major amount of the foreign material adheres to the moist walls of the respiratory passages and never reaches the lung tissue proper. It is possible that the foreign material that adheres to the mucous membranes of the nose, pharynx, trachea and larger bronchi is but rarely carried into the tissues of these tracts, but, lying in the secreted mucus, is carried upward and is eventually expelled.

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* From the Research Department, National Jewish Hospital for Consumptives.

* Read before the Section on Pathology and Physiology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Flügge, C.: Ztschr. f. Tuberk. u. Heilstättenw. **34**: 212 (May) 1921.
2. Krause, A. K.: New York State J. M. **21**: 83 (March) 1921; Am. Rev. Tuberc. **5**: 994, 1922.
3. Klotz, Oscar: Am. J. Pub. Health **4**: 887, 1914.

The relatively lesser quantity of dust and carbon which reaches the lung alveoli also becomes adherent to the moist surfaces of the alveolar sacs, and then, by the activity of certain cells, is eventually carried into the lymphatics of the alveolar wall, where they are disposed of by the lymphatic system of the part. The subsequent distribution is to a great extent determined by the site of absorption within the lung. The tendency of the absorbed carbon is to pass from the finer lymphatic channels of the alveolar walls to the larger passages, eventually reaching a lymph node, where the onward progress of the particles is impeded by the filtering action of this structure. In the main, the lymphatic drainage of the entire lung converges at the hilus and passes into the peribronchial glands located in this part.

Anthracosis in young adults is more prominent in the apex of the upper lobe, the anterior border of the upper lobe and the posterior border of the upper and lower lobes, but in these areas the distribution is by no means uniform. The unequal distribution of the pigment upon the pleural surfaces has no direct relation to the deposition within the lung. The lack of pigment on the interlobar surfaces and in the rib grooves is only a superficial condition and does not affect the deeper underlying lobules. The earliest deposits are mainly in the perivascular lymphatics of the smaller branches of the pulmonary artery; subsequently pigment appears in the regions of the smaller bronchi and venules.

In all of these situations, its presence becomes more marked with the increasing quantities of soot that are constantly inhaled. No evidence of excessive deposit in the deep tissues at the apex of the upper lobe was noted. More pigment was found toward the hilus than at the periphery, regardless of the pleural distribution. In acute pneumonia, the involved areas show lesser pigmentation, with a sharp line of demarcation from the more healthy tissues. In caseous pneumonia, there is only a moderate amount of pigment deposit in the caseous areas. In localized chronic caseous tuberculous foci, the pigment deposit increases in direct proportion to the amount of fibrosis. The fibrosed mass may become intensely black. It is probable that only those carbon particles lying within the alveolar sacs can reach a permanent interstitial abode, and that little if any carbon is phagocyted and carried into the tissues from the bronchi or bronchioles. Furthermore, it appears that the carbon reaching the lung alveoli is only a very small portion of the carbon content of the air as inspired, and this portion has reached the lung because it escaped contact with the moist mucous surfaces of the respiratory tract. Carbon deposits, by inducing fibrosis, tend to encapsulate chronic tuberculous foci.

Haythorn,[4] in reporting on the histologic evidences of the disease importance of pulmonary anthracosis, says:

> The fine particles seem to gain entrance into the lung substance by way of the air passages, and it has been stated by some that the mucous membranes of the nose, mouth, pharynx, and larynx, trachea, bronchi and bronchioles contribute largely to the taking in of the pigment, but our observations tend to show that, in this community (Pittsburgh) at least, such is not the case. . . . In the nasal cavities, the vibrissae and turbinates collect a great deal of carbon, which is subsequently removed by the secretions; for, in the examination of nasal polypi and strips of turbinate mucosa removed at operations, we have never seen a single example of free pigment or pigment bearing cells beneath the epithelial layer. . . . In the air passages below the larynx, pigment bearing cells have frequently been observed, but these are either free in the lumen or were surrounded by bits of mucus and other cells and were not found penetrating the epithelial layers. . . . The amount of pigment phagocytosis in the air passages above the lung alveoli must be a negligible quantity. Carbon pigment once taken up by the cells remains intracellular indefinitely unless freed by some process producing general necrosis of the tissues.
>
> The phagocytic cells are not transient scavengers, but in a more leisurely manner gather their pigment load and transport it to the tissue spaces. The lining cells of the lung alveoli take little or no active part in the phagocytosis of carbon pigment. The process consists in the phagocytosis of the pigment within the lung alveolus by a cell, which is probably an endothelial leukocyte. The cell which takes the early active part in the formation of a tubercle is phagocytic for tubercle bacilli and for pigment granules, and is probably an endothelial cell. The presence of pigment granules within these cells does not interfere with the cells taking part in the formation of a tubercle, in the usual way. The presence of pigment-bearing cells in the connective tissue about tuberculous lesions acts as an additional stimulus to fibrosis and encapsulation. The obliteration of the pulmonary lymph spaces in the anthracotic process is unfavorable for the local spread of tuberculosis, and aids in the localization of the condition. In acute inflammatory conditions where the lymphatics are important for proper resolution, anthracosis becomes seriously detrimental, because of the obliteration of the lymph spaces.

EXPERIMENTAL WORK

Studying the quantitative absorption of dust from air of definite known dust content, Saito[5] found that, in animals, from 4 to 24 per cent. of the total amount of dust inhaled entered the respiratory apparatus, the remainder going into the intestinal tract, being caught in the nose and nasopharynx, and then swallowed. The total retained in the body was about 95 per cent. of the inhaled dust. Sneezing acts as a protection against the accumulation of dust in the animal body. In men,[6] about 2 per cent. or less of white lead powder inhaled through the nose was exhaled again, about 51 per cent. remaining in the nose and 3 per cent. in the mouth; when the powder was inspired through the mouth, about 80 per cent. was retained in the lung. Fluid droplets or solutions of potassium iodid, sodium chlorid or sodium chromate may be absorbed to the extent of 96 per cent.[7] The exact site of absorption was not determined.

A great deal of experimental work has been performed to discover the origin and disposition of the characteristic and important epithelioid cell of the tubercle, and the opinions have finally crystallized into the view taken by Foot[8] in his recent studies, which also include experimental studies with India ink (carbon) and pulmonary tuberculosis. His views, which concur with those first expressed by Mallory and by Klotz and Haythorn, are that the epithelioid cell is of definitely endothelial origin. There is little evidence that the local tissue elements take an active part in the process of tubercle formation, until after the lesion is formed; the reaction is, in a sense, exudative, since the lesion is produced from cells which migrate to the site of inflammation. The lymphocyte appears late and is not to be considered as a potential epithelioid cell; its presence in the tubercles is as yet unexplained. Experimental tubercles are formed in the lung primarily by cells originating in the capillary endothelium. These cells are probably present in small numbers in the normal lung, lying free in both the alveolar wall and the air vesicles. In response to infection, they proliferate in the capillary walls in the vicinity of the invading organisms, migrate in steadily increasing numbers, and, arriving at the site of the infection, further multiply, and, to some extent, fuse to form the syncytia known as giant cells. The epithelial cell takes no active part in the process; its proliferation tends to repair denuded surfaces and is regenerative rather than combative or phagocytic in nature. This cell does not take up carbon (particulate matter), in contradistinction to the endothelial cell. The cells of endothelial origin not only phagocytose tubercle bacilli but also carry them into the tissues; for example, into lymph nodes, by way of the lymphatics, or into other lung lobules by way of the air passages, in which they are readily demonstrable.

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[4] Haythorn, S. R.: J. M. Res. **29**: 259-79, 1913-14.

[5] Saito, Yorchiro: Arch. f. Hyg. **75**: 134-51, 1911-12.

[6] Lehmann, K. B.; Saito, Yorehiro, and Gfrörer, Walter: Arch. f. Hyg. **75**: 152-9, 1911-12.

[7] Lehmann, Saito and Majima: Arch. f. Hyg. **75**: 160-6, 1911-12.

[8] Foot, N. C.: Studies on Endothelial Reaction: II, The Endothelial Cell in Experimental Tuberculosis, J. Exper. Med. **32**: 513 (Nov.) 1920; III, The Endothelial Cell in Experimental Pulmonary Tuberculosis, ibid. **32**: 533 (Nov.) 1920; IV, The Endothelium in Experimental General Miliary Tuberculosis in Rabbits, ibid. **33**: 27 (Feb.) 1921.

The conclusions as to the endothelial origin of the phagocytic cells of the lung tissue coincide in every way with those expressed by Permar,[9] colleague of Klotz and Haythorn, who also emphasizes the nonparticipation of the epithelium in those phenomena of phagocytosis.

Although a great deal has been contributed to the better scientific understanding of the disposition of particulate matter in the lung tissue and lymph glands,[10] certain steps by which this material may gain access to the lower respiratory tract from the upper air passages are still undetermined. It is now generally accepted that anthracosis originates by the aerogenic route of dust inhalation; at least this is the belief expressed in the more recent articles on this and related subjects. That there is direct connection between the various parts of the eye, nasal and oral cavities was brought out with renewed force during the influenza epidemic, in conjunction with studies regarding the use of the gauze mask.

Corper and Enright [11] found that although the greater part of particulate matter (India ink and bacillus prodigiosus) entering by way of the eye is subsequently swallowed and passes into the gastro-intestinal tract, a small but definite portion of it finds its way into the larynx and trachea, where it may persist even as long as a week. In its passage from the eyes, the material traverses a definite channel, dependent on which eye it has entered or into which it has been introduced, being found on the corresponding side of the nasopharynx and tonsil. Infectious material that is ingested is far less likely to enter the respiratory tract than that entering by way of the eye. More recently, Bloomfield,[12] in studying the dissemination of bacteria in the upper air passages, found that sarcina lutea or charcoal particles implanted on various areas in the mouth and pharynx adhered at the site of inoculation. The ingestion of a large glass of water following inoculation did not seem to remove more than a very few of the organisms. Whatever the number removed, such organisms were swallowed with the ingested fluids, and not reimplanted on other parts of the mouth or throat, save for an occasional colony. Organisms inoculated on one side of the tongue traveled along the same side with practically no spread across the midline; organisms inoculated on the tonsil or pharynx did not come forward into the mouth.

In 1920, an article appeared by Mullin and Ryder,[13] which detailed the surprising ease with which fluid suspensions of carbon and tubercle bacilli dropped into the noses of rabbits entered the lungs. "The technic was simple as possible. The rabbit was held, usually on its back, with the nose elevated, and about 1 c.c. of India ink or bacterial emulsion allowed to flow into one nostril from a pipet inserted just far enough to insure the fluid entering the nose." Thus, they obtained almost entire blackening of the upper lobes of the lungs, with many black spots irregularly distributed over the rest of the lungs, especially when the ink was given a number of times. The tuberculosis obtained in the same way had involved the upper and middle lobes when the rabbits were killed after seven weeks.

In the hope of being able to utilize the intratracheal route for the more direct application of therapeutic agents in pulmonary inflammatory conditions, and to elucidate certain phases of pulmonary edema, Winternitz and Smith [14] studied the absorption of fluids from the lungs and found that high quantities of fluid can be introduced through the trachea without untoward effects. In acute inflammatory processes, fluid in the pulmonary parenchyma may be a means of disseminating the infection through the lung tissue. A considerable period of time may be necessary before fluid (isotonic salt solution) introduced into the alveoli of the lung is entirely absorbed. After eighteen hours, much has disappeared, and within four days it has been absorbed without a trace. Inert foreign material can be washed out by the method of intratracheal pulmonary irrigation; but even after prolonged treatment of this kind, in which many liters of irrigating fluid are employed, there is still a residue of the original material introduced. A nonlethal dose of virulent pneumococci introduced into the lungs of rabbits, followed by irrigation, resulted in a very diffuse and fulminating lobar consolidation. Irrigation with salt solution not only cannot be utilized to advantage, but is actually a disseminator and an aggravator of the inflammatory process within the lung.

Even though histologic studies of the distribution of aspirated fluids containing particulate matter were not available, roentgenologic studies in experimental animals have been recorded. In 1917 Waters, Bayne-Jones and Rowntree [15] forcibly injected into the trachea of dogs a 10 per cent. suspension of iodoform in olive

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9. Permar, H. H.: An Experimental Study of the Mononuclear Phagocytes of the Lung, J. M. Res. **42**: 9 (Sept.) 1920, and The Development of the Mononuclear Phagocyte of the Lung, ibid. **42**: 147 (Nov.-Jan.) 1920-1921.

10. Gardner, L. U.: The Relatively Early Lesions in Experimental Pneumoconiosis Produced by Granite Inhalation and Their Influence on Pulmonary Tuberculosis, Am. Rev. Tuberc. **4**: 734 (Dec.) 1920. Willis, H. S.: Studies on Tuberculous Infection, Spontaneous Pneumoconiosis in Guinea-Pigs, Am. Rev. Tuberc. **5**: 189 (May) 1921.

11. Corper, H. J., and Enright, J. J.: The Eye as a Portal of Infection in Respiratory Diseases, J. A. M. A. **74**: 521 (Feb. 21) 1920.

12. Bloomfield, A. L.: Am. Rev. Tuberc. **5**: 903, 1922; Bull. Johns Hopkins Hosp. **33**: 145, 1922.

13. Mullin, W. V., and Ryder, C. T.: Am. Rev. Tuberc. **4**: 683 (Nov.) 1920.

14. Winternitz, M. C., and Smith, G. H.: Contributions to Medical and Biological Research, Osler Memorial **2**: 1255, 1919.

15. Waters, C. A.; Bayne-Jones, S., and Rowntree, L. G.: Roentgenography of the Lungs, Arch Int. Med. **19**: 538 (April) 1917

oil, under ether anesthesia with the animal lying on its abdomen. Dissection showed the material apparently in the same degree of suspension in the bronchi, bronchioles and smallest air passages. Microsections showed large masses of fat filling the alveoli. The position of the catheter in the trachea determined somewhat the distribution of the fluid. The plates revealed that the bronchioles of the upper lobes and the alveoli of the apexes were filled when the injection was made into the lower third of the trachea. The mixture produced a proliferative broncho-pneumonia.

In view of the belief of Klotz and his coworkers that carbon enters the lung parenchyma only through the alveoli, it seems well to call attention to the fact that bacteria may act slightly differently at times, since Winternitz, Smith and Robinson[16] have found that pneumococci can enter the tracheal lymphatics through a damaged epithelium and spread by way of the lymphatics to the lung. The lymphatics of the submucosa of the trachea afford a direct pathway of infection to the lung. The submucosa of the trachea contains a rich plexus of lymphatics, prominent everywhere and devoid of valves. Although this lymphatic system provides a pathway for infection, it may also serve as a protective mechanism against pulmonary infection; for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph glands. They divide the pneumonias into two groups: those secondary to damage of the protective mechanism of the upper respiratory tract, and those in which such damage was not demonstrable. No explanation has been suggested for the latter, except that the pathway of the microorganisms was through the lumen of the trachea and bronchi.

Realizing that there were certain gaps in the steps by which inhaled dry or aspirated liquid particulate matter reached the lung parenchyma, information which might eventually suggest a means of applying therapeutic agents to the lung, experiments were undertaken to follow if possible the immediate result of the inhalation of soot, and inspiration or aspiration of India ink (fluid). Regarding the inhalation of soot for either short or long periods of time, microscopic examination revealed that it was rather irregularly deposited in the air passages, and that marked accumulations occurred, especially on the elevations or projections seen at the bifurcations of the smaller and larger divisions of the respiratory passages. In distinction to this, the alveoli were comparatively free from the inhaled crabon particles. Its final deposition around miliary tubercles also occurred irregularly, some being surrounded with heavy deposits of carbon and others being fairly free from such deposits; so that an inhalation therapy with particulate matter suspended in the respired air would not at present seem feasible in pulmonary tuberculosis.

Liquids inspired or aspirated into the lung showed an entirely different histologic distribution, the tendency being toward an immediate aspiration into the alveoli, where the particulate matter was retained for a comparatively long time. If deposit was retained in the bronchi and bronchioles, this would be found lying along the walls, and not accumulated at the bifurcations, and on projections seen histologically as noted with the dry inhaled smoke or soot. While inhaled soot appeared macroscopically to be fairly uniformly disseminated throughout the entire lungs although irregularly as to the finer histologic distribution, inspired or aspirated fluid (India ink) was more patchy in its localization, which, however, conformed to certain definite laws dependent on the posture of the animal at the time of inspiration of the fluid. In rabbits in the horizontal posture, with head slightly elevated, repeated nasal instillations of small amounts of India ink, from 1 to 3 c.c., failed to enter the trachea or lungs. When, however, the animals were held in the vertical posture and the ink dropped into the nose, even after one instillation it was visible in the lungs, usually being confined to the lower lobes. Under ether anesthesia, with the rabbit in the horizontal posture and the head slightly elevated, an instillation of India ink would readily enter the lungs; but the distribution differed from that seen in the vertical posture in that the greater part was confined to the upper lobes. The distribution was also dependent on the side on which the rabbit was lying during the instillation. If the animal lay on the right side, the ink was confined mainly to the right upper lobe; if on the left side, to the left upper lobe.

The postural distribution was also borne out in dogs, although access to the lung was more difficult without anesthesia in that it required an immediate administration of rather large amounts of India ink (from 10 to 20 c.c.) to attain results in the vertical posture, and then only relatively small amounts were inspired into the lungs, mostly into the lower lobes. With the animal under ether anesthesia, however, and in the horizontal posture, aspiration was easily accomplished, the ink being confined mostly to the upper lobes and to the side on which the animal was lying. These results were also repeated in the main in an artificial imitation of the chest, in which a fresh rabbit lung was suspended in a large wide mouthed bottle, the trachea connected with a dropping funnel containing India ink. Through a second hole entering the stopper of the bottle, a glass tube was connected with a suction pump to produce the inspiratory negative pressure occurring in the pleural spaces. The bottle could be laid in any position to imitate the various postures of the animal. From these experiments it seems highly probable that the disposition of the inspired fluid is dependent entirely on a mechanical mechanism, gravity and inspiratory suction. A study of sections from the lungs of animals permitted to aspirate India ink also indicates that the solid particles of the ink which had reached the alveoli were to a great extent retained in them even after three months. In one animal that had inspired India ink from the nose eleven days prior to section, a typical lung abscess was found in the posterior portion of the lung even though the animal was not ill.

By utilizing the information gained from the experiments with India ink, typical upper lobe pulmonary tuberculosis was produced in dogs by instilling heavy suspensions of dead human and bovine tubercle bacilli in saline solution into the nose, with the head slightly elevated, while the animal was under ether anesthesia. Right or left side upper lobe involvement was produced at will by merely placing the animal on the right or left side during the nasal instillation. The tuberculous involvement resembled the typical upper lobe type found in man, except that cavitation did not occur with the dead bacilli. Typical fibrotic pleural and interlobar adhesions were found, and histologically the tissues presented the typical granulation tissues of tuberculosis, with necrosis evident in locations.

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[16] Winternitz, M. C., Smith, G. H., and Robinson, E. S.: Bull. Johns Hopkins Hosp. **31**: 63 (March) 1920.

These experiments are significant in that they throw light on the importance of posture during anesthesia, especially in avoiding the quick and ready access of infectious material which is aspirated from the upper air passages to the finest divisions of the lungs, the alveoli, which act in the manner of traps, where it may be retained for a long time, to cause subsequent tissue changes. If we are to accept the more recent conclusions on lung abscess, which indicate that direct aspiration is the more important mode of infection, and this seems to be the trend of the times, it behooves the surgeon and anesthetist to improve by consideration of posture the means and methods of administering anesthetics, especially in operations on the upper respiratory tract. Moore[17] calls attention to the danger of the semirecumbent and upright positions during anesthesia, which the foregoing studies bear out.

The experiments also seem to indicate that the present mode of treating pulmonary hemorrhage can be placed on a more scientific basis by consideration of posture as a factor in promoting hemostasis in the bleeding lung; not to mention that there is a possible connection between posture and the intrapulmonary dissemination in the open ulcerative type of tuberculosis. Although dead tubercle bacilli have been used, for obvious reasons, in the experiments cited, and a nonprogressive pulmonary tuberculosis, confined mainly to the upper lobes, resembling that seen in man, was produced, it seems justifiable to infer that, by using living virulent bacilli in the same manner and with proper safeguard for the worker, the disease can be reproduced in dogs and other animals, presenting all the clinical characteristics of pulmonary tuberculosis in man, with massive acute pneumonic consolidation or ulceration and cavity formation suitable for all types of experimental therapy, surgical and medicinal. Further studies on the aspiration of fluids both from extra and from intrapulmonary sources may also elucidate the many vague conceptions as to the mode and spread of intrathoracic diseases.[18]

SUMMARY

The immediate intrapulmonary distribution of inhaled particulate matter (smoke or soot) differs from that of the inspiration or aspiration of particulate matter suspended in fluids (India ink). The former is found heaped up at the points of bifurcation of the air passages or on any prominent projections, as seen in the histologic sections, with relatively little being retained in the alveoli; while the inspired fluid quickly reaches the alveoli, where the insoluble particles of it are retained for a comparatively long time by the trap-like action of these terminal air vesicles. While the inhaled particles are fairly uniformly distributed throughout the entire lung, the inspired or aspirated fluid is irregularly distributed, and its location is determined to a great extent by posture. The pulmonary inspiration or aspiration of fluids after nose instillation occurs readily in dogs and rabbits under ether anesthesia, and in the horizontal posture with the head slightly elevated. The inspired fluid is confined to the upper lobes of the lungs and to the side on which the animal lay, while without anesthetic, repeated nose instillations are usually unsuccessful in this posture. In the vertical posture, however, the inspiration of fluids into the lungs is easily attained in rabbits, but less so in dogs, without anesthetic, the fluid being found mainly in the lower lobes. The postural distribution can be imitated in an artificial chest, indicating that it is determined by mechanical means, gravity and inspiration or aspiration. By utilizing the postural data, right or left side upper lobe pulmonary tuberculosis, possessing many of the characteristics of the disease in man as to location, the formation of pleural adhesions, tissue granulation and necrosis, can be reproduced in dogs, by the nasal instillation of suspensions of tubercle bacilli while the animal is under ether anesthesia and lying on the right or the left side during the operation.

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MULTIPLE STAGE MEASURES IN THE SURGERY OF SEVERE HYPERTHYROIDISM *

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We have reported elsewhere,[1] in a review of our last year's work (1921), a mortality rate of 1.17 per cent.—four deaths in 342 thyroid operations performed during that year. Of the four, two were thyroid deaths—one following the ligation of but one superior thyroid pole, and one following a hemithyroidectomy. The latter patient, it is to be noted, had an auricular fibrillation and a history of decompensation. We had previously ligated one of her poles, and the other half of the thyroid had been removed by another surgeon some years before. Of the other two deaths, one was from pneumonia and one an unexplained death on the table in a patient with nontoxic goiter operated on under ether in the students' clinic. Therefore, purely for the purpose of self-criticism, we may say that the first two were avoidable deaths.

We say "avoidable" because it is our opinion that the available surgical measures can be so graded from the measures which almost any patient, no matter how toxic, can endure up to the complete operation; furthermore, because by means of even the most minor of these measures it is in most instances possible by their repeated application to improve the condition so much that the patient may be carried into a more favorable phase, in which a more extensive and likewise more effective procedure may be made use of, until, step by step, removal of four fifths or more of the entire thyroid has been accomplished.

While we admit, of course, that there are hopelessly toxic cases in which death is imminent and practically certain, when no active measure is applicable, yet with the plan we have made use of, we feel that when a purely thyroid death occurs in a case considered within the bounds of operability, it will be the result of misjudgment and of consequent attempts to apply too advanced surgical steps as the first measure of treatment, or to progress too rapidly in the successive surgical steps. For this reason, therefore, we criticize ourselves for the two deaths spoken of.

The available surgical measures in our clinic have been graded and grouped in order of magnitude as:

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[17] Moore, W. F.: Pulmonary Abscess: An Analysis of Two Hundred and Two Cases Following Operative Work About the Respiratory Passages, J. A. M. A. **78**: 1279 (April 29) 1922.

[18] The complete report of these experiments will appear elsewhere.

* The plan here described represents that employed by Dr. Frank H. Lahey and his associates at the Thyroid Clinic, New England Deaconess Hospital, Boston.

[1] Lahey, F. H.: A Review of a Year's Thyroid Work, Boston M. & S. J. **186**: 563-568 (April 27) 1922.

boiling water injection, single superior pole ligation, double superior pole ligation, single inferior artery ligation, double inferior artery ligation, hemithyroidectomy, and complete partial thyroidectomy. Either of the later procedures may be preceded by raising of the skin flap, and control of the bleeding—a procedure which distinctly lessens the time of the operation on the thyroid and divides the burden which the organism must bear.

The mortality of thyroid operations of several years ago was of such a high rate as to impress itself so deeply on the minds not only of the laity but also of the medical profession that even today many hesitate to submit themselves or their patients to operative procedures.

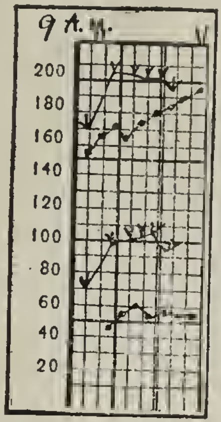

Chart 1.—Anesthetist's chart, showing progressively rising pulse rate during operation. This operation was stopped when a hemithyroidectomy had been completed. The removal of the remaining lobe in the face of this rising pulse would have been an undue risk. The remaining lobe will be removed in about two months.

It has therefore been the aim not only of our own but also of every other organized thyroid clinic to bring the mortality rate down to its very lowest possibility. We felt that this could be accomplished partly by improvement in the technic of the operation. This, no doubt, was true; but we soon found that after we had performed a few hundred thyroid operations, the operative procedures became well organized, and yet the mortality of the operation remained a definite affair.

We felt also that improvement in judgment based on an extensive thyroid experience played a very important part in the control of the mortality rate in these cases, and in this impression we have not been disappointed. We still believe that the clinical interpretation of the patient's condition, intoxication, and ability to withstand operative procedures is best based on a personal summing up of the patient, correlated with the laboratory data available with the case and personal observation of the individual. We believe that judgment based on an extensive operative thyroid background is the most essential feature in controlling mortality.

PROCEDURE IN VARIOUS DEGREES OF TOXICITY

This conclusion being reached, however, we wished to formulate measures of various grades to apply to cases of different degrees of toxicity, and have therefore devised and use a plan, modified as each case required in order to meet what were considered the needs of that case, having in mind always that when any doubt existed concerning the ability of the patient to endure the selected step, not that step but the next step below it would be applied.

Taking as an example, then, the most toxic type of patient coming to the clinic, the following procedures are, if necessary, employed:

The patient is placed in the hospital for a period of observation to decide whether or not she shall be rejected entirely as too ill for any surgical measure. It has been our experience that any patient who is able to get to the clinic will not be so toxic that rejection will be necessary. We have rejected no patients during the past year, and but few in our entire experience with thyroid cases.

Having decided that the patient is too toxic for even igation of one superior pole, an injection of boiling water is made in bed or in the operating room, and this procedure repeated until such improvement has been accomplished that one of the superior thyroid poles may be ligated. We have had, in years past, an aversion to boiling water injections, engendered perhaps by the difficulty encountered in the removal of the thyroid later—a difficulty which is real, as will be attested by all surgeons who have had experience in performing partial thyroidectomy on thyroids into which injections of boiling water have previously been made. It is one, however, which we have found by no means insurmountable. We have made use of this measure only as a preliminary, to step the patient up to more effective and more surgical procedures. We feel, however, that it has a distinct place in the extremely toxic cases. It has also been of value to us in a group of cases in which all four thyroid poles have been tied at other clinics, where this is deemed a complete surgical procedure, and in which cases a return of intensely toxic symptoms has occurred. In such cases no preliminary measures other than the boiling water injection are available.

If, now, we have a patient, previously injected, who is at a stage in the disease at which one is in doubt as to whether or not single superior pole ligation will be endured, it is our custom to prepare the patients for operation, using scopolamin, $\frac{1}{200}$ grain, and morphin, from $\frac{1}{4}$ to $\frac{1}{6}$ grain, two hours and one hour before operation, and then take them to the operating room and anesthetize them with gas-oxygen for a few moments, during which time the rate and character of the pulse and the pulse pressure are observed. If the condition, in the anesthetist's (the same person anesthetizes all the patients) and in our opinion, warrants, a single superior pole is tied; if not, the patients are returned to bed and the degree of reaction to this procedure is noted. If the reaction is not excessive, they are taken once more to the operating room under the same conditions in a few days, the pole is tied, and they are again returned to bed and the degree of reaction is noted. If the reactions in either event have been alarming, we must again return to boiling water injections until a greater degree of improvement has been accomplished. If, on the other hand, the ligation is well borne, within a week or ten days the remaining superior pole may be ligated, and within a few days the patient may be discharged from the hospital, returning when possible every two weeks for metabolism examination. When it is evident by the course of the weight gain, pulse fall, and metabolism drop that the optimal benefit has been obtained, or that, as sometimes happens, no marked improvement is to result, the patient is then reentered into the hospital for further surgical measures.

TYPICAL BASAL METABOLIC DETERMINATIONS IN A CASE OF HYPERTHYROIDISM

Mrs. Jennie R., aged 56	Basal Metabolic Rate	Pulse Rate	Body Weight, Pounds
March 23, 1921	+46	104-134	87.1
March 24, 1921, double superior pole ligation			
April 15, 1921	+31	110-116	88
May 4, 1921	+24	100-114	88.5
May 5, 1921, partial thyroidectomy			
May 16, 1921	+15	100-106	86.75

The weight, pulse and metabolism chart, together with the anesthetist's chart showing five-minute pulse, respiration and blood pressure recorded during the previous operative procedures, is reviewed, the patient again taken to the operating room, and, on the basis of these data and the patient's immediate condition while on the table and under the anesthetic, a decision is reached as to what further surgical measure shall be applied. If the patient is deemed too toxic to permit even a hemithyroidectomy, then the right inferior thyroid artery is tied on the inner border of the scalenus anticus; if it is considered wise, the left inferior artery is also tied; if not, the patient is returned to bed, the reaction noted, and in a few days returned again to the operating room and the left artery tied. The patient is again sent home, if possible checked each two weeks by metabolism, and again returned to the hospital when it is apparent that the greatest degree of improvement has been accomplished.

In such an extreme case as this, for example, there will not only be accomplished the progressive improvement which accompanies the divided preliminary measures, but much information will have been accumulated of prognostic value regarding the operative tolerance of the patient. We have noted repeatedly that hyperthyroid patients who have to make several visits to the operating room acquire a psychic tolerance which is not entirely explained by the diminution in the toxicity of the disease.

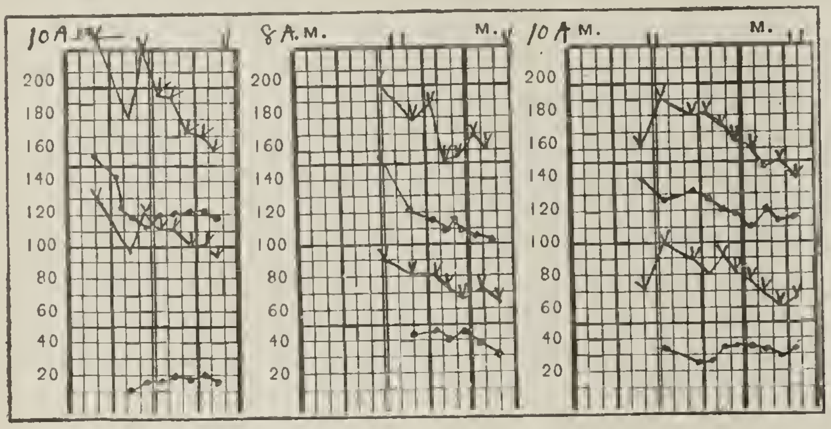

Chart 2.—Three anesthesia charts selected from a great many to illustrate the favorable drop in a case progressing safely during the operation. A great many, of course, either remain at the same level throughout the operation or rise slightly.

Valuable information as to the postoperative thyroid reaction and, still further, the course and character of the pulse during each of the foregoing procedures, and the relation of the average rate during each progressive step to the preceding steps will be available, a gradually dropping pulse average with each step of the procedure being a favorable prognostic sign and a gradually rising one an unfavorable one, in our experience.

The four poles having been tied, there will be but few cases in which an operation directed toward removal of thyroid tissue cannot be undertaken. We have ligated all four poles into two, three and four stage procedures many times, and have never seen anything indicating parathyroid changes. We have never ligated all four vessels at one sitting.

The patient is taken to the operating room again, and if under anesthetic her condition does not contraindicate it, the skin flap for a complete thyroidectomy is turned up and the sternohyoid and sternothyroid muscles on only one side are cut, exposing one half of the gland. This is done in order that we may stop if it seems desirable after a hemithyroidectomy, sending the patient back to bed and having her back for removal of the remaining half several days later, or several weeks later, when she has made sufficient gain to justify it. As stated earlier in the paper, any of the thyroidectomies, hemi or partial, may be preceded by raising of the skin flap. If this is decided on, we prefer to resuture the skin edges with wound clips, as in our experience this flap can readily be raised without bleeding at any time up to two weeks and the wound edges resutured, with a little undercutting and refreshening. We wish particularly to emphasize the advantage in our clinic of this exposure of but half of the gland, as it makes the removal of the second half at a later operation very much easier, leaving, as it does, the remaining lobe free from adhesions, and permitting an easy, rapid and relatively bloodless removal at a later date. If, after the hemithyroidectomy, it seems wise to proceed with the removal of the remaining lobe, the prethyroid muscles over the remaining lobe may at once be cut and the complete operation proceeded with.

One inexperienced with reopened thyroid incisions either early (from seven days to two weeks) or late (several months), might anticipate difficulties with secondary exposure or the production of a poor scar. Such has not been our experience. We have repeatedly reopened thyroid incisions while still in the stage of healing in which the wound appeared to be filled with small spots of slough, have removed the remaining lobes, sutured the skin, drained with flat rubber dam, and obtained very satisfactory scars. We have carried out the same procedure at later dates when healing was complete in a similar way, except that we have excised the scar of the first operation carefully.

COMMENT

As one reads this seemingly endless list of procedures, it does not appear possible that any patient would possess the patience and fortitude to see it through from beginning to end. It must be remembered in this connection that the entire application of these graded measures is rarely necessary, a great majority of patients requiring at the most as a preliminary measure only ligation of the superior poles, and a great many being able to have the operation of partial thyroidectomy done at one sitting. In cases in which the entire procedure has been necessary, the intoxication of the patients has been of such severity that they have readily appreciated their illness and gladly cooperated in such conservative measures.

It is definitely our conviction that, for example, ligation of the inferior arteries or artery produces less reaction than hemithyroidectomy, and that the step from preliminary superior pole ligation to hemithyroidectomy or partial thyroidectomy is of such magnitude that it will necessitate greater risk in some cases than will result if inferior artery ligation be interposed between the two. We also feel very sure that partial thyroidectomy done in two stages of two hemithyroidectomies has played an extremely important part in helping us to diminish and maintain our mortality rate at a low level.

We realize that criticism of the above-described procedure as of unnecessary length, too complicated, hyperconservative, and so forth, is bound to arise. In answer to it, we reply that after a thousand thyroid operations, we feel that we can with practical certainty select the cases for operation so that deaths on the table do not occur, and that even when some error in judgment in this respect has occurred, our anesthetist, by means of his five-minute pulse, respiration and blood pressure chart will receive danger warning in sufficient time to permit the operation's being stopped and the patient returned to bed before a dangerous phase of the disease has appeared.

As to the postoperative reaction and possible death from it, we are by no means as optimistic. It has been our experience that it is possible for patients to go through any of the surgical procedures on the thyroid, leave the table in good condition, and die within a period of from four to forty-eight hours. The two deaths in this year's series, spoken of in the introductory paragraphs, were of this type. Because of our inability to prophesy what the degree of reaction will be, and because we feel that a considerable percentage of our present mortality results from this, and also because we feel that increased operative tolerance and prognostic data can be obtained in no other way, we have made use of and advocate these multiple stage procedures.

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MILK INGESTION IN RELATION TO CHANGES IN BODY WEIGHT OF NEW-BORN INFANTS *

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For the new-born infant, a supply of mother's milk sufficient to meet its nutritional requirements is of the greatest importance. The question has been studied by many investigators, including Krueger,[1] Ssnitkin,[2] Camerer,[3] Dencke,[4] Haehner,[5] Hillebrand,[6] Tuley,[7] Feer,[8] Landois,[9] Jaschke,[10] Ramsey and Alley,[11] Scammon and Doyle,[12] Kirstein[13] and Pestalozza.[14] The question, however, was considered of sufficient importance to justify further investigation, particularly with respect to the amount of mother's milk obtained during the first ten days of life by infants receiving only five nursings every twenty-four hours. Fortunately, the series of babies studied by Ramsey and Alley, and by Scammon and Doyle likewise received five nursings in twenty-four hours; thus, our results are directly comparable with those obtained by these investigators. The series studied by the former investigators, however, included babies of mothers cared for by a charity hospital, whereas our records were compiled from economically independent individuals confined as private patients at the Swedish Hospital, Minneapolis. No attempt is made in the present study to establish any claims for the superiority of the four hour feeding schedule, as compared either with shorter or with longer intervals between nursings. We may state, however, that the results obtained by permitting new-born infants to nurse every four hours, omitting the 2 a. m. feeding, were very satisfactory, and much may be said in favor of this feeding schedule.

MATERIAL AND METHODS

The present paper includes a study of the changes occurring in body weight, and also of the amount of breast milk obtained at each nursing during the first ten days of life for 298 infants (149 first born and 149 later born infants) weighing between 2,500 and 5,000 gm. at birth (Tables 1 and 2). Throughout this study the date of birth was considered as the first day of life, regardless of the hour at which the child was born. The average length of the first day, consequently, was considerably less than twenty-four hours.

For each infant the naked body weight was recorded immediately following birth, and thereafter daily before the 10 a. m. feeding. According to the routine nursery care as established at the Swedish Hospital, Minneapolis, starting from six to ten hours after birth the babies were permitted to nurse for twenty minutes every four hours from 6 a. m. to 10 p. m. inclusive, making a total of five feedings each twenty-four hours. As a rule, only one breast was nursed at each feeding. However, in a few instances in which the supply of breast milk was low, the babies were given the two breasts at each feeding. The amount of mother's milk obtained at each feeding was determined by weighing the infants before and after nursing on balance scales accurate to 5 gm. In addition to breast milk, the babies received 10 per cent. lactose solution ad libitum up to 60 c.c. after each nursing during the first five days postpartum. The average amount of lactose solution taken per feeding, and also the total fluid ingested is recorded in Table 2.

TABLE 1.—AVERAGE DAILY BODY WEIGHT (GRAMS) OF FIRST BORN AND LATER BORN INFANTS (SEXES COMBINED)

	Day									
	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th
First born infants	(149)* 3,310	(127) 3,193	(135) 3,098	(141) 3,044	(142) 3,124	(144) 3,151	(136) 3,182	(140) 3,192	(138) 3,224	(128) 3,230
Later born infants	(149) 3,502	(123) 3,375	(141) 3,315	(135) 3,258	(134) 3,324	(141) 3,354	(134) 3,383	(132) 3,398	(129) 3,403	(120) 3,409

* Number of cases in parentheses.

CHANGES IN BODY WEIGHT

The average birth weight of the 149 first born infants weighing between 2,500 and 5,000 gm. (sexes combined) was 3,310 gm. (Table 1). By the fourth day the weight reached a minimum of 3,044 gm., the average loss amounting to 266 gm. During this time, however, the daily decrease in weight was not uniform. On the second day, 44 per cent. of the loss (117 gm.) occurred, whereas on the third aand fourth days the decrease became progressively less, amounting to 95 and 54 gm., respectively. The total loss for the first born infants formed approximately 8 per cent. of the initial average body weight. Following the fourth day postpartum, the average body weight progressively increased, reaching 3,230 gm. by the tenth day, a gain of 186 gm. The greatest daily increase in weight (80 gm.) occurred on the fifth day. Thereafter the daily gain in weight was somewhat irregular, but definitely less than that occurring on the fifth day.

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* Read before the Section on Diseases of Children at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

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[14] Pestalozza, A.: Food Requirements of the Breast-Fed Infant, Pediatria **30:** 158, 1922.

TABLE 2.—AMOUNT OF BREAST MILK, TEN PER CENT LACTOSE SOLUTION, AND TOTAL FLUID INGESTION PER FEEDING FOR FIRST BORN AND LATER BORN INFANTS DURING THE FIRST TEN DAYS OF LIFE

	Average Amount of Breast Milk per Feeding				Average Amount of Breast Milk per Feeding (Sexes Combined)		Average Amount of 10 per Cent. Lactose Solution per Feeding		Total Fluid Ingested per Feeding (Sexes Combined)	
Day of Age	Males First Born	Females First Born	Males Later Born	Females Later Born	First Born	Later Born	First Born	Later Born	First Born	Later Born
1	.....	.....	.....	.....	.....	.....	18.5	17.5	18.5	17.5
2	(84)* 12.2	(69) 13.9	(82) 17.3	(86) 16.7	(153) 13.0	(168) 16.9	28.1	29.3	41.1	46.2
3	(254) 24.4	(254) 23.5	(294) 26.4	(246) 25.0	(508) 24.1	(540) 25.7	26.5	27.1	50.6	52.8
4	(398) 39.7	(344) 40.7	(389) 46.5	(330) 45.3	(742) 40.2	(719) 46.0	21.0	18.0	61.2	64.0
5	(414) 54.2	(357) 55.6	(396) 60.8	(337) 58.9	(771) 54.9	(733) 59.4	18.3	15.6	73.2	75.0
6	(416) 62.0	(363) 62.5	(400) 69.7	(334) 67.3	(779) 62.2	(734) 68.6				
7	(414) 66.6	(364) 67.7	(398) 72.8	(338) 74.5	(778) 67.3	(736) 73.6				
8	(407) 73.7	(359) 72.4	(378) 77.1	(333) 77.0	(766) 73.1	(711) 77.0				
9	(353) 77.9	(356) 75.5	(378) 78.5	(306) 82.8	(709) 76.8	(684) 80.5				
10	(323) 77.6	(316) 79.3	(291) 85.0	(238) 84.2	(649) 78.4	(529) 84.7				

* Number of feedings in parentheses.

The average weight of the later born infants (sexes combined) was 3,502 gm. (Table 1), or 192 gm. more than the average for the infants of primiparous mothers. As with the first born babies, the minimal weight for the later born infants likewise occurred on the fourth day postpartum; the decrease during this period amounted to 244 gm., whereas with the former the average loss in weight amounted to 266 gm. The greatest average loss (127 gm.) occurred on the second day. On the two succeeding days, the decrease in weight became progressively less, amounting to 60 and 57 gm., respectively. Following the fourth day postpartum, the weight progressively increased, reaching an average of 3,409 gm. on the tenth day. The total gain in weight averaged 151 gm., or 35 gm. less than the gain recorded for the first born infants during a similar period. The increase in weight for the later born infants occurred irregularly, the greatest gain taking place on the fifth day. Thereafter, the daily increase was definitely less, in general showing a progressive decrease from the sixth to the tenth day, inclusive. At this time the weight for the babies of multiparous mothers was still 2.6 per cent. (93 gm.) below the average birth weight, whereas with the first born infants the weight on the tenth day was 2.4 per cent. (80 gm.) below the initial average weight.

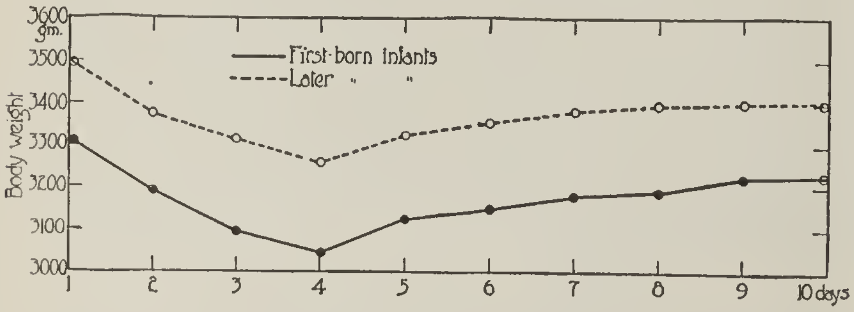

Chart 1.—Average daily body weight of first and later born infants.

AMOUNT OF BREAST MILK INGESTED PER FEEDING

The amount of mother's milk obtained per feeding by the first born and by the later born infants (sexes separated, Table 2) increased rapidly from the second to the fifth day, inclusive. On the following days the daily increase continued, but much less rapidly than earlier. In comparing the two sexes for each group there is apparently no distinct sexual difference with respect to the amount of mother's milk ingested. The averages, however, show that at corresponding ages the babies of multiparous mothers consistently obtained larger feedings than first born infants. Since no distinct sexual difference exists with respect to the amount of milk which babies receive from the breast during the first ten days of life, the data for the two sexes in each group were combined (Table 2). For the first born infants (sexes combined), the amount of breast milk obtained shows a rapid increase from an average of 13.0 gm. per feeding on the second day to 54.9 gm. on the fifth day. From the sixth to the tenth day, inclusive, the increase continued, although less rapidly than earlier, the average feeding on the tenth day amounting to 78.4 gm. With the later born infants (sexes combined), the average amount of breast milk per feeding increased from 16.9 gm. on the second day to 59.4 gm. by the fifth day. On the tenth day, the food intake averaged 84.7 gm. per feeding.

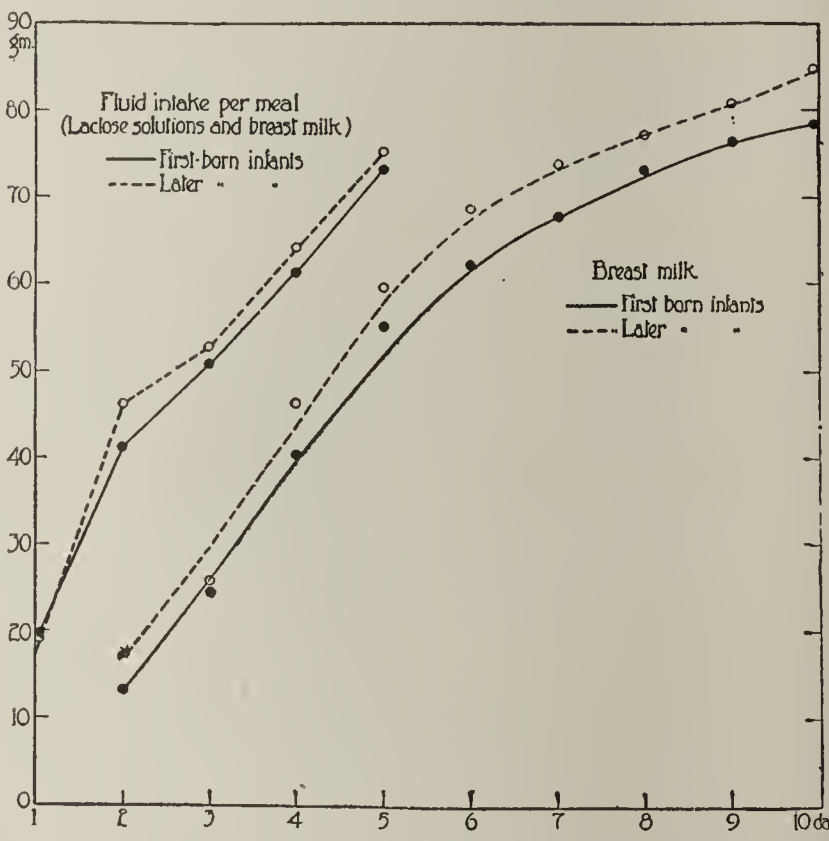

Chart 2.—At left, average fluid intake per meal (including lactose solution and breast milk) for the first five days; at right, average intake of breast milk per meal for each of the first ten days.

The increasing supply of mother's milk for each group of infants is represented graphically by curves (as smoothed by means of graphic interpolation) in Chart 2. The curves (based on averages of 5,855 and 5,554 individual feedings for the first born and later born infants, respectively) show clearly that at corresponding ages the babies of multiparous mothers obtain larger feedings on the average than first born infants obtain during the first ten days of life. The curves also show a rapid increase in the amount of milk taken per feeding up to the fifth or sixth day postpartum, after which the rate of increase is relatively slower, as shown by the less abrupt ascent of the curves.

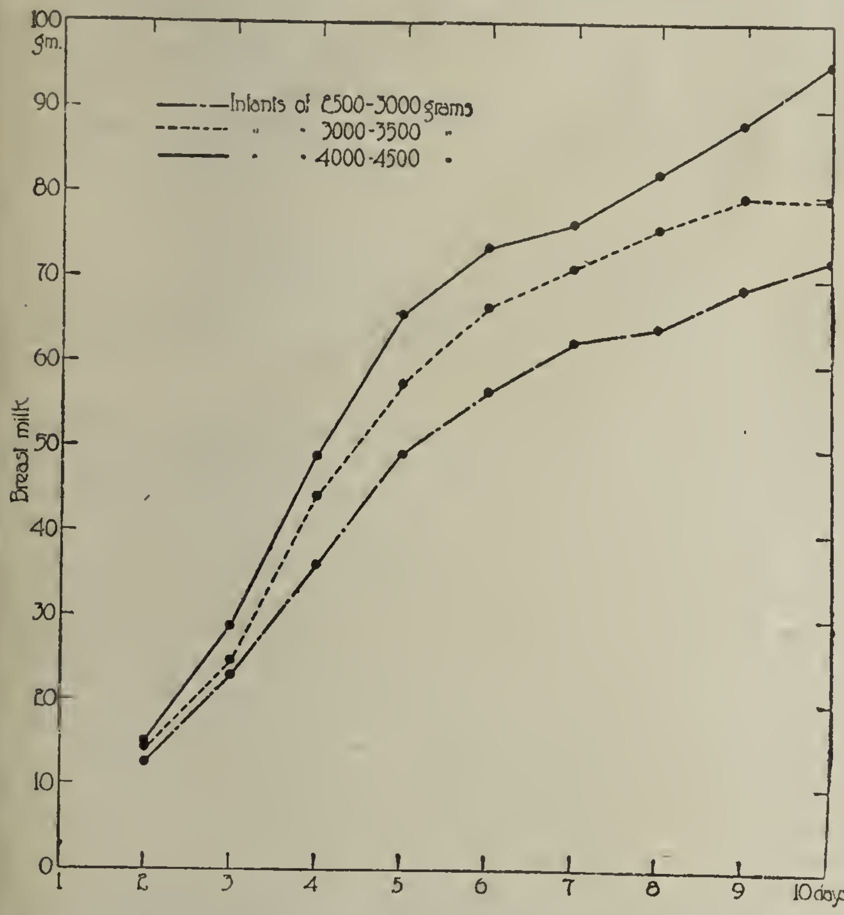

Chart 3.—Average ingestion of milk by all infants of different weight groups for each of the first ten days.

On considering the amount of milk obtained from the breast each nursing by the smaller infants as compared with larger infants, of both primiparas and multiparas, the latter are found to get a larger amount of milk than the former, particularly after lactation is fairly well established (Chart 3). Not only is this true, but (as shown by the curves in Chart 4) of each weight group the babies of multiparous mothers, on the whole, apparently receive more breast milk than first born infants of corresponding weight. These findings suggest that parity and also the size of the infant may have some influence on the amount of the breast milk the mother will supply to the infant. Greater stimulation of the breast by the more vigorous nursing of larger infants, however, may be a factor to be considered, particularly in relation to the larger amount of milk which heavier babies obtain on the average. Among other factors to be considered which might influence the amount of milk obtained from the breast might be mentioned the more favorable condition of the nipples of multiparous mothers, and also a greater functional capacity of the breasts of multiparous mothers. On determining the amount of breast milk obtained daily for each kilogram of body weight (Table 3), the average per unit of weight is slightly higher for the later born than for the first born infants except for the eighth and ninth days. Here, again, is evidence that multiparous mothers are capable of supplying somewhat larger amounts of milk to their infants than are primiparous mothers.

In addition to breast milk, the babies were given 10 per cent. lactose solution ad libitum up to 60 c.c. after each nursing during the first five days. The average amount of lactose solution taken per feeding during the first two days (Table 2) by the first born and later born infants increased from 18.5 and 17.5 c.c. to 28.1 and 29.3 c.c., respectively. On the following three days, as the milk supply increased, the amount of lactose solution taken per feeding became progressively less. Apparently there was little difference in the amounts of lactose solution taken during this period by the first born infants as compared with the later born.

The total fluid intake (Table 2), including the lactose solution and the breast milk, for the infants of primiparous mothers increased from 18.5 c.c. per feeding on the first day to 73.2 c.c. on the fifth day. With the later born infants the averages show an increase from 17.5 to 75.0 c.c. during this period. Exclusive of the first day, the total fluid ingested was slightly higher for the latter group of infants. The average total fluid intake on the fourth and fifth days for our series of cases does not differ greatly from the average for the maximal meal on these two days, as determined by Scammon and Doyle. On the first, second and third days, however, the total fluid ingested was considerably higher for our cases than the average maximal meals as determined by Scammon and Doyle for this period. The higher fluid intake during the first three days of life by infants receiving lactose solution ad libitum lends support to the suggestion of these authors that the averages for physiologic gastric capacity based on the average amount taken per feeding are criteria of the ability of the mother to supply food and of the ability of the infant to ingest it, rather than actual measures of the capacity of the stomach.

TABLE 3.—GRAMS OF BREAST MILK TAKEN DAILY PER KILOGRAM OF BODY WEIGHT

	Day									
	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th
First born Infants	..	20.4	38.9	66.0	87.9	98.7	105.8	114.5	119.1	121.4
Later born infants	..	25.0	41.8	70.6	89.4	102.3	108.8	113.3	118.3	124.2

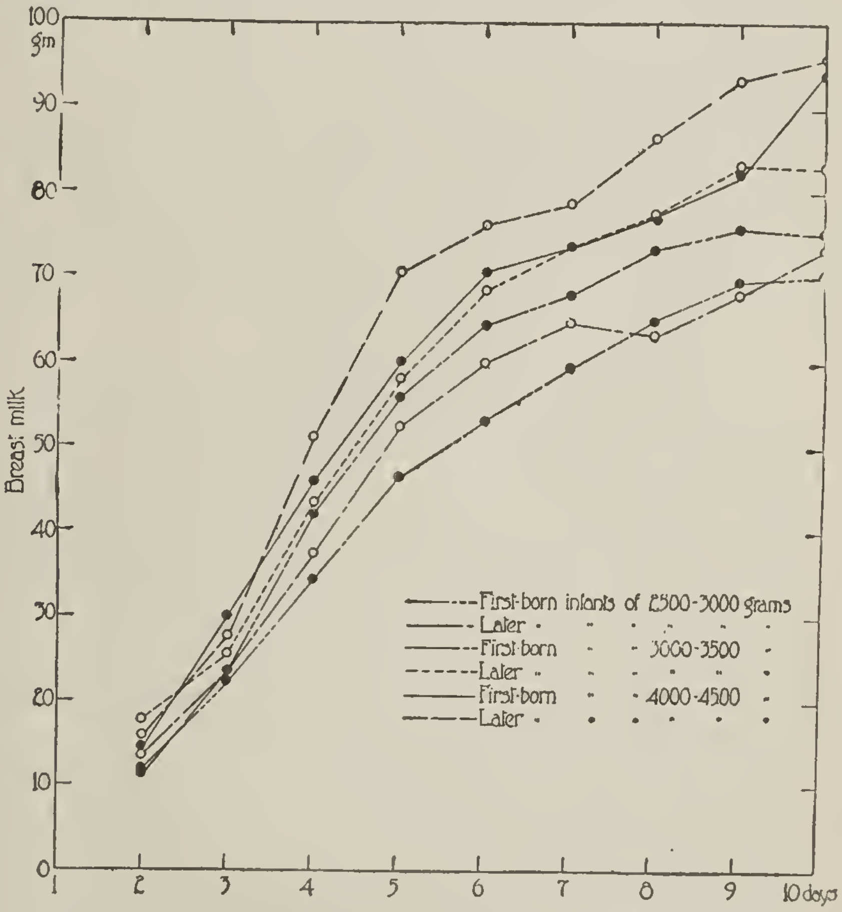

Chart 4.—Average amount of milk ingested per meal for each of the first ten days by infants of different weight groups, separated according to the parity of the mother.

CONCLUSIONS

Of previous studies of the amount of breast milk obtained during the first ten days after birth, the results of the present study probably can be compared most readily with those obtained by Ramsey and Alley and Scammon and Doyle. In these two investigations, the length of the period between nursings, and also the number of feedings daily, are identical with ours. In general, our findings agree closely with those obtained by Ramsey and Alley, and by Scammon and Doyle, particularly with those obtained by the latter. The essential difference noted is with respect to the amount of milk supplied by multiparous mothers as compared with primiparous mothers. Our data indicate that during the first ten days after birth later born infants obtain a larger amount of milk on the average at each feeding than first born infants. The observations reported by Scammon and Doyle were collected from patients delivered at the University Hospital, at which place multiparous mothers are admitted only in case of complications. Their series of cases consequently may have included a larger percentage of abnormal cases than occurred in our series, in which no such selection prevailed.

SUMMARY

1. The average body weight for 149 first born and also for 149 later born infants whose birth weights ranged between 2,500 and 5,000 gm. decreased to a minimum on the fourth day (the date of birth being considered as the first day). The average loss amounted to approximately 8 per cent. (266 gm.) of the birth weight for the first born infants, and to approximately 6.4 per cent, (244 gm.) of the initial weight for the later born infants. There was no progressively uniform daily decrease in weight; for each group the greatest loss occurred on the second day.

2. Following the fourth day, the average body weight for each group progressively increased. On the tenth day, however, the average weight of the first born and later born infants was still 2.4 and 2.6 per cent., respectively, below the initial weight. For each group of babies the greatest daily gain in weight occurred on the fifth day postpartum.

3. For the first born infants (sexes combined), the amount of breast milk obtained increased rapidly from an average of 13.0 gm. per feeding on the second day to 54.9 gm. on the fifth day. From the sixth to the tenth day, inclusive, the increase continued, although less rapidly, the average meal on the tenth day amounting to 78.4 gm. With the later born infants (sexes combined), the average amount of breast milk per feeding increased from 16.9 gm on the second day to 59.4 gm. by the fifth day. On the tenth day, the food intake averaged 84.7 gm. per feeding.

4. Throughout the period studied, the babies of multiparous mothers averaged larger feedings than the babies of primiparous mothers.

5. The heavier infants in general obtained more milk from the breast per feeding than lighter infants (first born and later born infants combined), particularly after lactation was well established. Furthermore, of each weight group the average meal in general was larger for the infants of multiparous mothers than for those of primiparous mothers.

6. Except for the eighth and ninth days, the average amount of mother's milk taken daily for each kilogram of body weight was slightly higher for later born than for the first born infants.

7. The average amount of 10 per cent. lactose solution taken per feeding increased to a maximum on the second day. On the following three days, as the supply of milk increased, the lactose solution ingested progressively decreased. Apparently there was no distinct difference in the amount of lactose solution taken during this period by the later born as compared with the first born babies.

8. The total fluid ingestion per meal (breast milk and lactose solution combined) during the first five days increased from 18.5 and 17.5 gm. to 73.2 and 75.0 gm. for the first and later born infants, respectively. Exclusive of the first day, the total fluid ingestion averaged slightly higher for the latter group of infants.

ABSTRACT OF DISCUSSION

Dr. M. L. Turner, Des Moines, Iowa: I am opposed to putting anything into the stomach of the new-born baby during the first two days, except the product of the mammary glands of the mother.

Dr. Isaac A. Abt, Chicago: The initial loss of body weight in the new-born is due primarily to a disproportion of intake and output. From one third to one fourth of this loss is due to the passage of meconium; from one eighth to one sixth to the excretion of urine; and in addition there is the loss due to evaporation of fluid from the body surface and the moisture of expired air. The figures given by Drs. Adair and Stewart on the percentage of the initial loss of weight amounted to 8 per cent. for the first born baby and 6.4 per cent. for later born babies. This conforms with my observations. The loss of weight in the first few days has come to be looked on as physiologic, and is called a normal process when the loss varies between 150 and 200 gm. This gives a percentage loss of weight of from 6 to 9 per cent. of the total body weight. Cases have been reported in which no loss in weight occurred, but these cases must be very rare. Those factors which influence the loss of weight, in general, are: 1. High birth weight, in which instances the loss is not only relatively but absolutely greater than the average. 2. The conduct and progress of labor. In cases of severe trauma there is increased loss of weight. Many of these babies are drowsy and refuse to nurse, and are grouped into the general class termed cerebral concussion or meningeal hemorrhage. 3. The time of tying the cord, which is believed by some to be a factor. Arguments have been advanced to show that when the cord is tied late the loss of weight is not so great as in those babies in whom the cord is tied early. 4. The greater loss of weight sustained by boys than by girls, because the average birth weight is higher in boys than in girls. 5. Icterus, which becomes a factor when it is persistent and when there is evidence of toxemia. The weight loss is greater in such severely jaundiced infants. 6. The most important factor which Dr. Adair and Dr. Stewart have brought out, that the amount of weight lost is directly proportional to the food supply. In general, it may be said of this that the infant who receives adequate food loses the minimum amount of weight, and babies of multiparous mothers, whose milk secretion is greater than that of primiparous mothers, lose less than first born babies. There can be no doubt that the initial loss of weight is less in babies whose feedings are begun on the first or second day. The food value of colostrum has not received much attention, but it is well recognized that the initial loss of weight is lessened in proportion to the amount received.

Dr. C. A. Stewart, Minneapolis: In the present study we gave lactose solution as an experiment. It is a matter of common experience that, during the hot summer months particularly, many infants lose considerably in weight and frequently have a high fever from the second to the fourth or fifth day. This condition we felt was probably due, partly, to marked loss of body fluids and to a failure on the part of the baby to obtain a sufficient amount of milk from the breast to offset the loss of body fluids. The lactose solution was given during the first five days postpartum, until the supply of mother's milk was well established, in an endeavor to counterbalance the loss of body fluids and in this manner to prevent the development of inanition fever, if possible. We wished also to keep the postpartum weight loss at a minimum. As a result of this study, we are of the opinion that the administration of 10 per cent. lactose solution during the first five days of the life of the infant reduces the frequency of the occurrence of inanition fever and may prevent excessive loss in body weight. We are certain that giving lactose solution to new-born infants is of definite value, and we also are confident that it does not interfere with nursing if the lactose solution is given after nursing.

EFFECT OF TONSILLECTOMY ON GENERAL HEALTH IN FIVE THOUSAND CHILDREN *

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ROCHESTER, N. Y.

Tonsillectomy has become a common operation. Great improvements have been made in this surgical procedure, and much has been written about the various phases of the operation. It is generally conceded that after the removal of tonsils a child should improve. Few reports in the literature deal with end-results except when such definite infections as endocarditis, rheumatism and chorea existed. An attempt has been made in this study to determine what effect the operation has on a group of so-called average cases that present themselves for operation in all communities. An unusual opportunity was offered for this study in a special clinic where approximately 10,000 children were operated on over a period of five months. By cooperation the five hospitals in the city decided to make it possible for any child in need of tonsillectomy to obtain such relief. An organization was established to discover the most urgent cases first. Fifty thousand schoolchildren were given a special examination. Only children who had obviously diseased tonsils and obstructive adenoids were recommended for operation. The selected patients were sent to the hospital, where a complete physical examination was made the day before operation. Particular attention was given to the child's nutrition, presence of glandular enlargement, ear defects and pulmonary defects. Roentgenologic studies of the chest were made in 2,000 cases. A final examination of the oral cavities was made by a laryngologist. When there was any difference of opinion on the part of the examining physicians as to the advisability of operating, the child was dismissed. From the parent was obtained a detailed history of the child, and special efforts were made to elicit the complaints noted by the parent. These were tabulated carefully, for it was felt that the success or failure of the operation would be largely judged by the change or removal of symptoms as would be noted by the parent.

The operations were performed by trained laryngologists, and only skilled anesthetists were employed. The child was safeguarded in every possible way. The operations were performed in the morning, and twenty-four hours later the children were sent home in automobiles with instructions to remain in bed for five days. No immediate follow-up examinations were made except in cases reported not doing well. From ten to twelve months after operation, the same group of children was reexamined to determine their physical status and to record the presence or absence of symptoms.

A preoperative diagnosis was made at the time of the final physical examinations. In order to determine what effect an operation has on an individual, it is essential to ascertain the reasons for operation. An analysis was made of the symptoms leading to this operation in 5,000 children. It was found that there were three groups into which most of the children could be placed.

Children who had definitely hypertrophied tonsils and who also presented clinical evidence of infection comprised the largest group. Seventy-three per cent. of the children could be considered members of this group. Relatively few children, 13.5 per cent., were found who had hypertrophied tonsils and adenoids without clinical evidence of infection. Twenty-two and five-tenths per cent. of the children had normal or only slightly enlarged tonsils but showed definite clinical evidence of infection. A small number, 1 per cent., were operated on who presented neither abnormal tonsils nor evidence of infection. An acceptable preoperative diagnosis was made in 99 per cent. of the 5,000 children.

TABLE 1.—CAUSES FOR OPERATION

Group	Number	Per Cent.
Children who had definitely hypertrophied tonsils with clinical evidence of infection	3,633	73
Children who had definitely hypertrophied tonsils without clinical evidence of infection	175	3.5
Children with tonsils of normal appearance but clinical evidence of infection	1,142	22.5
Children with tonsils of normal appearance and no clinical evidence of infection	50	1

Evidence of the infection was judged either by physical signs or by the symptomatology. Older children were able to describe their complaints, but the parents' or the school nurses' statement was taken for the younger ones. The tabulating of these complaints before and after operation furnished much of the information sought in this study.

TABLE 2.—COMPLAINTS PREVIOUS TO OPERATION

Symptoms	Number	Per Cent.
Mouth breather	3,587	72
Frequent sore throat	2,870	57
Frequent colds	2,309	46
Enlarged cervical glands	2,182	43
Ear trouble	1,131	22
Frequent attacks of fever	428	9
Joint pains or growing pains	200	4

Obstructive breathing was the most common complaint. Seventy-two per cent. of the children were mouth breathers. Fifty-seven per cent. of the 5,000 children gave a history of having frequent attacks of sore throat, while 46 per cent. were subject to frequent colds. Forty-three per cent., or nearly one-half, showed evidence of enlarged cervical glands, or gave a history of having swollen glands. Ear trouble was or had been present in 22 per cent. of the children. Joint pains or growing pains were complained of in only 4 per cent. of the children. No effort has been made in this study to tabulate the defects found in physical examination except those bearing some relation to tonsillar infection.

Postoperative complications did occur, though they were not frequent. Cognizance must be taken of them;

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* Read before the Section on Diseases of Children at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

in the final determination of the effect of the operation on a group of children. There was no immediate operative mortality among the 10,000 children. Postoperative bleeding from raw surfaces was not uncommon but in no instance was there a failure in controlling it. A skilled operator was always in attendance, avoiding any delay in the attempt to check the bleeding. Febrile reactions frequently occurred, sometimes unexplained but usually due to a coincident respiratory infection. As these operations were performed during the winter months, respiratory infections were particularly looked for. Diphtheria developed in seven children after they had returned home. Three of these children died, as the disease was recognized late. Eight children developed pneumonia. One of the children died two weeks after operation. The incidence of diphtheria and pneumonia was high throughout the city during these months. Five children out of the 10,000 operated on developed a lung abscess. Four of these have apparently completely recovered, while one child is still in the hospital. Catarrhal and purulent otitis media was not an uncommon complication. In thirty children a purulent otitis media followed the operation. There was no mastoid involvement. One child developed a purulent meningitis, but fortunately recovered. About 2 per cent. of the children suffered a considerable loss in weight subsequent to the operation, but practically all regained this loss in a few weeks' time.

The reexamination of these children was undertaken about ten months after the operation. The children were directed to report with their parents at a central clinic, and were given an examination similar to the one previous to their operation. The reexamination was done in the winter so that the children might be seen under the same climatic conditions. It is not in the province of this paper to discuss the surgical result except so far as it bears on the child's general condition.

The effect of the operation on the child's symptoms was carefully noted. Tabulation was made of the status of symptoms that existed before operation, and any new ones that had developed since. The child's physical examination was recorded, and all facts pertaining to the child were charted. The surgical result was carefully studied, but the opinion expressed in this study is based on all the factors and not on the surgical end-result.

TABLE 3.—STATUS OF COMPLAINTS BEFORE AND AFTER OPERATION

	Before Operation		One Year After Operation	
Symptoms	Number	Per Cent.	Number	Per Cent.
Mouth breather	3,587	72	463	9
Frequent sore throat	2,870	57	272	5
Frequent colds	2,309	46	400	8
Enlarged cervical glands	2,182	43	2,100	42
Ear trouble	1,131	22	238	4
Frequent attacks of fever	428	8	51	1
Joint pains or growing pains	200	4	37	0.7

The most striking relief came to the so-called mouth breather. Seventy-two per cent. of the 5,000 children gave symptoms of obstructive adenoids and tonsils. At the time of reexamination, only 9 per cent. had such a complaint. An analysis of the 9 per cent. revealed the fact that, in a number, small pieces of tonsillar tissue were left, or there was still evidence of unrelieved nasal obstruction; but in the majority the throat was pronounced clean. The failure to relieve this symptom existed chiefly in children aged 10 years or older. Undoubtedly the prolonged obstruction had accustomed the child to mouth breathing.

Frequent sore throat was a common complaint, being reported in 57 per cent. of the children at the time of operation. The same complaint was recorded in only 5 per cent. of the children a year later. Unquestionably, tonsillectomy affords great relief from this common complaint. However, tonsillectomy does not prevent sore throats, for 100, or 2 per cent., of the children who were free from sore throats before operation have had two or more attacks since their operation.

Frequent colds was given as a subjective complaint in 46 per cent. of the children before operation. This incidence was reduced to 8 per cent. There is, of course, considerable inaccuracy in this symptom, for the number of colds a child might have within a year would vary greatly. It was noted that 3 per cent. of the children who were not subject to frequent colds before the operation have been more susceptible since this procedure.

TABLE 4.—NEW COMPLAINTS SINCE OPERATION

Complaints	Number	Per Cent.
Frequent colds	151	3.00
Frequent sore throat	100	2.00
Enlarged glands of neck	1,123	22.00
Frequent attacks of fever	41	0.90
Ear trouble	133	2.5
Joint pains	32	0.80
Headaches	40	0.90
Nervousness	45	0.95
Nosebleeds	50	1.00
Laryngitis, croup	60	1.10
Bronchitis	60	1.10

Enlargement of the glands of the neck, chiefly the anterior cervical, was present or had existed at some time previous to the operation in 43 per cent. of the children. More than half, 55 per cent., were free from such enlargement one year later. However, 22 per cent. of the children who had been free from this symptom before the operation showed definite glandular enlargement at the time of reexamination. Apparently, infection and absorption take place in the absence of tonsillar tissue. During the first year this complaint has not been successfully eliminated.

Ear trouble, including deafness and discharging ears, occurred in 22 per cent. of the children. The incidence of this complaint was reduced to 4 per cent. Since the operation, 133 children or somewhat more than 1 per cent., have developed ear trouble.

Frequent attacks of fever were noted in 8 per cent. of the children. Since the operation, only 1 per cent. have had such attacks.

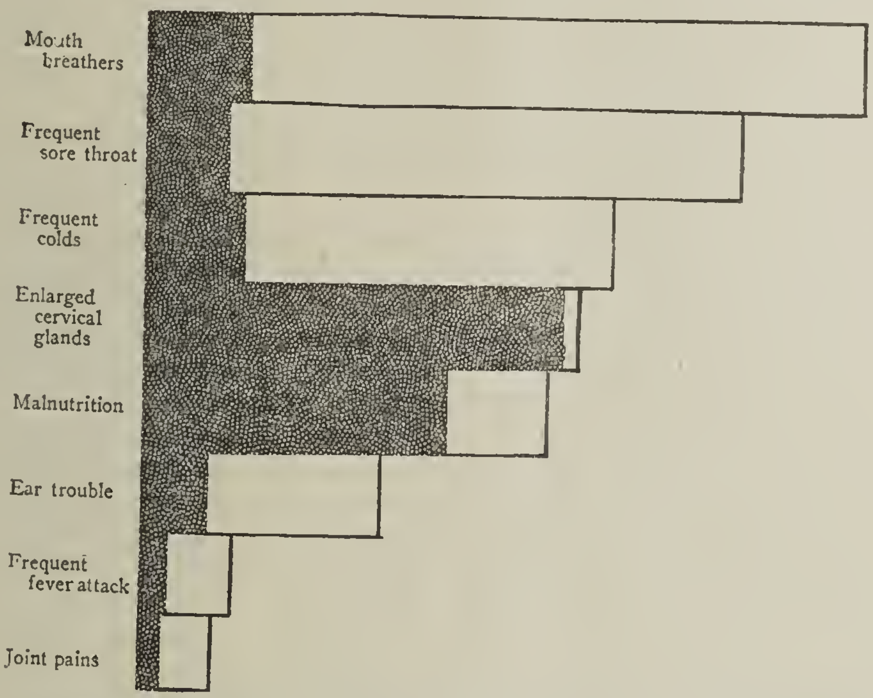
Joint pains or growing pains had existed in 200 children, or 4 per cent. Since operation, such symptoms have occurred in only thirty-seven children.

New complaints that have developed since the operation cannot be overlooked in endeavoring to obtain a fair estimate of the effect on the entire group. Twenty-five children complained of nosebleeds which had never existed before. Laryngitis and bronchitis were not uncommon in children who had not had such a complaint previous to the operation. Acute rheumatic fever developed in two children who had been operated on, and chorea in one child. Little can be said about the incidence of cardiac disease in such a short time after operation. A study of the incidence of cardiac disease, rheumatism and chorea is being made, but several years must elapse before any reliable data can be collected in these 10,000 children who were operated on.

Does tonsillectomy assure any protection against the common infections? Nothing can be concluded in such a short period. It was noted, however, that diphtheria occurred in eighteen of the 5,000 operated cases while the incidence throughout the city during that time was nearly twice as high. Scarlet fever was reported in eleven out of 5,000 children when the incidence in the city was more than twice as great. Measles was reported in relatively few cases, as most of the children had developed this infection earlier. There was a high incidence of mumps, pertussis and chickenpox. It is very doubtful whether tonsillectomy lessens the incidence of the common infectious diseases.

The effect on the child's nutrition offers a good index as to the child's general condition. The estimation of the child's nutrition is based on the height-weight relationship. Weights and measurements were compared with the table of average weight and height measurements published by Dr. Emerson for the nutrition clinics for delicate children. Phenomenal gains after the operation are often mentioned in advocating this operation. Such was the case in this group. Many children gained from 10 to 20 pounds (4.5 to 9 kg.) during this year subsequent to operation; but, taken as a group, less favorable gains were reported.

At the time of operation there was a high percentage of malnutrition. Thirty-nine per cent. were 7 per cent. or more underweight; 61 per cent. were normal or overweight. One year later the number of malnourished children was reduced to 29 per cent., while the normal group reached 71 per cent. This represents a very decided improvement in the nutritional status of the group, but also shows that the unusual gains expected following this operation do not always occur if the big average is sought.



Symptomatic status of children before and after operation: shaded area, complaint one year after operation; white area, complaint before operation.

TABLE 5.—NUTRITIONAL STATUS OF CHILDREN

	At Time of Operation		One Year After Operation	
	Number	Per Cent.	Number	Per Cent.
Ten per cent. or more overweight	704	15	857	18
Normal weight	2,304	46	2,653	53
Seven per cent. or more underweight	1,992	39	1,490	29

A factor which cannot be overlooked is the parents' opinion of the child since the operation. An honest statement was sought from each parent. In their estimation, 4,240 children, 84 per cent., were definitely better, and 15 per cent. showed no change, while 1 per cent. were reported to be worse since the operation.

To determine the effect of the operation on a child, all the factors discussed must be taken into consideration. The relief of one symptom followed by a new symptom makes no real improvement. Failure to be relieved of all symptoms does not mean a failure of the operation.

It is generally conceded that remarkable improvements follow tonsillectomy in some cases. Will such an improvement be uniformly good in a large group of children? The factors which determine a child's improvement are mechanical relief from obstructive symptoms, freedom from subjective symptoms, gain in weight, a lessened incidence of sickness, and mental improvement. It will take several or more years to determine some of these facts; but at the end of one year definite results should be noted. Subsequent examination of these children may alter the results reported now, but a review of the reexaminations shows that mechanical relief from obstructive symptoms was obtained in 95 per cent. of the cases. Subjective symptoms were appreciably lessened except for the high incidence of cervical adenitis. There was a marked improvement in the nutrition of these children. The short period since operation prevents any positive statement concerning the incidence of sickness. According to the parents' statement there has been a lessened morbidity rate.

School records show a decided mental improvement in many of these children. Reports from the dental dispensary demonstrate a lessened incidence of malocclusion of teeth in these children.

CONCLUSIONS

1. Out of 10,000 children on whom tonsillectomy had been performed under uniform conditions, 5,000 have been reexamined one year after operation, and a detailed history of the child's complaints tabulated before and after operation.

2. Analysis of the causes for operation shows that obstructive symptoms or evidences of tonsillar infection existed in 99 per cent. of the cases.

3. In 5,000 children reexamined, the greatest improvement came to the group that showed evidence before operation of obstruction and infection. Obviously, a child suffering from obstructive tonsils and adenoids with symptoms of infection should have the benefit of tonsillectomy.

4. Considerable improvement in the child's general health was noted in the group that presented evidences of infection from the tonsil but in which the tonsil presented no marked hypertrophy. Undoubtedly this group showed benefit from this operation.

5. No marked change was found in the child's general condition in the group operated on for hypertrophy only. There was less malnutrition in this group. One year is too short a period to determine the benefits of the operation to this group.

6. Taken as a group, there was a very decided improvement in the general condition of the children operated on. The nutritional status was improved in many instances. The high percentage of undernour-

ished children one year after operation, 29 per cent., suggests that diseased tonsils are only a small factor in the production of malnutrition.

7. The operative risk is not great, for 10,000 children were operated on without a surgical fatality, and postoperative complications occurred in only a small percentage of the children, assuring reasonable safety if proper care is taken.

8. The ultimate effect of the operation on a child cannot be determined at the end of a year; but at that time 84 per cent. of the children were considered in better general health, as indicated by their physical examination and analysis of their complaints.

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ABSTRACT OF DISCUSSION

Dr. Julius H. Hess, Chicago: Dr. Kaiser is to be congratulated on the excellent report of the results in his large series of cases, probably the largest series of cases that has been carefully studied. In the average run of cases that do not have the preceding careful physical examination, the expert anesthesia and the five days' rest in bed, the mortality must be much greater. We have reached the stage at which many men feel that it is almost the birthright of a child to have his tonsils removed. We have in our city a clinic much like the clinic in Rochester, N. Y. One of the men who has supported this clinic financially has felt that the poor children should have all the opportunities that his own children have had, and all of these children, except those under 2 years of age, have had their tonsils removed. The main thing is that these children should be properly protected. In most instances we see good results in cases of malnutrition and in cases of secondary anemia, but I think that in the cases of rheumatism and allied troubles, such as myositis and mild degrees of arthritis, and in endocarditis, chorea and nephritis, the results have not been so good. In fact, the group of cases which have given us the poorest results are the choreas. I think that in 50 cent. of the chorea cases, the children recover from that attack, but they have recurrent attacks six months or so later. In the endocarditis cases—and we are operating earlier in those cases—we are undoubtedly seeing considerable improvement; but no one should tell the parents that this is a panacea or even a cure for the attack when the valves are damaged. I want to make a plea along the lines of abscessed teeth, alveolar abscesses, sinusitis, pyelitis and possibly other infections, those of the intestinal tract as well, before deciding that the tonsils must come out.

Dr. William R. P. Emerson, Boston: In Rochester, N. Y., there are forty nutrition classes. On this account I am especially interested in this tremendous undertaking of clearing up cases of diseased adenoids and tonsils. We found it of great help in our nutritional work because obstruction in the nasopharynx is one of the chief causes of malnutrition, occurring in about 60 per cent. of all cases. I want to call attention to the value of having the operation performed by experts, because many of our undernourished children have had incomplete operations, and focal infections have continued. Rest in bed for five days after the operation prevents the loss of weight. This should be the minimal time for recovery. It is important to remember that removing diseased tonsils does not always remove associated inflammation, and we are finding more and more sinus infection. A recent report shows that in a group of children under 10, eighteen out of thirty who had otitis media had antrum infection on the same side. These toxemias are one of the chief causes of the "no-appetite" cases. We must get rid of toxemia so that the child can absorb and gain.

Dr. Harry Lowenburg, Philadelphia: Dr. Hess mentioned an extremely important point—the lack of the study of the condition of the teeth and accessory sinuses. Dr. Kaiser emphasized that glandular adenitis was more common after operation than before, and I wondered whether he took into consideration the possibility of extratonsillar infections as a cause for this. I believe there is need of propaganda to educate the dental profession, and the medical profession, to the necessity of serious attention to the dental organs. It is foolhardy to think that a child should not suffer from secondary infection simply because he has had his tonsils removed when the rest of his oral cavity is practically a sewer. We meet many of these cases in which it seems impossible to get the cooperation of the dental profession. When I have a tonsil case, I have a dentist present at the operation to remove deciduous teeth and others which may be involved. One other point brought out by Dr. Kaiser is of value, and that is the early and continuous study of these children before they are brought to operation. I had recently brought to my notice a child who was one of a group of seven or eight from a crippled children's home. These children were operated on by a very able man. This particular child was studied carefully. At 10 o'clock the morning after operation he was asked whether he wanted his breakfast, and he replied with much bravado "You bet I do," and at 11:30 he was in coma from acidosis. I do not believe that this child was studied from this standpoint.

Dr. John Zahorsky, St. Louis: I want to call attention to one or two points in which such studies may fall into error. First is the age of the child. The exact age at which these benefits occurred was not stated. There is quite a difference in the improvement following removal of tonsils in the young child and in an older child. The young child has not established an immunity to respiratory infections, and the older child has. It is magnificent to get a gain in weight in a child of 8 who has been suffering from infection of the tonsils. This gain is permanent; but in the young child the gain in weight frequently is not permanent. The other error is that when we examine the children we do not always state what time of the year it was. It is a common clinical finding that when we pass an influenzal infection we find many children infected and many with large tonsils and adenoids. Many of these conditions disappear when the summer approaches; so that in speaking of the relatively obstructed noses and the relative amount of obstructed sinuses, we must know whether this examination was conducted in the winter or summer, and whether it was conducted after an acute respiratory epidemic, as this evidently was in fact, but these operations should not be done during an epidemic of respiratory infections.

Dr. Albert D. Kaiser, Rochester, N. Y.: I would like to emphasize again that I am talking about the average case of tonsillectomy and of a group rather than of the individual. I think that when we talk of the results of tonsillectomy the physician usually talks about the cases he sees in his own experience, particularly the child that has made a phenomenal gain or has not done well. I have tried to give a fair estimate of 5,000 children operated on under uniform conditions. I think it represents the type of children operated on in our private work. It was the type of case in which no laryngologist would question the wisdom of operation. If we do these operations in private cases, why should we criticize doing them on poor people? In reply to Dr. Zahorsky, we felt that the incidence of respiratory diseases was an important factor, and we considered whether we should operate during summer or winter. For organization purposes it was deemed best to do all operations in the winter, but the reexamination was done in the same period of the year so as to have a fair comparison of the incidence of respiratory diseases at the time of operation and one year later. The high incidence of enlarged glands one year after operation was more or less of a surprise to us. Some of these children did show evidence of dental infection and antrum involvement; but since we have a large dental dispensary, nearly all of these children had to pass through the dental dispensary before operation, so that the dental defects were not a big factor in the causation of enlarged cervical glands. A study of the children with enlarged glands is being made, but I did not want to bring that into this paper. The preliminary examination of the child is very important. We feel that fewer postoperative complications developed because of the care taken in eliminating the bad surgical risk. During the period that 10,000 children were operated on in the clinic without an operative death, two children operated on in private homes died. Investigation revealed that these children were not given preliminary study. I think that the preliminary study is most important to safeguard our children. Particularly do I want to emphasize that this study represents the results obtained from a group of average cases.

A FEW OBSERVATIONS ON MALARIA IN INFANCY *

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Acute malaria presents a different clinical picture in infancy, and up to 3 years of age, from that seen in adult life. The younger the patient, the greater the difference. The variation in clinical manifestations is even more decided and misleading than the difference existing between rheumatism in the child and in the adult. If these variations are not recognized, these little patients frequently drift into malnutrition and marasmus, and occasionally death ensues.

DIFFERENCES BETWEEN MALARIA IN INFANTS AND THE DISEASE IN ADULTS

Our observations are based on three or four hundred private cases, and on fifty carefully studied cases in infants and children. They will be duly reported when larger numbers have been properly collected and studied. From present observations, we are led to believe that the following differences exist between malaria in infants and in adults:

Afebrile Malaria.—With a history of no preceding febrile onset, a fair number of babies, breast-fed, receiving plenty of breast milk, and with the blood showing malaria parasites, will show no fever, grow indifferent to nursing, stop gaining in weight, or lose slightly, and grow decidedly anemic. This condition may have existed for three or four weeks before medical advice is sought and the blood examined. Physical examination will result in absolutely negative findings in fully 30 per cent. of cases, with no enlargement of the spleen and nothing to guide one to diagnosis from the clinical picture except the marked anemia. These cases are often improperly diagnosed. Mothers attribute the condition to "teething." Physicians only too frequently think the breast milk is at fault, and change from breast milk to artificial feeding, with dire results. It is surprising how brilliant are the results when the proper dosage of quinin is given.

Periodicity and Fever.—The medical mind rightly believes periodicity in clinical manifestations to be the most characteristic feature in malaria. This is true of malaria in the adult, and in children after three years of age. In Georgia—and we believe the same applies to the South in general—periodicity in subjective and objective symptoms of malaria in infancy is oftener absent than present. The younger the patient, the less frequently is periodicity found.

Fever is remittent, irregularly intermittent or absent more frequently than regularly intermittent. This is not due to a preponderance of estivo-autumnal infection, but is seen in tertian infection. In and around Augusta, Ga., where our observations have been made, tertian infection predominates over estivo-autumnal in the ratio of about three to one.

Probably the explanation for absence of characteristic fever in infancy may be found in the blood picture of tertian infection in the infant. Here all stages of development in the tertian infection are seen, more often than in the adult. The forty-eight hour cycle of maturity of plasmodia in the infant's blood is probably not completed with the same regularity, or periodicity, as occurs in the adult. The host may account for the difference in cyclic development. Clinically, we know babies react differently from adults to infections of rheumatism, typhoid and pneumonia.

With the cycle of maturity more continuous or more irregular than periodic, remittent and irregularly intermittent rather than regularly intermittent, fever would be expected. The same frequent absence of chills, or its equivalent in babies (cold hands and feet, blue lips and nails, slight cyanosis or pallor, drowsiness or prostration) would somewhat substantiate this assumption.

Digestive Symptoms.—In infancy, gastric and intestinal disturbances are not uncommon symptoms in the early stages of malaria; vomiting in about 75 per cent., and mild diarrhea (sometimes ileocolitis) in 25 per cent. would be, we believe, a fair estimate. In general, it might be said that malaria is a great disturber of the normal functioning of the body of the infant and the very young child. If the child possesses latent tetany or a tendency to asthma or bronchitis, malaria will frequently excite these conditions to activity, and give a varied clinical picture.

Enlargement of Spleen.—In adults, a palpable spleen, under careful examination, is, in the early days of malaria, a rather constant finding. In infancy and up to 3 years of age, a palpable spleen is absent in fully 30 per cent. of cases in the first week of illness. In a goodly number, the spleen is not palpable throughout the entire malarial attack.

STANDARD TREATMENT OF MALARIA

The National Malaria Committee, with the Surgeon General of the U. S. Health Service as chairman, and Dr. H. W. Carter of the Public Health Service as secretary, adopted a standard treatment of malaria in 1919:

> For the acute attack, 10 grains of quinin sulphate by mouth, three times a day for a period of at least three or four days, to be followed by 10 grains every night before retiring, for a period of eight weeks. For infected persons, not having acute symptoms at the time, only eight weeks' treatment is required.
>
> The proportionate doses for children are: under 1 year, ½ grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains.

The standard treatment is recommended for the average case of malaria. It is not claimed that it is a perfect treatment, and applicable to all cases. The report of the committee on this point reads:

> It is not claimed that this is a perfect, or even the best, treatment in all cases, but it is our belief that it is a good and satisfactory method for practical use to prevent relapses and transmission to other people.

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* Read before the Section on Diseases of Children at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

The standard treatment has two objects: 1. To stop the acute clinical manifestation of malaria by giving the prescribed standard dose three times daily for three or four days. 2. To eradicate malaria from the patient's system, by killing all the malaria parasites in the tissues and blood, thereby preventing relapses and transmission of malaria to other people, through the bite of mosquitoes. This is called sterilization treatment.

To Bass belongs the credit of conceiving, initiating and strongly advocating the general adoption, by the medical profession, of the standard treatment. His commendable and extensive study on sterilization with quinin, in more than 25,000 malaria-infected persons in Bolivar and Sunflower counties, in the Mississippi Delta, in 1916, 1917 and 1918, was a valuable contribution to medicine.

We heartily approve and commend the principle of curing the patient of malaria. Sterilization treatment not only prevents relapses in a goodly number of cases, but also prevents the malaria patient from infecting mosquitoes. It is both a logical and a sensible line of treatment, and also an important factor in helping to control successfully the spread of malaria.

We do not, however, concur with Bass' claim of successful sterilization with standard treatment in more than 90 per cent. of cases. We question this high percentage of cures for the following reasons:

1. Our observations (as yet comparatively limited) made on infants and children, in a malarial district, lead us to think that 75 per cent. of apparent sterilization on standard treatment is a very generous estimate. In practically all of our cases we gave larger doses than standard treatment requires. In three of our fifty closely studied cases, we had instances of relapse during standard treatment. In three others, relapse occurred after standard treatment had been given twice, with an interval of two or three weeks between treatments. In one other, relapse occurred after standard treatment had been given three times. The question of reinfection, in these cases, we believe could be excluded, for treatment was begun in October, and ended when no mosquitoes were around.

2. It is generally conceded that we have no positive way of telling when a patient has been disinfected. The term "apparent disinfection" may not be an incorrect one to use, in view of our present limited scientific and clinical knowledge of malaria. Absence of clinical symptoms and failure to find malaria parasites in the blood do not prove that the patient is free from infection. Bass proved this in his experiments in Bolivar County. The total number of cases under study was 31,459. Of this number, 40.3 per cent. (13,524) gave positive histories of one or more malarial attacks during the preceding twelve months. One blood examination made by thick film method on all these patients, showed only 28.96 per cent. of them to have parasites in the blood: a little better than one positive blood examination in every four clinically positive malaria cases. Blood examination (presumably one) on the remaining population, 17,932, with negative histories of clinical malaria, showed that 15.93 per cent. (2,856) had malaria parasites in the blood.

3. It is well known that malaria parasites may be harbored in the tissues of the body for months or for years, without any positive visible signs or symptoms. When in the tissues, they cannot be killed by ingesting any practical amount of quinin, either during acute attack or subsequently. Quinin kills them only when they get out of the tissues into the free circulating blood. Therefore, it does seem logical to question whether standard treatment, extending over eight weeks and four days, will kill all parasites in tissues in more than 90 per cent. of cases.

4. Bass' 90 to 95 per cent. cures were based on a resurvey of patients one year after treatemnt. This check was not free from possible error. As previously stated, malaria parasites can lie dormant in tissues without clinical manifestation, and with negative blood, for more than a year. Again, Bass' figures as to the number of his malaria cases, in experiment, may have been too high. If so, it would necessarily influence his percentage of cures. Three factors contributed to the diagnosis of malaria in his case: (1) the general practitioners; (2) the laymen, and (3) the microscope.

The general practitioners made the diagnoses in one fourth of the cases. We all know general practitioners in rural districts are rushed for time, and oftentimes call many diseases malaria which are not. Also the laymen's statement of previous malaria attacks were accepted as diagnostic of malaria. Again, it is fair to assume that in such an extensive survey, there might have been many who honestly imagined they had previously had malaria, when as a matter of fact they had not. We need only refer to the financial success of the chiropractors, and the other exponents of various cults, to substantiate this point.

ULTRASCIENTIFIC TREATMENT

By ultrascientific treatment of malaria, we mean "no malaria parasites found in blood, no quinin to be given." The strict application of this so-called scientific treatment is unquestionably wrong in principle. It is more the duty of the medical profession to alleviate suffering and cure diseases than to sacrifice patients' physical welfare on the altar of science. When we know that only 28.96 per cent. of malaria-infected patients will present a positive blood finding on one examination; and when we know that the average physician usually excludes malaria in his differential diagnosis on one negative finding in the blood, it is quite clear that ultrascientific treatment in malaria is unjustifiable.

Again, we all know there are cases of malaria in which an absolute diagnosis cannot be made, in spite of all of our scientific facilities and diagnostic acumen. In such cases, after scientific measures have failed to give us the diagnosis, the therapeutic test of proper doses of quinin is not only permissible but mandatory.

Briefly expressed, we believe that "scientific treatment plus brains" is the best up-to-date treatment of malaria.

SUMMARY

1. Malaria presents a different clinical picture in infancy and up to 3 years of age from that seen in adult. The younger the patient, the more decided is the difference.

2. Periodicity in subjective and objective symptoms is more frequently absent than present. Fever is oftener remittent, irregularly intermittent or absent, than regularly intermittent.

3. Enlargement of the spleen is absent in fully 30 per cent. of cases of malaria in infancy.

4. Sterilization with standard treatment of more than 90 per cent. of malaria cases, we believe to be questionable

5. Ultrascientific treatment of malaria, "no malaria parasites found in the blood, no quinin to be given," is wrong in principle and in practice.

ABSTRACT OF DISCUSSION

Dr. William Weston, Columbia, S. C.: In very young children, malaria does not run true to our accepted ideas of the disease at all. I have seen malaria in an infant 5 days old. Dr. Mulherin is right in saying that in only 25 per cent. of the cases will one find the organism after diligent search. One sign that should always be looked for is a low leukocytosis. In the case of the 5 days old baby the leukocytes which should have numbered ten or twelve thousand, numbered only 4,500, and we could not find the malaria parasite. In many instances no periodicity is manifested. The child will become strikingly anemic with no enlargement of the spleen. That is absolutely unlike the type of malaria in adults. Another point: How are we going to tell when we have the infant cinchonized? A leukocyte count should be made every other day, and when the count reaches 7,000, one should slow down on the quinin. Many infants do not take quinin well at all. In some of my cases the desquamation was much more severe than in scarlet fever. Therefore, it is of the utmost importance to keep track of the leukocyte count.

Dr. James D. Love, Jacksonville, Fla.: I must confess to a certain degree of skepticism concerning the condition known as afebrile malaria. While I admit that such a condition does exist, at the same time I am thoroughly convinced that most diagnoses of afebrile malaria rest on an error of udgment. Dr. Mulherin called attention to the fact that malaria in infants is remittent rather than intermittent. That circumstance is due to the fact that there is an asynchronous sporulation of the malaria parasite. Instead of the sporulaion occurring only once in twenty-four hours, it occurs probably several times, and the products are set free in the blood several times during the twenty-four hours. This accounts for the absence of chills, and at the same time it calls for the more frequent administration of quinin than if we were treating an adult. Quinin should be administered o the infant more than three times a day in order to meet his peculiar condition. The standard treatment which Dr. Mulherin refers to calls for the administration of 1 grain of quinin, three times a day, to an infant 1 year old, and hereafter 1 grain, once daily, for a period of from six to ight weeks. Infants require relatively larger doses of uinin than adults, and I am convinced that the doses recommended are too small. For some unknown reason, the verage child suffering from malaria has a greater gastric nd intestinal tolerance for quinin, and when I administer uinin in a suspected case of malaria, if the quinin is promptly ejected, if there is marked intolerance, gastric and otherwise, for the quinin, I question the correctness of my iagnosis.

Dr. John Zahorsky, St. Louis: We have to use our linical sense and brains in addition to the laboratory test. A case in point is that of a boy, aged 13, who had a temperature of 106 F. recurring for a week, with sweats, connuing for a week or ten days. It was suggested that it might be malaria; but we all failed to find the parasite in the lood. There was no leukocytosis and no enlarged spleen. However, clinically, the case seemed to be one of malaria. We tried the therapeutic test and gave 20 grains of quinin. The boy had no more chills. Did he have malaria? I do not know. Babies stand 4 or 5 grains of quinin very well, and if the stomach does not tolerate it, we sometimes give it intrauscularly or intravenously. One large dose, 5 grains, tramuscularly, will prove effective.

Dr. Franklin P. Gengenbach, Denver: Last fall I saw child of parents who had been living in Colorado for ven years. The child was breast fed but was not doing ell. It developed a fever, and we suspected pyelitis. Several examinations of the urine obtained at home were negave. We found a low leukocytosis. On closer questioning, e learned that the child did not have fever every day, but ery few days. Then the child developed an enlargement of the spleen, and we found the malaria parasite in the baby's blood and in the mother's blood. We were quite puzzled how to explain the origin of the disease. The anopheles mosquito is unknown in Denver, and we wondered how the baby could have contracted malaria because it was born in Denver. Cases of malaria occurring immediately after birth are reported in the literature, but usually the mother is having active symptoms at the time. We were in doubt whether my case was one of congenital malaria or not, but my impression is that it was. As to the dosage, we gave this baby 2 grains of quinin every four hours until the paroxysms were controlled.

Dr. Arthur G. Jacobs, Memphis, Tenn.: One grain of quinin, three times a day, to an infant 1 year old, is practically useless. We have been giving to a child of that age 2 grains, every three hours. In Arkansas malaria is very prevalent. It is a by-word with us that if a baby comes from Arkansas we should give quinin hypodermically, 3 or even 5 grains, and possibly we have to repeat that dose in three days. In some resistant cases we administered quinin once or twice intravenously. There were two unfortunate results from the intravenous use of quinin, and in a pathologic conference held over these cases it was decided that the deaths which occurred after the intravenous use of quinin were due to shock. It is difficult to understand how the intravenous injection of a comparatively small amount of quinin can produce death in a child who could take 2 or 3 grains of quinin a day for a week, but yet 2 or 3 grains intravenously did produce death, so that we do not use quinin intravenously any more. We have found that a case which will not yield to quinin by mouth will yield to quinin given subcutaneously.

Dr. Robert A. Strong, Pass Christian, Miss.: It is extremely difficult to find the organism in a child 2 weeks old. Heredity no doubt plays an important part. Usually the mother is actively infected at the time. There are two or three reasons why we do not find the organism more often. Frequently a patient will come in after having been given quinin, and it is almost impossible to find the organism for three or four days afterward. I want to direct attention to one important point, and that is to look out for carriers in the household in which the patient lives. On the other hand, the organism may be locked up in the spleen and not be in the circulation. So far as the standard treatment of malaria goes, it is by no means the best, but at the same time I do not think one will go far wrong if one follows the instructions of the National Commission. There are two ways to eliminate malaria: one is to eliminate the mosquito. It is less expensive to sterilize the patient.

Dr. William A. Mulherin, Augusta, Ga.: Dr. Weston has followed up the very valuable point that the low leukocyte count is a very important sign. If that is present in a malaria district, then a therapeutic dose of quinin should be given. Regarding the afebrile type of malaria: it does exist, and you can explain it on the same ground that different infections act differently in different hosts. About the dosage: Bass is correct when he advocates giving quinin by mouth. It is a slow absorption; the only organisms that are going to be killed are those in the blood. Bass' idea of giving quinin by mouth is best. I have no confidence in giving it by the hypodermic or intravenous method. With regard to following up the standard treatment, that has two purposes: first, to stop the acute manifestation, and then to get the malaria out of the patient because the mosquito gets the parasite and transmits it to the next person. That is one of the ways of getting rid of malaria.

Average Sickness Loss in Industry.—Statistics compiled by the U. S. Public Health Service through a large western corporation show that for the year ending Jan. 31, 1921, the annual loss among 1,282 office employees from sickness was 8.15 days per person. An accurate record was kept of the hours of work missed by each person due to sickness or illness, the sickness being diagnosed by the medical department or by the family physician. The majority of the 1,282 office employees were women, whose sickness rate has been found to be higher than that of men.

NOCTURNAL (PAROXYSMAL) DYSPNEA

ITS TREATMENT WITH THYROID GLAND *

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Dyspnea is an important symptom in a variety of pathologic conditions. The majority of cases, however, are contributed by disturbances of the heart, lung and kidney. Often two or three of these organs are so extensively involved that immediate responsibility for dyspnea can be fixed only with the greatest difficulty, if at all. Recognizing the rôle played by disease of the lung and kidney in the production of dyspnea to be an important one, the present discussion is confined to those cases in which the cardiovascular system predominates the picture.

In heart disease, air hunger may present itself in three ways: It may be persistent even under conditions of prolonged rest. It may be incidental to moderate exertion. It may occur only in paroxysms. In the first instance it is associated with broken compensation. In the second, it expresses a limited cardiac reserve. In the third group, however, the every-day laws of compensation and reserve apparently are not operative. Paroxysms are especially prone to occur during rest, not infrequently in the early morning at a time when demands on the heart have, for some hours, been reduced to a minimum.

Paroxysmal manifestations are a common occurrence in severely decompensated cases. The term, as used here, does not refer to patients with evident, continued dyspnea of the Cheyne-Stokes variety, or to exertion dyspnea of the paroxysmal type. It is confined to individuals capable of exertion without respiratory distress, with no gross secondary manifestation of heart disease, and possessed of a vital capacity within normal limits.

The difference between the first and second groups of patients with dyspnea is of degree rather than kind. The tendency is for the second, sooner or later, to merge into the first. The observations of Peabody and his co-workers [1] on vital capacity and minute volume have placed in our hands a means of estimating the reserve strength of the heart in these two groups, comparable to the measurement of thyroid activity through basal metabolism readings. Whether or not venous engorgement of the pulmonary vessels and consequent stiffening or loss of elasticity of lung tissue is a satisfactory explanation for the mechanics of cardiac dyspnea may be questioned. The value and utility of vital capacity and minute volume, however, are definitely established. Unfortunately, vital capacity records are of little value in pure paroxysmal dyspnea, for the reason that lung volume and elasticity are but slightly impaired.

That the paroxysms of nocturnal dyspnea are cardiovascular in origin is evidenced by: (1) the absence of lesions of the kidney and other organs; (2) physical signs of organic damage to the heart; (3) the supervention of broken compensation, and (4) postmortem findings.

I have had fifteen patients under observation for at least one year. Classified clinically, four had myocarditis, six aortic disease, and five arteriosclerosis. The majority of all cases of nocturnal dyspnea are associated with these three diseases. In this series, all patients had nocturnal dyspnea. Paroxysms during the day were very exceptional. None had kidney disease of any consequence, as shown by urinalysis and the phenolphthalein test. All patients were ambulatory, and none had given up or changed his previous occupation.

The history of Case 6 is typical, in the essentials:

> A man, aged 43, a letter carrier, whose family history was unimportant, had syphilis at 22, for which he received treatment for two years. He married at 28, and was the father of three children, all healthy. The wife had no miscarriages or premature labors. For about six months prior to examination, July 5, 1916, he had been disturbed by attacks of shortness of breath on falling asleep. On the preceding night he had suffered eleven attacks before finally obtaining any rest. The day preceding the attacks had been routine. Nocturnal disturbances had been experienced at irregular intervals, and sometimes followed days or weeks of complete freedom.
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> The arteries were not palpably thickened. The pulse was regular, synchronous in the radials, and of the water-hammer type. There was no visible capillary pulse. The apex beat of the heart was in the nipple line under the sixth rib. There was no thrill, and no dulness in the second interspace. A soft diastolic murmur was audible on immediate auscultation at the aortic area, and also from this point downward and toward the left. The systolic pressure was 135, the diastolic 50. Otherwise the examination was negative.
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> The important clinical features were: first, history of syphilis; second, physical signs of aortic disease, and third, distressing nocturnal dyspnea, which constituted the only symptom of ill health.

Careful questioning in the fifteen cases, and personal observation in some, revealed the sequence of events recorded in this case to be the typical picture. During a period of apnea or immediately preceding one, the patient would fall asleep. The apneic period terminated in hyperpnea of the Cheyne-Stokes type. During the latter, consciousness returned with a most unpleasant and often alarming sense of air hunger. Examination during an attack gave no evidence of cardiac dilatation, and little change in rate. If the threshold of sleep was successfully passed, three or four hours of unbroken rest almost always ensued.

Reference, at this point, to the intensity of the slumber curve supplies an interesting suggestion. Howell,[2] Michelson and others have shown that the greatest intensity of slumber, as measured by the intensity of auditory stimulus necessary to arouse consciousness, is reached about an hour after the beginning. From this point there is a rapid fall in the curve, and from the third hour on slumber is very light. As Howell expresses it, "The activities of the brain lie just below the threshold of consciousness."

The paroxysm occurs before deep slumber has been attained or after light sleep has supervened, and only occasionally in deep slumber.

If we knew something of the physiology of sleep, a rational explanation might be offered. Unfortunately, we do not. In a review of the information and theories on the subject by Haberman,[3] the conclusion drawn is that:

> From the evidence so far accrued, we may at least assume one can sleep whether "product fatigued" or not and whether

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* Read before the American Climatological and Clinical Association, Washington, D. C., May 2, 1922.

[1] McClure, C. W., and Peabody, F. W.: Relation of the Vital Capacity of the Lungs to the Clinical Condition of Patients with Cardiac and Renal Disease, J. A. M. A. **69**: 1954 (Dec. 8) 1917. Peabody, F. W.: Cardiac Dyspnea, in Nelson's Living Medicine **4**: 301.

[2] Howell: J. Exper. Med. **2**: 313, 1897.

[3] Haberman, J. V.: Sleep (Normal and Abnormal), M. Rec. **101**: 265, 1922.

there be anemia or plethora in the brain and whether the plethora be arterial or venous. One may sleep with lowered or heightened intracranial pressure, though the latter is (pathologically) especially sleep tending. Sleep does not depend upon hypo- or hypermetabolism, though the former (in the sense of lessened energy denotation) no doubt more often obtains; and however endocrine dysfunction might induce or hinder sleep, regular sleep is nevertheless present in all types of endocrinopathy.

There is no sleep center, nor is sleep occasioned through subcortical block.

Unfortunately, Haberman proceeds to offer a theory of his own, in many respects quite as unsatisfying as those he refutes.

Whatever the mechanism, it is apparent that the respiratory center is relatively unstable in "threshold slumber." This is shown by the great frequency of Cheyne-Stokes breathing during light sleep of normal individuals and by the tendency of paroxysmal dyspnea to manifest itself at this time. It is as though during threshold slumber a conscious and a sleep control of respiration were tossing responsibility from one to the other.

The pathology of nocturnal dyspnea is the pathology of myocarditis, of aortic disease, of arteriosclerosis and, less frequently, of other forms of heart disorder. Recently, Leo Hess has reported necropsies in cases of cardiac dyspnea. I quote from an abstract of his article:

> Three cases with the usual picture of continuous respiratory distress had in common a high grade of damage to the whole heart muscle, while on the coronary vessels no gross changes were demonstrable. In contrast were the anatomic findings in six patients with paroxysmal attacks of dyspnea. In all there were infarcts in the musculature of the left ventricle, chiefly at the apex, corresponding to the end branches of the coronary arteries, while the nonproximal portions of the muscle were completely free.
>
> Hess discusses the possibility of connecting the anatomic findings with the clinical picture of shortness of breath. The dyspnea attacks he believes to be due to spasms of the pulmonary vessels, since in similar clinical pictures he often found an irregular distribution of blood in the various parts of the lungs, postmortem. This view in regard to the participation of the pulmonary vessels in paroxysmal dyspnea would have the advantage that it could explain the frequently concomitant pulmonary edema in cardiac asthma, for which the diminution of the power of the left ventricle cannot alone be made responsible.

Not questioning the observations of Hess, it is evident that his postmortem reports are of end-results and are not necessarily applicable to the relatively benign manifestation of disease here considered.

In following the subsequent history of cases under observation for several years, I have become impressed by the frequent development of cerebral arteriosclerosis. The types of cardiopathies exhibiting this symptom lend further evidence to this view. The conclusion that nocturnal dyspnea is an early manifestation of cerebral arterial disturbance in the bulbar region and incidentally in the respiratory center seems reasonable.

In the treatment of nocturnal dyspnea dependent on a diseased cardiovascular system, general management of the patient and intelligent care directed toward the specific cause are as important as in the usual cardiopathies. However, we are interested here in the relief of a symptom, precocious in its appearance and exhibiting peculiarities of its own. Therapeutic measures commonly employed are of two kinds. Curiously, these agents are physiologically antagonistic. One group is a cerebral depressant, the other an excitant. Peabody gets best results from morphin, Hoover,[4] from caffein citrate. In my experience, cerebral depressants aggravate the condition, unless pushed to such a degree that the patient is narcotized to his distress, while cerebral excitants, in the form of caffein, often prevent the paroxysm by keeping the patient awake.

In the present heyday of hormone therapy and endocrine romance, one hesitates to add a single indictment to this already crowded docket. In extenuation of the present offense the following may be offered: First, the administration of thyroid gland to patients with nocturnal dyspnea has afforded relief after other measures have failed. Second, the physiologic action of thyroid on the general metabolism, on the excitability of the respiratory center and on arterial vasomotor tone is such as to indicate the rationale of its application to this condition. Third, the ultimate relief of symptoms following the administration of the iodids may be due to stimulation of the thyroid through their iodin content. Finally, nocturnal dyspnea is most frequently encountered in patients at an age with which diminished thyroid secretion is concomitant.

The average age of the fifteen patients was 52. The youngest was 42, the oldest, 64. All patients were given dried thyroid gland. The average dose was about 1½ grains (0.1 gm.) three times a day. This dose was usually administered for from two to three weeks, followed by an intermission of from one to two weeks. Twelve of the patients were distinctly relieved of dyspnea and showed no bad effects of the medication. Two were unaffected by treatment. One was unfavorably affected. He had increased dyspnea and rapid heart action, and became nervous. The three patients who did not show improvement were of the myocardial group. The pulse rate of each was above 80 before institution of treatment.

It has been my experience that patients presenting paroxysmal dyspnea dependent on myocarditis and having a material increase in pulse rate react badly to thyroid gland. Administration of physiologic doses to patients with marked cardiac damage is a hazardous procedure. Under any circumstances, patients receiving thyroid gland for the relief of nocturnal dyspnea should be under careful observation.

204 Stoneleigh Court.

THE ATONIC ABDOMINAL WALL

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If I were discussing a new condition, I might be permitted to add a new name to our overburdened nomenclature by calling the atonic abdominal wall "atonia abdominalis"; but the object of this paper is to emphasize rather than to unfold.

The need of dignifying this condition with a name was suggested to me by the large number of strong, healthy coal miners who come to me complaining of all the ills in the dictionary, and having in common the one physical attribute which is the title of this paper.

Especially noticeable is the fact that coal miners who have had chronic appendicitis or chronic cholecystitis do not appear to obtain the fullest benefits from surgery that other classes realize. Also, it has been noticed in Fairmont Hospital No. 3, which is a hospital catering especially to injured working men, most of whom are miners in this region, that apparently slight fractures of the lower anterior ribs are subject to periods of disability of from two to four months; and those so injured subsequently complain of abdominal pain for many more months. Almost invariably, these patients present the picture of a flabby abdominal musculature, although they have enormous biceps, vast corded serrati, and strongly muscled backs and thighs.

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[4] Hoover, C. F.: Respiration Symptomatology, in Nelson's Living Medicine, p. 400.

The symptoms, as a rule, are general abdominal discomfort, headache, discomfort after meals, constipation, and abdominal pain after lying down, relieved toward morning. There is absence of anorexia, abdominal tenderness on palpation, leukocytosis, fever, anemia and impotence. The diagnoses brought in from the attendant mine physician are, in order of frequency, malingering, hysteria, neurasthenia, chronic constipation—probably paradoxical—appendicitis, gallstones, intestinal adhesions and gastric ulcer; and the treatment had run through the pharmacopeia. It was noticed that physical examination constantly revealed good general nutrition, extreme bulging of the lower half of the abdomen, and remarkably poor tone to the rectus muscles of the abdomen. This was made especially noticeable in men who were muscled like Hercules, men engaged in the most arduous toil, whose deltoids were huge blocky masses, and whose backs and thighs were hard and corded.

The question arose as to why this group of abdominal muscles should be so attenuated. There is but one answer to group attenuation in muscles, and that is nerve function to that group. Our effort then lay in discovering the reason for disturbed function, and this consisted in eliminating, from the three, nerve injury, nerve paralysis from toxemia, and nerve inhibition from central cause, all of which would cause the same condition, namely, lack of use, and therefore lack of tone to the muscle.

Of course, in a parous woman, a rachitic child or an old person other causes might be considered; but we are considering the basis of this condition found in otherwise healthy men, doing arduous labor and eating the best of food.

The most reasonable working hypothesis appeared to be that there was a voluntary inhibition of the abdominal musculature on account of the pain of their pull on a broken rib to which they were attached, or during the period of acute abdominal pain when their relaxation gave relief to the patient. As long as the local condition causing the relaxation existed naturally, the inhibition to the nerves controlling these muscles would continue; but after the removal of the primary cause, the inhibition habit remains.

One of the marvels of anatomy to the thinking anatomist is the fact that the abdominal viscera remain in place. The ligamentous support of any viscus is apparently wofully inadequate. It is, indeed, proved to be inadequate without the powerful assistance of a supporting anterior wall holding up the pneumonic supporting pad, the intestine. This anterior wall, the musculature of the abdominal wall, is the beginning, the foundation of the entire structure; and, as a child's building blocks, the entire structure falls when the abdomen relaxes. Hundreds of useless suspension operations have been devised, exploited, boosted and then reluctantly and dazedly abandoned because the one essential element was omitted—the removal of the original cause.

In our series of cases, great care was taken to eliminate local disease, and also to secure the intelligent cooperation of the patient. We depended for a cure almost entirely on exercises tending to develop the abdominal muscles. The best exercise appeared to be to lie supine on the floor and rise to a sitting posture without the use of the hands. This was to be practiced assiduously morning and evening to the limit of the patient's endurance. It does not take much to tire these patients, at first. The results are surprising. There is no muscle in the body which appears to hypertrophy so quickly as the recti abdominales. Their segments become apparent in a few days and quickly harden. The bowels become more regular at once, though in long drawn out cases this is a variable factor.

The most difficult problem in nonmedical treatment in laboring classes is that they will not cooperate with their physician. They want some medicine to drink out of a bottle. They have little confidence in the drugless methods. This calls, of course, for the development of personality on the part of the physician, without which he will derive little benefit from this or any other discussion excepting specific medication.

Our experience has been that these patients are most tractable and willing to cooperate. They have really been incapacitated. It is easy to point out to them the weakness of their abdominal muscles; the explanation is so logical that the most simple minded can understand.

The results in our hands have been most excellent.

28 American Building.

OPTIMAL FOOD MIXTURES FOR DIABETIC PATIENTS *

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An attempt to analyze the more important requirements of satisfactory diets for diabetic patients is presented in this paper, and a method for calculating diets to satisfy these requirements is proposed.

A satisfactory diet should, in theory, embody four principles: (1) that of total dietary restriction; (2) that of protein restriction; (3) that of carbohydrate restriction, and (4) that of balanced fat and carbohydrate (ketogenic and antiketogenic materials), so that the accumulation of acetone bodies is avoided. Each of these principles is well established, and none of them can be safely disregarded.

THE PRINCIPLE OF TOTAL DIETARY RESTRICTION

Restriction of the total calory intake is usually attended with benefit to the patient. This has been amply proved particularly by Allen [1] and Joslin.[2] Further confirmation is afforded by the diabetic morbidity and mortality statistics of Berlin during the war, when food restriction was enforced.[3]

Recently there has been some inclination to disregard this experience. This cannot be regarded as justifiable.

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* From the Division of Medicine, Mayo Clinic.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Allen, F. M.; Stillman, E., and Fitz, R.: Total Dietary Regulation in the Treatment of Diabetes, New York, Rockefeller Institute for Medical Research, 1919, Monograph No. 11, 646 pp.

[2] Joslin, E. P.: The Treatment of Diabetes Mellitus, Ed. 2, Philadelphia, Lea and Febiger, 1917, 559 pp.

[3] Magnus-Levy, A.: Ueber den Diabetes in Kriege, Deutsch. med. Wchnschr. **45**: 1379-1382, 1919.

although it is legitimate to demand whether the extreme underfeeding practiced in late years is unavoidable and whether the loss of body weight, the inevitable consequence of extreme undernutrition, is as necessary a corollary of the principle of total dietary restriction as has been supposed. If not, it would seem desirable, while maintaining the principle, to protect the patient so far as possible from loss of weight. It is suggested that the chief benefit of calory restriction depends on the reduction of the metabolic rate, accomplished by fasting or undernutrition, rather than on the reduction of the total body mass.

Allen and Du Bois,[4] in 1916, observed that depression of metabolism was of beneficial significance in diabetes because the food requirement was lowered thereby, and recently Allen [5] has reported experimental data obtained on partially depancreatized dogs, which support the view that the effects of undernutrition are due to a reduction of metabolism. The data obtained in a severe case of diabetes by Wilder, Boothby and Beeler [6] likewise show that the sugar tolerance of the diabetic patient is increased by measures which depress the basal metabolic level. Throughout a series of experiments, in periods when the basal metabolic rate fell, the sugar tolerance increased; and, on the other hand, when the rate was highest, the sugar tolerance, as judged by the dextrose-nitrogen ratio of the urine, was depressed to zero. The inverse parallelism of the plotted curves of the basal metabolic rate and sugar tolerance was striking.

Starvation or prolonged undernutrition causes a drop in the metabolic level, but does not invariably do so. Indeed, the level may actually rise, as the observations of Loewi [7] on himself illustrate. As a result of food restriction necessitated by the war, Loewi lost gradually in weight during 1916 and the early part of 1917 and simultaneously his heat production fell; but in July, 1917, when he had lost 22 per cent. of his former weight and when the total calories and protein of his diet were low, his heat production suddenly rose again to a level above that observed in 1914. On the day of observation, the nitrogen of the food was 8 gm. and that of the urine 17 gm. Presumably, when the fat stores of the body are exhausted, the body protein is called on to provide the deficit of energy in the diet, and the specific dynamic action of this protein will elevate metabolism. When this occurs in the diabetic patient, the effect on the sugar tolerance is disastrous. Woodyatt [8] points out the necessity of thinking in terms of metabolism rather than of the diet exclusively in gaging the significance of the effects produced by any dietary proposal, and illustrates this by the report of a case. The ordinary practice of undernutrition failed after nine weeks of trial to establish his emaciated patient in a nondiabetic state with more than 953 calories, whereas after two weeks of a rice and butter diet, equivalent to more than twice the number of calories formerly taken, the carbohydrate tolerance had increased enormously. Urinary nitrogen data are not included in the report, but it is evident, as Woodyatt concludes, that the man on his low diet catabolized so much of his own tissue protein that his protein sugar overtaxed his tolerance limit. We have observed the same phenomenon in several cases, and are convinced that mere loss of body mass is not responsible for the benefit usually obtained by undernutrition.

If the benefit from starvation and undernutrition is derived through lowering the rate of metabolism, such extreme restriction of the diets as has been practiced in recent years is unnecessary, because equal reduction of the metabolic level can be accomplished by much less rigid measures. For example, Lusk [9] has recalculated some of the data obtained by Benedict on a group of healthy college students who were being fed low calory diets, and has compared them with the data obtained by Benedict on a fasting man. He comments: "It is quite extraordinary that the ingestion of a dietary deficient in calories, extending over three weeks, should bring down the basal metabolism of well nourished young men to the same extent as fasting might have been expected to accomplish."

The basal metabolic rate in diabetes has been a matter of controversy. Benedict and Joslin [10] have claimed that it was increased. Allen and Du Bois [4] pointed out that of the twenty-six carefully investigated cases reported, it was normal in thirteen, increased in nine, and decreased in four. Recent investigation of this subject has been made by Wilder, Boothby and Beeler [6] on thirty-one patients with diabetes with the following conclusions:

In diabetes in well nourished patients, the basal metabolic rate does not exceed the normal limits of Du Bois' [11] standards, unless the patient is on a high protein or high calory diet, or has some complicating condition, such as an infection or hyperthyroidism (adenoma of the thyroid or exophthalmic goiter). Acidosis itself does not appear to elevate the basal metabolic rate; an increase in the rate accompanied by acidosis is probably due to the factor that causes the acidosis.

In diabetes in patients who are distinctly under weight and have not been receiving a diet high in protein (or calories), the basal metabolic rate is below the normal limits of Du Bois' standards. The observations of a basal metabolic rate equal to or higher than the Du Bois normal in an emaciated patient should be taken as a warning that the available food of the diet is excessively rich in protein (or calories) or that the patient has long been on a diet so low in calories that he is in a critical state of starvation and is calling on his body protein to meet energy requirement.

In my experience, low protein diets planned to provide calories 20 per cent. below the calculated maintenance calory requirement of an individual comparable in age, sex, height and weight to the patient will, under favorable conditions, accomplish a depression of the basal metabolic level of from 15 to 25 per cent. Since the depression of the metabolism will balance the calory deficiency of the food, diets thus planned, theoretically should maintain, and in practice actually have maintained, patients at constant body weights. Such a dietary procedure can be called low maintenance in contradistinction to undernutrition, which is reserved for the more rigid food restrictions.

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[4] Allen, F. M., and Du Bois, E. F.: Clinical Calorimetry. Seventeenth Paper: Metabolism and Treatment in Diabetes, Arch. Int. Med. **17**: 1010-1059 (June) 1916.

[5] Allen, F. M.: Experimental Studies in Diabetes, Series II, Changes in Assimilation by Alterations of Body Mass, Am. J. M. Sc. **161**: 16-32 (Jan.) 1921.

[6] Wilder, R. M.; Boothby, W. M., and Beeler, Carol: Studies of the Metabolism of Diabetes, J. Biol. Chem. **51**: 311-357, 1922.

[7] Loewi: Quoted by Lusk (Footnote 9).

[8] Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125-141 (Aug.) 1921.

[9] Lusk, Graham: The Physiological Effect of Undernutrition, Physiol. Rev. **1**: 523-552 (Oct.) 1921.

[10] Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes Mellitus, Washington, Carnegie Inst., 1910, Pub. 136; Metabolism in Diabetes, Washington, Carnegie Inst., 1912, Pub. 176; Ueber den Stoff und Energieumsatz bei Diabetes, Deutsch. Arch. f. klin. Med. **111**: 333-365, 1913.

[11] Du Bois, D., and Du Bois, E. F.: Clinical Calorimetry, Tenth Paper, A Formula to Estimate the Approximate Surface Area if Height and Weight be Known, Arch. Int. Med. **17**: 863-871 (June) 1916.

THE PRINCIPLE OF PROTEIN RESTRICTION

The desirability of protein restriction has been recognized for many years, but rigid or maximal restriction of protein has not been a general practice. This is advocated, however, by Marsh, Newburgh, and Holly,[12] and herein lies the main difference between the higher fat diets recently introduced at the Michigan Clinic and the high fat diets of former years, explaining in all probability the better therapeutic results obtained by the Newburgh procedure.[13]

Protein restriction is indicated for three reasons: (1) because the ingestion of protein actually throws a large amount of sugar on the metabolism, 58 per cent. by weight of protein being convertible to glucose; (2) because the relatively high specific dynamic action of protein produces an undesirable elevation of the metabolic rate, and (3) because an excess of protein exerts a specifically depressant effect on the ability of the organism to utilize glucose. Evidence supporting these statements is offered in a previous publication.[6] Under the circumstances, it is certainly desirable to restrict the protein quota of the diet as rigidly as is consistent with the maintenance of a satisfactory nitrogen balance.

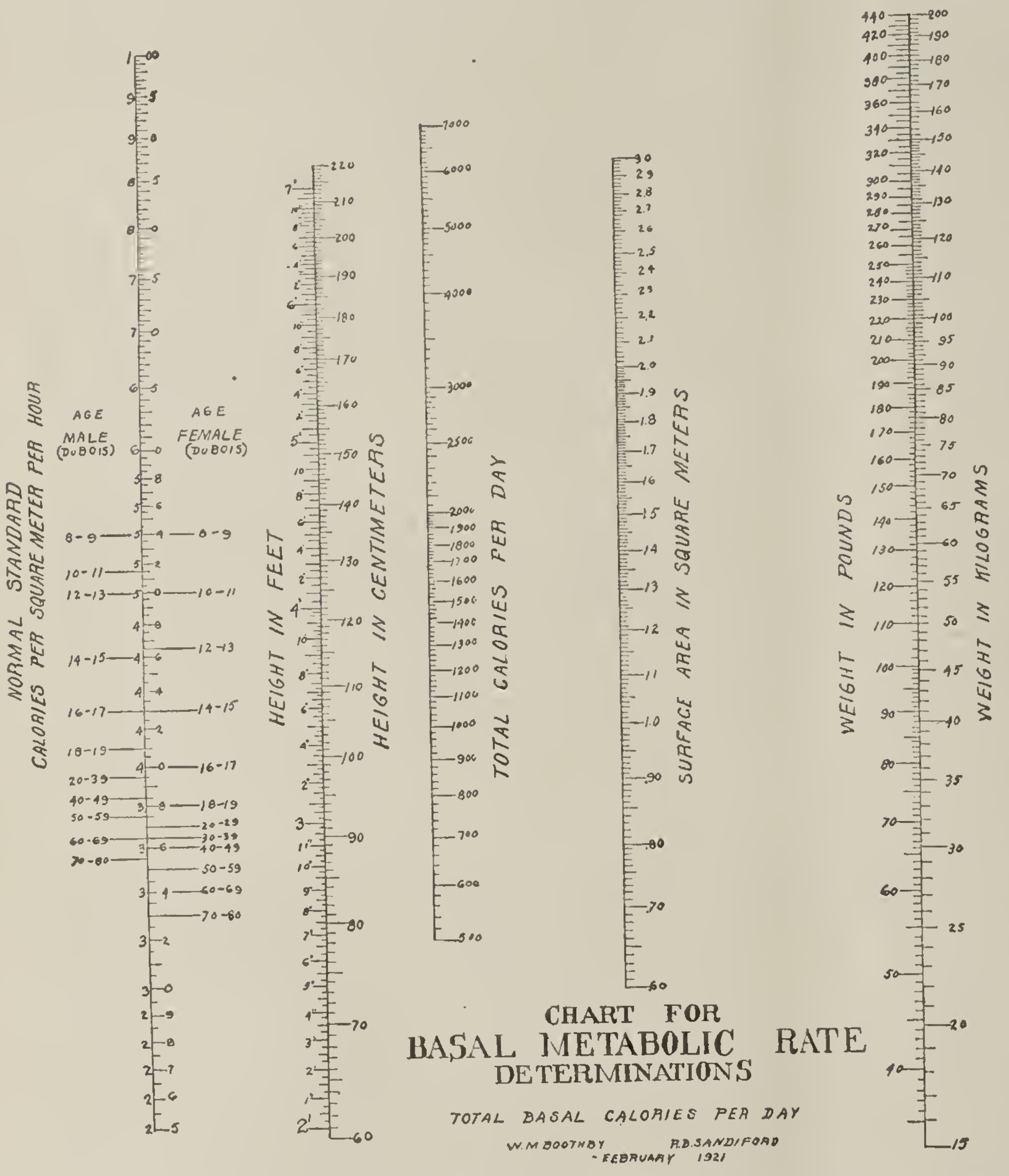

Fig. 1.—Boothby and Sandiford's chart for quick and accurate calculation of normal basal food calory requirement. The weight is located on the weight scale and the height on the height scale with pins (needles set in wooden handles. A straight edge connecting these two points crosses the surface area scale at the patient's surface area. The normal standard is located on the left hand scale. The line connecting this point with the surface area crosses the calory scale at the basal twenty-four hour calory requirement.

Marsh, Newburgh and Holly[12] recently published a review of the literature bearing on the minimal protein requirements of normal persons and diabetic patients; their observations show that nitrogen balance may be established in the diabetic according to the laws applicable to normal persons, provided the total calory requirement is fulfilled. Two-thirds gram for each kilogram of the patient's body weight for twenty-four hours usually suffices when the food calories equal the low-maintenance requirements, and it should never be necessary, under these circumstances, to give in excess of 1 gm. for each kilogram of the patient's body weight, except in the case of children. These may require more protein.

THE PRINCIPLE OF CARBOHYDRATE RESTRICTION

There is fairly general agreement on the value of restricting carbohydrates to a point below the patient's sugar tolerance. This principle is based on clinical experience, and is justified on theoretical grounds. Woodyatt[8] considers it entirely legitimate to regard sugar as a stimulant to the sugar-burning mechanism, and since reduction of this strain in the presence of a diseased or weakened mechanism should favor rest and recuperation, the procedure must be regarded as logical therapy. Under these circumstances, there seems to be no adequate reason why the principle should not be carried to the ultimate conclusion of complete carbohydrate restriction, except for the necessity of balancing the glucose against the fatty acids of the mixture for metabolism in order to avoid acidosis.

THE PRINCIPLE OF BALANCING THE GLUCOSE AND THE KETOLYTIC MATERIALS IN THE FOOD MIXTURES

"The fats burn in the fire of the carbohydrate."[14] The oxidation of food mixtures containing greatly disproportionate amounts of fat results in the accumulation of acetoacetic acid, beta-oxybutyric acid, and acetone. If the process is uninterrupted, diabetic coma supervenes. This is the *bête noire* of the diabetic therapist, and high fat feeding was considered to be an extremely dangerous procedure until Newburgh and Marsh[13] published their interesting observations on high fat diets. Certain quantitative data bearing on the process of ketogenesis, the results chiefly of the work of Shaffer,[15] help to explain Newburgh's results, and it appears to be safe to push the fat quota of the diet farther than was formerly considered justifiable. Theoretically, at least, danger can be avoided, provided the ratio between the ketogenic materials, particularly the fatty acids, and the glucose of the metabolizing food mixture, does not exceed a certain threshold value. This threshold has been defined as the ratio between the molecules of ketogenic material and the molecules of glucose existing in the metabolizing mixture which just fails to cause a clinically significant accumulation of acetone bodies. In determining this threshold, the calculation of the number of molecules of ketogenic material and the number of molecules of antiketogenic glucose in the metabolizing food mixtures has been based on certain assumptions of Shaffer. If these assumptions are tenable, the threshold ratio of significant ketosis is 2:1 according to the observations of Wilder and Winter.[16] This implies that two molecules of acetoacetic acid are provided for by one molecule of glucose, and is in agreement with Shaffer's[17] latest conclusions, although opposed by the views of Woodyatt[8] and those of Hubbard and Wright.[18]

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[12] Marsh, P. L.; Newburgh, L. H., and Holly, L. E.: The Nitrogen Requirement for Maintenance in Diabetes Mellitus, Arch. Int. Med. **29**: 97-130 (Jan.) 1922.

[13] Newburgh, L. H., and Marsh, P. L.: The Use of a High Fat Diet in the Treatment of Diabetes Mellitus, Arch. Int. Med. **26**: 647-662 (Dec.) 1920.

[14] Rosenfeld, G.: Ueber die Entstehung des Acetons, Deutsch. med. Wchnschr. **11**: 683-686, 1885.

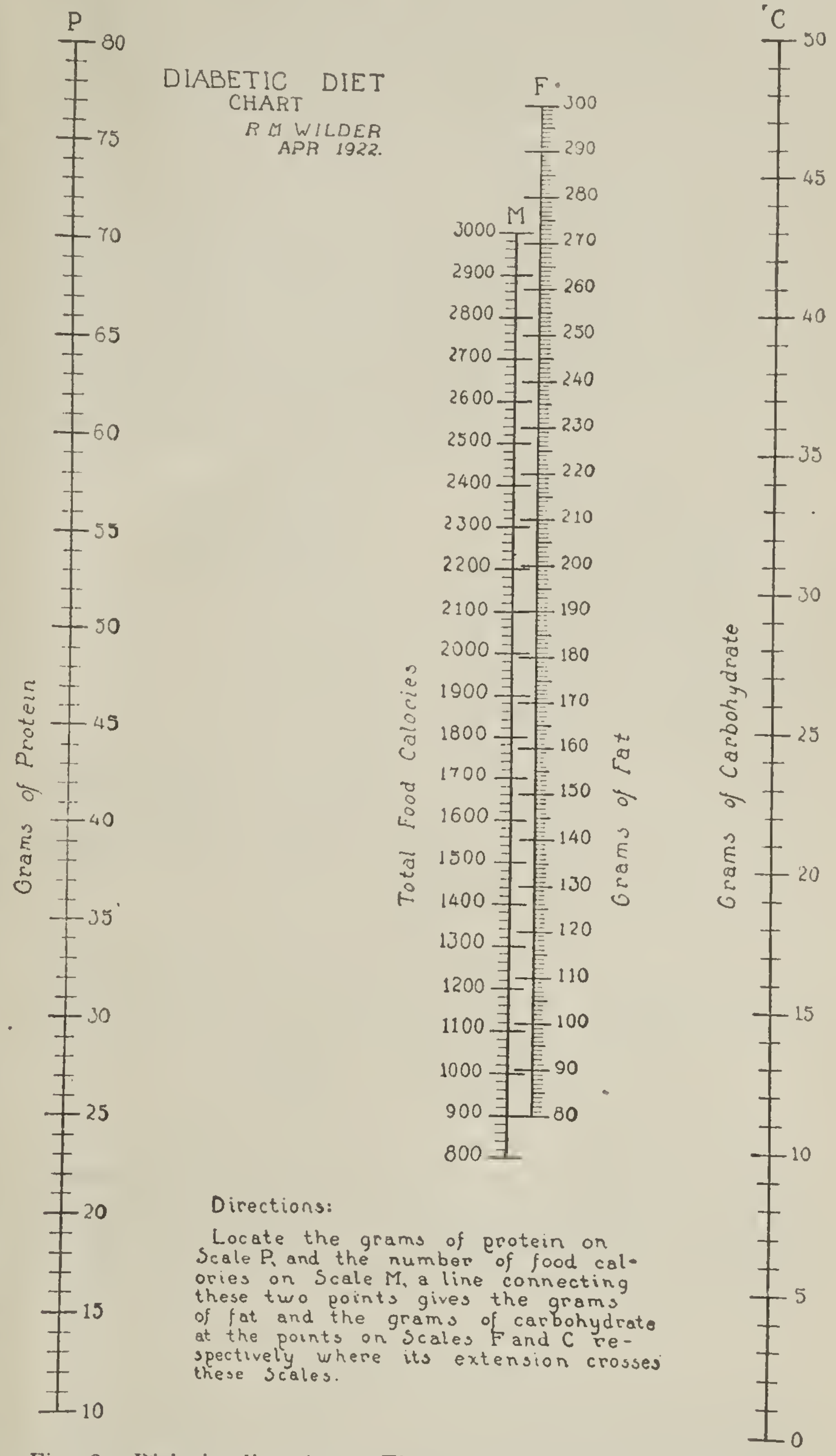
[15] Shaffer, P. A.: Antiketogenesis, I, An in Vitro Analogy, J. Biol. Chem. **47**: 433-448 (July) 1921; II, The Ketogenic Antiketogenic Balance in Man, ibid. **47**: 449-473 (July) 1921; III, Calculation of Ketogenic Balance from the Respiratory Quotients, ibid. **49**: 143-162, 192

In this connection it is necessary to emphasize that knowledge of the ketogenic ratio of a diet mixture is valueless as a gage of the effect of the diet on ketogenesis *unless the calory and nitrogen values of the diet approximate the calory and nitrogen requirements of the patient.* It is the mixture of glucose and fatty acids actually metabolizing which determines whether or not acetone bodies will be formed. This mixture will differ radically from the diet mixture unless the calory and nitrogen demands of metabolism are met by the diet. Any deficiencies in the diet must inevitably be made good at the expense of endogenous food stores, mostly fat. Obvious as this conception should be, it has nevertheless escaped the attention it deserved in much of the recent discussion of balanced diets. It is an argument for estimating the calory requirement of the patient as accurately as possible, and for supplying food calories in sufficient number to meet this requirement as nearly as possible. The low-maintenance diets proposed here are open to the criticism that additional fat may be added to them from body stores. This will certainly occur when the diet is first started; but when the metabolic level falls to the desired low level it should not occur. Lower diets than those here proposed will demand proportionately greater additions of fat from endogenous sources. Such diets are theoretically ketogenic even when they contain relatively larger proportions of carbohydrate. This may explain why some clinicians are unable to employ high ketogenic ratios without encountering acidosis.

The existence of infection may lower the threshold so that significant ketogenesis may occur with lower ratios. Other factors thus far undetermined may likewise lower the threshold, and it is considered advisable, therefore, in planning diets for diabetic patients to give only such food mixtures as will avoid the 2:1 ratio by a safe margin.

THE CALCULATION OF DIETS WHICH WILL SATISFY THE PRINCIPLES OF DIABETIC DIETOTHERAPY

In order to reduce the basal metabolic level without sacrificing body tissue and in order to increase the safety of high fat diets, the total food calories should be maintained as nearly as possible at 20 per cent. below the calculated total calory requirement. The calory requirement must be estimated with reasonable accuracy, and it has been found more satisfactory to base this estimation on the four factors of age, sex, height and weight, according to Du Bois'[11] standards for surface area, rather than on weight alone, as has been the general custom. The normal basal calories each day for an individual are obtained by multiplying the calories for each square meter of the body surface for each hour, given by Du Bois for the approximate age and sex, by the surface area of the patient determined from his height and weight, and multiplying this sum by 24. This being known, proper correction may be made for the increased quantity of food needed to compensate for any work that is to be allowed, thus giving the total calories desired. No allowance need be included as compensation for the specific dynamic action of food, about 10 per cent., or for movements if the patient is confined to bed or room, another 10 per cent., since it is specified that the calories of the food shall be about 20 per cent. below the total energy needs of comparable normal persons on ordinary diets. For a patient in the hospital, the basal calory require-



DIABETIC DIET
CHART
R M WILDER
APR 1922.

Directions:
Locate the grams of protein on Scale P, and the number of food calories on Scale M, a line connecting these two points gives the grams of fat and the grams of carbohydrate at the points on Scales F and C respectively where its extension crosses these scales.

Fig. 2.—Diabetic diet chart: The grams of protein are located on Scale P, and the number of food calories on Scale M; a line connecting these two points gives the grams of fat and the grams of carbohydrate at the points on Scales F and C, respectively, where its extension crosses these scales.

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16. Wilder, R. M., and Winter, M.: The Threshold of Ketogenesis, J. Biol. Chem., to be published.

17. Shaffer, P. A.: Antiketogenesis: The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, J. Biol. Chem. **50**: 26-27, 1922.

18. Hubbard, R. S., and Wright, F. R.: Studies on the Acetonuria Produced by Diets Containing Large Amounts of Fat, J. Biol. Chem. [illegible]: 361-402, 1922.

ment is considered to be the total calory requirement. For a patient engaged in a sedentary occupation, an additional 20 to 30 per cent. is added to the basal estimate.

The serviceability of nomographic charts for the calculations involved in metabolic rate determinations was recognized by Boothby and Sandiford.[19] At the time they prepared their charts, I was considering the principles under discussion in the present paper, and it occurred to me that a modification of one of their charts would give the normal basal energy exchange for twenty-four hours and would increase its usefulness for dietetic work. At my suggestion, they prepared a chart by which the calculation of a patient's food calory requirement can be made quickly and accurately. This chart is reproduced here with their permission (Fig. 1).

The protein allowance of the diet is fixed arbitrarily by the desirability of restricting protein to about two-thirds gram for each kilogram of body weight, except in the case of children, who should receive 1 gm. at least for each kilogram of body weight. The protein quota of the diet is determined from the weight of the patient. Maximal restriction of carbohydrate consistent with the maintenance of a safe ratio between the fat (ketogenic materials) and the glucose of the diet is accomplished with the help of two formulas:

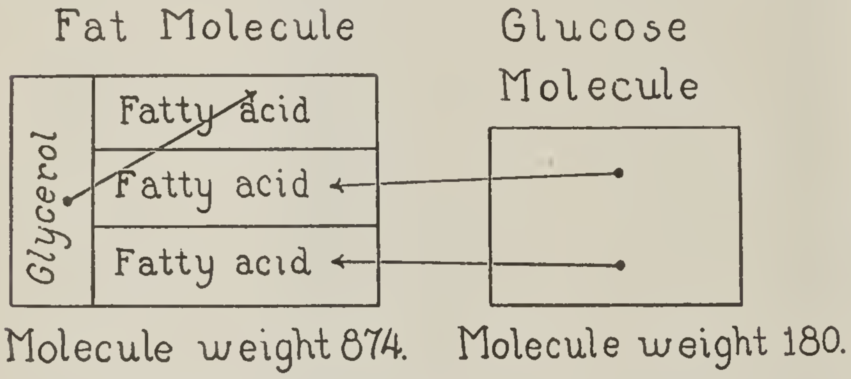

Fig. 3.—Illustrating that one molecule of glucose provides sufficient antiketogenic material for one molecule of fat, on the assumption of a 2: 1 ratio between fatty acid and glucose.

$C = 0.024\ M - 0.41\ P$ Formula 1

$F = 4\ C + 1.4\ P$ Formula 2

In these formulas, F is the number of grams of fat, C the number of grams of carbohydrate, P the number of grams of protein allowable, and M the total calory requirement. The calculation is further simplified by the nomographic chart (Fig. 2).[20]

DIRECTIONS FOR USE OF CHARTS IN PLANNING FOOD MIXTURES

The age, sex, height and weight of the patient are determined, and from them the basal calory requirement for twenty-four hours is estimated by the chart Figure 1. The weight is marked on the weight scale and the height on the height scale with pins (needles set in wooden handles). A straight line connecting these two points crosses the surface area scale at the patient's surface area. The normal standard is located on the left hand scale. The line connecting this point with the surface area crosses the calory scale at the basal calory requirement.

If the patient is confined to his bed or room, the basal requirement represents the total food calory allowance. If work is permitted, an extra allowance of from 20 to 30 per cent. of the basal requirement is made. The sum of the basal requirement and the extra allowance gives the total food calories.

The protein quota of the diet is determined from the weight; for adults this may be two-thirds gram, or 1 gm. for each kilogram of weight; for children, 1 gm. or more for each kilogram.

The total food calories and the protein allowance are located on the chart in Figure 2 (Scales M and P). The line, connecting these two points and extended, crosses Scales F and C at the fat and carbohydrate allowances.

Example.—A man, aged 30, 5 feet 10 inches in height and weighing 140 pounds (63.5 kg.) has a surface area of 1.79 square meters and a total basal calorie exchange of 1,670 calories. If he is confined to his room, this represents his total food calory allowance (Fig. 1). The protein of his diet is 42.4 gm. ($\frac{2}{3} \times 63.5$ kg.). On Figure 2 the line connecting 1,670 on Scale M and 42.4 on Scale P, extended, crosses Scale F at 150.2 and Scale C at 22.7. The food mixture consists, therefore, of 42.4 gm. of protein, 22.7 gm. of carbohydrate, and 150.2 gm. of fat.

When the ketogenic and the antiketogenic molecules contained in these food mixtures are calculated by Shaffer's method, the ketogenic ratio obtained lies between 1.6 : 1 and 1.7 : 1. This ratio avoids the 2 : 1 threshold ratio by a small margin. The diets, therefore, accomplish the maximal restriction of carbohydrate with a safe margin from acidosis, and thus the strain on the sugar-burning mechanism is reduced to a minimum. The principle of protein restriction is satisfied, and, although the diets are low-maintenance diets and so accomplish the desired reduction of the basal metabolic rate, they provide enough food calories to satisfy the food requirement of the patient at his reduced metabolic rate. Continuous wastage of body tissue is thus avoided.

Patients handled in this manner have, with few exceptions, done very well indeed. Glycosuria is controlled within a few days, blood sugar and blood fats drop rapidly, and acidosis is promptly checked.

DERIVATION OF FORMULAS FOR COMPUTING LOW CARBOHYDRATE ANTIKETOGENIC LOW-MAINTENANCE DIETS

In this calculation the following assumptions have been made: A molecule of glucose is considered ketolytic for two molecules of fatty acid. The molecular weight of the fat of the diet is assumed to average 874. It is assumed that the glycerol group of the fat molecule behaves in the metabolism as one half a molecule of glucose.

A molecule of fat consists of a glycerol group and three fatty acid groups. From each of these fatty acid groups a molecule of acetoacetic acid is derivable. By the original assumption that a molecule of glucose is ketolytic for two molecules of acetoacetic acid, the glycerol of the fat will ketolyze one of the three fatty acid groups in the fat, leaving two fatty acid groups to be provided for. To avoid ketogenesis, therefore, a molecule of glucose (molecular weight 180) must be available from the carbohydrate or protein of the diet mixture for each molecule of fat in the mixture (Fig. 3).

A gram molecule of glucose, 180 gm., would thus provide for a gram molecule of fat, 874 gm., and a gram of glucose would provide for $874 \div 180 = 4.86$ gm. of fat. The weight of the fat quota of the diet, F, may, therefore, be 4.86 times that of the glucose, G, derivable from the carbohydrate and protein of the diet. Expressed algebraically, $F = 4.86\ G$. To provide the margin of safety, this equation is made $F = 4\ G$.

All glucose derivable from the carbohydrate quota of the diet is available, presumably, for the ketolysis of fat, and no significant error is involved in calculating the carbohydrate as if it were glucose. The glucose resulting from protein metabolism, however, is not all available because some of the amino-acid groups in protein are ketogenic and will require a certain amount of glucose to accomplish their ketolysis. One hundred grams of protein would yield to the metabolism 58 gm. of glucose (antiketogenic) and 16 gm. of nitrogen (a neutral substance), leaving 26 gm. of material [100 — (58 + 16)] which might be ketolytic or neutral. To provide a further margin of safety, the assumption is made that these 26 gm. are all ketolytic; they are calculated as preformed acetoacetic acid (molecular weight 102). According to the original assumption that a molecule of glucose will provide for two acetoacetic acid molecules, these 26 gm. would require for their oxidation, 23 gm. of glucose. If x represents the glucose necessary for this purpose and $x : 26 = 180 \div 2 : 102$, $x = 23$. This much of the sugar derivable from 100 gm. of protein is reckoned, therefore, as utilized in the internal combustion of protein, and of the original 58 gm. of glucose, there would remain only $58 - 23 = 35$ gm. available to assist in the fat metabolism. Therefore, 35 per cent. by weight of protein, P, with all the carbohydrate, C, make up the glucose, G, of the equation, $F = 4\,G$. In consequence, the equation may be rewritten: $F = 4\,(C + 0.35\,P)$ or $F = 4\,C + 1.4\,P$, Formula 2.

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[19] Boothby, W. M., and Sandiford, R. B.: Nomographic Charts for the Calculation of the Metabolic Rate by the Gasometer Method, Boston M. & S. J. **185**: 337-354 (Sept. 22) 1921.

[20] Copies of the nomographic charts may be secured from H. N. Elmer, 1641 Monadnock Building, Chicago. The reproductions in this text (Figs. 1 and 2) are too small to be serviceable. The originals are on a larger scale.

Formula 1, which gives the value of the carbohydrate quota of the diet, is derived from Formula 2 with the help of the additional equation, $M = 4.1\,C + 4.1\,P + 9.3\,F$, wherein M, the total calories of the diet, is represented as the sum of the calories from the carbohydrate, protein and fat. Inserting into this equation the value for F, in Formula 2, we obtain $M = 4.1\,C + 4.1\,P + 9.3\,(4\,C + 1.4\,P)$, which simplified and rearranged, becomes $C = (M - 17.12\,P) \div 41.3$ or, in round numbers, and further simplified $C = 0.024\,M - 0.41\,P$, Formula 1.

DETERMINATION OF LENGTH OF SCALES, DIABETIC DIET CHART

Scale	Limits	Modulus*	Scale Equation	Scale Length
C	50 gm. f_1 (4 C) = 200 0 $\underline{f_1}$ (C) = 50 difference 50	$m_1 = 1$ mm. $\underline{m_1} = 4$ mm.	$x = m_1 f_1$ $\underline{x} = \underline{m_1}\,\underline{f_1}$	1 × 200 = 200 mm. 4 × 50 = 200 mm.
P	80 gm. f_2 (1.4 P) = 98 10 $\underline{f_2}$ (0.41 P) = 28.7 difference 70	$m_2 = 2$ mm. $\underline{m_2} = 6.83$ mm.	$y = m_2 f_2$ $\underline{y} = \underline{m_2}\,\underline{f_2}$	2 × 98 = 196 mm. 6.83 × 28.7 = 196 mm.
F	300 gm. f_3 (F) = 220 80 difference 220	$m_3 = \frac{m_1 \times m_2}{m_1 + m_2}$ $\frac{1 \times 2}{1 + 2} = 0.66$ mm.	$z = m_3 f_3$	0.66 × 220 = 145.2 mm.
M	3,000 cals. $\underline{f_3}$ (0.024 M) = 52.8 800 difference 2,200	$\underline{m_3} = \frac{\underline{m_1} \times \underline{m_2}}{\underline{m_1} + \underline{m_2}}$ $\frac{4 \times 6.83}{4 + 6.83} = 2.51$ mm.	$\underline{z} = \underline{m_3}\,\underline{f_3}$	2.51 × 52.8 = 133.1 mm.

* In the construction of Figure 2 the values of the moduli are those which were employed originally in the construction of the scales; the figures do not refer to the chart as reproduced.

CONSTRUCTION OF THE NOMOGRAPHIC CHART FOR THE FORMULAS $C = 0.024\,M - 0.41\,P$ and $F = 4\,C + 1.4\,P$

The directions for the construction of nomographic charts contained in a paper by Boothby and Sandiford[19] were followed. Formula 1 may be rewritten $C + 0.41\,P = 0.024\,M$. Formula 2 is $4\,C + 1.4\,P = F$. Each of these equations contains three variables, and may be solved by an alinement chart consisting of three parallel scales. By choosing appropriate moduli, the scale for C in Formula 1 may be made to equal in length that for 4 C in Formula 2. Similarly, the scale for 0.41 P in Formula 1 may be made to equal that for 1.4 P in Formula 2. In this manner it is possible to superimpose the two alinement charts and obtain one chart of four parallel scales. This chart will solve both equations with one setting when any two of the four variables are known. The determination of the length of the scales is shown in the accompanying table.

The distance cp between Scale C and Scale P is 100 mm. The center of Scale C is on a horizontal line with the center of Scale P. Scale C and Scale P are placed in position and then graduated. As only additions and subtractions are involved and as no logarithms are used, all graduations are uniform. The carbohydrate scale, C, with limits between 0 and 50 gm., is divided accordingly into fifty equal parts, and the protein scale, P, with limits of 10 gm. and 80 gm., is divided into seventy equal parts.

The position of the fat scale, F, between Scale P and Scale C, is calculated from the equations $\overline{pf}/\overline{fc} = m_2/m_1 = 2/1$ and $\overline{pf} + \overline{fc} = 100$ mm. From these equations $\overline{pf} = 2\,\overline{fc}$ and $\overline{pf} = 100 - \overline{fc}$. Therefore, $2\,\overline{fc} + \overline{fc} = 100$ and $\overline{fc} = 100/3 = 33.3$ mm. Scale F is, therefore, placed 33.3 mm. from Scale C. The lower limit, 80, of Scale F is located by connecting the point 10 on Scale P with the point 16.5 on Scale C. This is indicated by the formula $4\,C + 1.4\,P = F$ or $4\,(16.5) + 1.4\,(10) = 80$. Scale F is then graduated from its lower limit of 80 gm. to its upper limit of 300 gm.

The position of the calory scale, M, between Scale P and Scale C is calculated from the equations $\overline{pm}/\overline{mc} = \underline{m_2}/\underline{m_1} = 6.83/4$ and $\overline{pm} + \overline{mc} = 100$. From these equations $\overline{pm} = 6.83\,\overline{mc}/4 = 1.71\,\overline{mc}$ and $\overline{pm} = 100 - \overline{mc}$. Therefore, $1.71\,\overline{mc} + \overline{mc} = 100$ and $\overline{mc} = 100/2.71 = 37$ mm. Scale M is, therefore, placed 37 mm. from Scale C. The lower limit, 800, of Scale M is located by connecting the point 10 on Scale P with the point 15.1 on Scale C, as indicated by the formula $C + 0.41\,P/0.024 = M$, $15.1 + 0.41\,(10)/0.024 = 800$. Scale M is then graduated uniformly from its lower limit of 800 calories to its upper limit of 3,000 calories.

SUMMARY

An attempt is made to analyze certain principles underlying the dietotherapy of diabetes and a method is proposed for calculating diets which will embody these principles. Such diets should, it is believed, satisfy four requirements:

1. The diets should lower the metabolic rate of the patient 15 or 20 per cent. below that of an individual of like surface area, age and sex on an unrestricted diet. Under favorable circumstances, this can be accomplished by making the food calories equal to the basal calory requirement of a fully nourished normal person of the same height, weight, age and sex as the patient, and adding an allowance of 20 or 30 per cent. for work if a sedentary occupation is permitted; an extra allowance is not made for the specific dynamic action of food or for movements in bed. This procedure is called low-maintenance in contradistinction to more

rigid dietary restriction termed undernutrition. The advantage of a low-maintenance diet is that enough calories are provided to satisfy the energy requirements of the patient at his reduced metabolic level, thus avoiding continuous wastage of body tissue. It is more satisfactory to base calculation of the basal calory requirements on the four factors of age, sex, height and weight, according to Du Bois' standards for surface area, rather than on weight alone, as is the general custom. The calculation is simplified by a nomographic chart published by Boothby and Sandiford.

2. The protein quota of satisfactory diets should be restricted to the minimal value consistent with the maintenance of nitrogen equilibrium. This requirement is usually met by two-thirds gram for each kilogram of the patient's body weight.

3. In order to reduce as far as possible the sugar strain on the weakened sugar-burning mechanism, the carbohydrate quota of the diet should be restricted to a minimum consistent with safety from acidosis.

4. A safe ratio must be maintained between the molecules of ketogenic material and molecules of glucose contained in the food mixture. With low protein diets, such as those proposed, providing calories equal to the low-maintenance requirement of the patient, the ketogenic ratio which just fails to cause a clinically significant accumulation of acetone bodies, the so-called threshold ratio, is 2:1. This implies that the oxidation of two molecules of acetoacetic acid is accomplished in the presence of one molecule of glucose. The ketogenic ratio of the food mixture should avoid this 2:1 ratio by a reasonable margin of safety.

With the low-maintenance calory requirement, M, of the patient known (nomographic chart, Fig. 1) and the protein quota, P, determined from the patient's weight, the carbohydrate quota, C, and the fat quota, F, of a diet that will satisfy requirements 3 and 4 may be readily determined from the formulas:

$$C = 0.024\ M - 0.41\ P \qquad \text{Formula 1}$$
$$F = 4\ C + 1.4\ P \qquad \text{Formula 2}$$

The calculation of these formulas is simplified by the use of the second chart (Fig. 2). Diets planned in this manner have a ketogenic ratio of 1.65:1. The derivation of the formulas 1 and 2 and the construction of Chart 2 has been described.

ABSTRACT OF DISCUSSION

Dr. L. H. Newburgh, Ann Arbor, Mich.: The original work on starvation was done by a mere boy on the dog. He fed this dog 100 gm. fat, and he burned 97 gm. In other words, there was no difference in consumption of fat of the fasting dog and the consumption when it was fed an amount greater than was needed. The principle is not quite so simple when one comes to diabetes. The diabetic is undernourished in a severe case. He has no longer the fat stores that the normal dog or human being has. He has a less amount of fat available for the maintenance of his energy needs. He is therefore forced to use protein to a greater extent than if normally nourished. The increase of protein metabolism is accompanied by increased metabolism of carbohydrates. It seems to me that starvation has no advantages over the low calory-high fat diet for the purpose of getting the patient sugar free, because starvation is often a serious matter. A few patients die as a result of starvation. A few patients do not become sugar free, and nearly all patients find it a great hardship. The same results may be accomplished by feeding a low diet from the point of view of energy, a diet which is simply high in fat; in other words, feeding the patient what he would burn in starvation if he were still well nourished. In our experience with 175 consecutive cases, such a plan has succeeded in making every diabetic patient sugar free. We have had a large number of children and a few very young children. No patient has developed an acidosis, and no patient has developed any serious complications. So far as our experience has gone, we are convinced we can accomplish more by this plan than by starvation. That experience is bolstered up by the fact that some of our patients have already been starved before they come to us and not been made sugar free, and then we have an opportunity to try the other plan. And those patients who do not become sugar free on starvation do become sugar free when a diet derived chiefly from fat is used.

Dr. Nelson W. Janney, Los Angeles: With the consequent complications involved, this scheme of Dr. Wilder's is to be particularly appreciated for simplifying the application of new principles. Dr. Wilder's recent researches have for the first time clearly comprehended the necessity for taking into consideration the endogenous metabolism in the treatment of diabetes. The lowering of the rate, which Dr. Wilder's patients have shown, is borne out by previous practical experience. A number of other workers in diabetes have claimed that diabetic patients have for some years been able to hold that rate and keep up weight and strength. These patients do not always do well after months and years of treatment on the very high fat balance. With the exact amount or ratio, I do not think we can make an absolutely mathematical application in every case.

Dr. W. H. Olmsted, St. Louis: If a ratio holds, and it most certainly does, if one has to feed a low protein diet, one must certainly do with a low carbohydrate diet. This means that one has to send one's patient home on very few calories, in most cases of severe diabetes, or just enough calories to keep him alive. He must get along in most instances on 200 or 300 or 400 calories in a day. It means not only that he must be taught to feed himself properly, but he has to adjust his exercise to his calory allowance, and it must be necessarily very low.

Dr. Russell M. Wilder, Rochester, Minn.: This is an extremely complex subject and hard to discuss or handle in the short time available. I want to emphasize that we have not attempted to apply this rate ratio in all our cases, but to the ones in which it was absolutely necessary, in other words, the more severe cases. I know that it is an entirely open question whether it is possible to reduce the carbohydrates below what seems to be necessary for the determination of tolerance. Another point—the protein: There are certain principles worth while applying practically. The diets calculated in this manner, I think most of you will agree with me, are the ones that are best established in the dietotherapy of the disease. I do feel that, perhaps, something can be gained by this more accurate procedure in estimating the number of calories that a patient needs. As long as we can arrive at that food requirement with such ease by means of these charts, it seems desirable to do so. And if the second chart principle could be applied to the construction of a chart to settle any other formula for carbohydrate and protein, it seems desirable to follow it. The description of the derivation of the formula and the drawing of the calculation of the chart will be presented in the published paper.

Sanitary Work in El Salvador.—In his national report for the year 1921, Dr. L. V. Velasco, director general of Public Health in El Salvador, lays stress on the progress accomplished. The department has been divided into six divisions: maritime sanitation and disease prevention, venereal prophylaxis, school infection, vaccination and inspection, sanitary engineering, and legal. Besides there is a department of hookworm disease connected with the department. The department now has district health officers and venereal clinic agents in practically all large cities, and quarantine physicians in all ports, besides a personnel of sanitary agents, inspectors and sanitary police. Dr. Velasco gives credit to the Rockefeller Foundation for the eradication and prevention of yellow fever. The foundation has also contributed to the organization of a bacteriologic laboratory now under way. There was no smallpox during the year, and 153,725 persons were vaccinated.

ACACIA FOR TRANSFUSION *

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Convinced, as I am, of the value of acacia solution for intravenous infusion, when properly used, it seems to me unfortunate that this resource, which has been found in so many cases to be a useful one, should be removed from the list of therapeutic agents owing to incorrect statements, on the one hand, of its physiologic properties and, on the other, to critical acceptance of clinical results which turn out on inquiry to have been due to causes other than the acacia itself.

In order that my remarks may not be too rambling or discursive, it will be best to base them on certain recently published articles in The Journal A. M. A. and elsewhere. In an editorial,[1] the impression is given that the use of acacia solution is rapidly being given up on account of its deleterious effects. This impression appears to be due, as far as my experience goes, mainly to the hesitation of those who have had favorable results to publish them, just as one would not consider it worth while to publish reports of beneficial effects from drugs whose value is already well established. It happens thus that the good effects obtained from acacia are frequently found out only by casual reference, while the few cases of apparent nonsuccess are freely referred to. There are, of course, exceptions, and I may mention here especially the work of Dr. George Gray Ward, Jr., and Dr. Lilian Farrar at the Woman's Hospital of New York, who state that they have used the solution in some 400 odd cases and have had "no bad results of any description," since the solution was properly prepared, and speak in high terms of its value.[2] This fact alone, in combination with the experience in the British army to be mentioned presently, suggests that some faulty method either of preparation or administration lies at the bottom of the bad results, or perhaps that some patients were in so hopeless a state that any mode of treatment would have had the same effect. The practical importance of clearing up doubts as to the safety of acacia solution is that it is capable of affording help at times when the transfusion of blood is impossible. It is obvious that there are many cases in which immediate measures are urgent. The experience of the war showed that the sooner after injury symptoms of shock were treated, the better the chance of survival. Donors of blood cannot always be found at a moment's notice, and even if blood should ultimately be necessary, a preliminary injection of acacia solution may tide over a critical period. The solution should, indeed, always be kept ready for use in the operating theater, and its low cost renders economy unnecessary.

The first objection made in the editorial is that acacia causes agglutination of corpuscles. The question was discussed at some length in my article[3] of 1920. Apart from the fact that this phenomenon is found only in some cats and is absent in man (Kruse does not state how his experiments were made, it is possible that some impurity was present in his solutions, and even sucrose agglutinates by some methods of test), it occurs in the cat only when the blood is left to stand. It is purely mechanical and is never followed by hemolysis. Thus, I found that the thick deposit of agglutinated corpuscles, formed after standing for twenty-four hours, could be injected into a cat without any ill effects whatever. No evidence has been brought in support of the hazy statement that changes may occur in the acacia solution that make it more likely to cause agglutination in man. I am not prepared, however, to deny the possibility; but, even so, there is no ground for apprehending risk on this account. Connected with this problem is the statement that capillary embolism has been produced. It is somewhat astonishing that anything that happens to a patient subsequent to the use of acacia solution is likely to be attributed to the treatment. A case in point came under my own notice. It was stated and accepted that death was due to capillary embolism. I requested the pathologist who was responsible for the necropsy to look up his notes. He found that there was no capillary embolism, and that death was not in any way connected with the acacia infusion.

I will leave readers to judge of the reliance to be placed on the production of "anaphylactoid" symptoms in guinea-pigs, and will only mention that experiments made in the usual way to test production of true anaphylaxis in cats and guinea-pigs gave negative results in my hands.

On looking up the experiments of Foster and Whipple,[4] one finds that, so far from acacia interfering with the proper return of the fibrin to its normal value after hemorrhage, it is stated that its effect is the same as that of serum, bringing the fibrin gradually to its normal, whereas Locke's solution causes an overproduction. I have never myself observed any retardation of clotting, beyond what must naturally occur as a dilution of the plasma, which would be small in any therapeutic use of the method.

It is impossible to discuss reported cases of death from its use, without detailed descriptions.

I pass on to speak of the use of acacia solution during the war. Henderson and Haggard[5] refer to the present writer and his collaborators as having "tried to introduce it." It may be of interest to recall the fact that, at the end of the war, 75 liters a day was being supplied to the British army in France from the base hygiene laboratory at Boulogne. Just after the armistice, a conference of consulting surgeons and others was called in order to discuss the use of acacia solution. It was agreed that no harm was to be apprehended from its proper use, while stress was laid on the importance of the purity of the acacia and the method of preparation. There was difference of opinion as to the relative values of blood and acacia; while some present stated that they had found no difference, others thought blood superior. The reports of Capt. Oswald Robertson, to which reference is made in the editorial, were considered at this conference, and it was recognized that the unfavorable results in the American army at the later stages were due to the severe state of shock in which many of the patients arrived after long transport. Space forbids detailed description of what this means. It must suffice to recall the production of a permeability of the capillaries, which, as Keith found by blood volume measurements, does not allow the retention in the circulation of any injected fluid, even

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* From the Institute of Physiology, University College.

[1] Deleterious Effects of Acacia for Transfusion, editorial, J. A. M. A. **78**: 730 (March 11) 1922.

[2] Discussion on paper by Dr. Lilian K. P. Farrar, American Gynecological Society, Am. J. Obst. **1**: 1 (Oct.) 1920; Surg., Gynec. & Obst. **32**: 328 (April) 1921.

[3] Bayliss, W. M.: J. Pharmacol. & Exper. Therap. **15**: 66 (March) 1920.

[4] Foster and Whipple: Am. J. Physiol. **58**: 405, 1922.

[5] Henderson, Yandell, and Haggard, H. W.: Hemorrhage as a Form of Asphyxia, J. A. M. A. **78**: 697 (March 11) 1922.

of blood. Captain Robertson concludes that when unsuitable cases were excluded, the effects of acacia were definitely good. "Chills" sometimes occurred if the solutions were too cold or the injection too rapid. But Sir Cuthbert Wallace of the First Army, who had used acacia solution from its first introduction, stated on another occasion that he was not afraid of chills, while the general impression seemed to be that they were not more common with acacia than with blood. The importance of careful preparation of the solutions led to the establishment of a special laboratory under Captain Telfer for proper carrying out of the process.

Stewart's[6] statement that the use of acacia is "unphysiologic" refers, as he himself says, merely to its viscosity, if looked on as an important property. In my paper already referred to, I called attention to the comparative unimportance of this factor, and I am quite prepared to admit that it may be a disadvantage under certain conditions. It is remarkable, although I attempted to explain the matter in the place mentioned, how little it is realized that the really essential propery of acacia is that it is a colloid with an osmotic pressure. Since the blood vessels are impermeable to colloids, this osmotic pressure can show its effect in attracting or retaining water in the blood. It must therefore be present in such an amount as to give a value equal to that of the plasma proteins. This means between 6 and 7 per cent. of acacia. The viscosity, owing to the extra work put on the heart, is a disadvantage; but it is greatly reduced by the process of sterilization in the autoclave, and, after all, it is only at its maximum equal to that of the blood. It may, however, be recalled that it is owing to the viscosity of the blood that a fairly high arterial pressure can be maintained. In respect of two important organs, the brain and the heart, the nutrient circulation depends on the height of this pressure, since these organs are scarcely, if at all, supplied with vasomotor nerves. Markwalder and Starling showed that the heart begins to suffer if the blood pressure falls below about 80 to 90 mm. of mercury. Hence, if under any pathologic condition it falls below this value, the viscosity of the injected fluid may be of assistance. Fischer and Hogan, in their addition of a small quantity of gelatin to a fluid for intravenous injection, did not realize the part played by osmotic pressure, and appear to have been under the impression that the presence of a very small amount of a colloid would, by its "imbibition" of water, prevent escape to the tissues. There are, of course, other objections to gelatin, which need not be further referred to here.

The work of Henderson and Haggard requires rather more detailed consideration. It would be absurd to suppose that any artificial fluid could even temporarily replace the whole of the blood, that is, if the red corpuscles are of any importance at all. It is also clear that there must be some limit below which the supply of red corpuscles to the tissues would be inadequate for their oxygen supply. Various data, clinical and experimental, place this limit at about 50 per cent. of the normal number. In other words, if the volume of the blood is kept up, the corpuscles may be diminished to half their number without serious results. Doubtless, if exercises were taken, there would be signs of anoxemia.

Now, the amount of blood removed in Henderson and Haggard's experiments was far in excess of this. No advocate of the use of acacia solution has suggested that it can replace more than one half of the blood. In the experiment given in Chart 2 of the paper in question, the original volume of the blood would be, on the most accurate determinations, about 7.3 per cent. of the weight of the animal, i. e., 800 c.c. The amount removed was 659 c.c.; that is, 80 per cent. Of course, a certain quantity of fluid was absorbed from the tissues during the hemorrhage; but, even thus, much more than 50 per cent. was taken away. In fact, the degree of hemorrhage was greatly in excess of anything that is likely to occur in practice, except under the most unusual conditions. According to my experience, it is surprising that acacia solution kept the animal alive until next day. A comparable degree of hemorrhage in man would be a loss of some 5 liters of blood. Comparing Chart 2 with Chart 1, it seems to me that the fallacious nature of the "method of standard hemorrhage" is obvious. A removal of only 44 per cent. of the blood in the animal reduced the blood pressure to the same level as that of the previous dog, but the cases are in no way parallel. The correct way to do the experiments would have been to determine the blood volume in each case and then remove the same proportion of blood. The blood pressure is no guide. It depends on the reaction of the vasomotor center. If this is adequate, a patient suffering from severe traumatic shock may have a fairly high blood pressure. It is the volume of the blood, not the pressure, that is the determining factor. If this is large enough, the tissues do not suffer from asphyxia, even after considerable hemorrhage. The experiments of Gesell showed that the increased rate of flow was more than sufficient to compensate for the dilution of the blood; except, of course, in the exceptional conditions of Henderson and Haggard's experiments.

But even under the drastic hemorrhage of these experiments, the value of acacia solution is shown in the table given. Taking those cases in which it is stated that there was recevery, we find that blood amounting only to 3.7 per cent. of the body weight, that is, less than one half of the amount present, can be removed without death, in the absence of treatment, whereas if the blood is replaced by acacia solution, 5.1 per cent. can be safely removed.

The statements of Kruse[7] require a few remarks. The first point is that a simple calculation would show that the osmotic pressure of even 25 per cent. acacia is not high enough to balance that of the contents of the red blood corpuscles; so that they must swell and burst. In practice, of course, either sodium chlorid or glucose is added to give the requisite osmotic concentration, and no hemolysis is then produced. It seems to be frequently forgotten that the membrane of cells is impermeable to salts and glucose, whereas the composite walls of the blood vessels are permeable to these and impermeable only to the large aggregates of colloids. Thus, it is only the osmotic pressure of the latter that comes into play in respect of escape of fluid from the circulation. The question of agglutination has been referred to above. The diminution of rhythmicity in isolated smooth muscle seems of little importance, but it is possible that the condition in the presence of acacia may be more normal than the exaggerated activity in certain salt solution. The decrease of urinary secretion depends entirely on the previous state. If diuresis has been induced by water or saline, it is clear that it will be brought back to normal if a colloid equivalent to those of the blood is added. The rate of filtration through the glomerulus under a given arterial pressure is inversely proportional to the counteracting osmotic pressure of the impermeable colloids. Of course, this is an important fact in the comparison of saline and acacia solutions as regards their relative efficacy in maintaining the volume of the blood after intravenous injection. Blood and acacia solution behave in the same way, but have not the diuretic action of Ringer's solution. On the other hand, if there is suppression of urine owing to a low blood pressure, the rise of this in consequence of the infusion of acacia solution restores the secretion. This is easily shown experimentally, and has been found to occur in cases of blackwater fever by Dr. Burkitt of Nairobi, who uses the method with success. There is some contradiction with regard to its use in cholera. As is well known, Sir Leonard Rogers uses 2 per cent. saline solution, but repeated injections are necessary. He has not found acacia solution to give good results. On the other hand, a medical officer who was with the British army in Mesopotamia informs me that it was the routine treatment there.

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[6] Stewart, G. N.: Am. J. Physiol. **49**: 233 (July) 1919.

[7] Kruse: Am. J. Physiol. **49**: 137, 1919 (Proc.).

Kruse admits that the blood volume is well maintained.

If 25 per cent. solutions are used, as Erlanger points out, they must be given very slowly in order to mix well with the blood. The 6 per cent. solution mixes freely. The statement that acacia is not tolerated after hemorrhage must refer to the simple 25 per cent. solution without salt, because it is in direct contradiction with the experience of those who have used 6 per cent. in saline. I fail to understand the meaning of the statement that pharmacologic evidence does not support its use. There seems to be some suggestion of the false idea that acacia has a druglike action, whereas it is a completely inert substance chemically, like the serum proteins, and its action is purely mechanical. The same view of a druglike action appears to be the meaning of the last sentence in the editorial. This is the place to refer briefly to the use of concentrated (25 per cent.) acacia solutions in small quantities, as recommended by Erlanger. Such solutions, by attracting water from the tissues, augment the volume of the blood, as do the larger amounts of the more dilute solutions. If there is plenty of fluid in the tissue spaces, the effects may be very similar. But, since the object is to increase the volume of the blood in circulation, and fairly rapidly, it seems to me to be preferable to use the more dilute solutions. In practice, however, it appears that either method is effective.

In experimental work on shock, I found that the first injection of acacia solution may appear to have little or no effect, whereas a second, comparatively small one, led to recovery. In view of this fact, it was recognized at the Boulogne conference that the statements as to blood transfusion being sometimes effective after acacia had failed were of no value, since, if the second injection had been acacia instead of blood, it might also have been effective. There is a general remark which may be made in connection with comparisons between blood and acacia. If there was an impression that the former was preferable, even in mild cases of hemorrhage or shock, it was only natural that it should be reserved for cases that promised to benefit, whereas acacia solution would be given in the more hopeless cases, which did not appear likely to repay the expenditure of blood.

It is a matter of the greatest importance to use good samples of the acacia. They should be in clear, nearly colorless lumps. If required to be in powder, the lumps should be selected first and then ground. The method of preparation of the solution is given by Dr. Farrar, and in more detail in Telfer's article in Report No. 25 of the British Medical Research Council. It is probably best to purchase the solution sterilized in bottles. The Medical Research Council has made arrangemetns with Messrs. Evans, Sons, Lescher & Webb of Runcorn to supply these in England at a cheap rate.

The commercial powdered samples of acacia are usually adulterated and useless. During the war, the British army in Italy had bad experience with acacia solution. At my request, a sample of the acacia was sent me. It was in powder and left a large, dirty, insoluble deposit. The solution was quite useless when tested on cats. Another experience is instructive. Dr. Burkitt of Nairobi, whose prolonged favorable use of acacia solution in blackwater fever has already been mentioned, suddenly found his cases going to the bad. He wrote to me for suggestions, but before my letter had time to reach him, I received a further one from him stating that he had discovered the cause of his failure in the fact that the acacia used for the later solutions had become acid, owing to decomposition in the hot climate. It is scarcely probable that the acidity was the only change that had occurred. If the stock of acacia is kept dry in closed vessels, it is unlikely that such decomposition would occur in cooler climates; but the circumstance tends to emphasize the conviction that bad results are mainly due to bad preparations. It would seem scarcely necessary to remark that the same care should be given to the intravenous use of acacia solution as is used in the transfusion of blood.

CORRELATION OF BASAL METABOLIC RATE WITH PULSE RATE AND PULSE PRESSURE *

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SAN FRANCISCO

Extreme deviations from the normal basal metabolic rate are accompanied by very definite and easily recognized alterations in other functions. Some of these, such as changes in blood pressure, pulse rate and respiratory rate, can be expressed quantitatively and utilized as rough guides to fluctuations in the metabolic rate. This study concerns itself only with pulse rate and pulse pressure in their relationship to the basal metabolic rate. It will be shown that these two measurable functions of the circulation tend to vary directly with the basal metabolic rate when they are obtained under the same "basal" conditions as are standard in basal metabolic work.

There are many references in the literature to the increased pulse rate associated with increased metabolic rates. Benedict and Harris [1] discuss this subject extensively. Sturgis and Tompkins,[2] and more recently

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* Read before the Section on Practice of Medicine at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Harris, J. H., and Benedict, F. G.: A Biometric Study of Basal Metabolism in Man, Pub. 279, Carnegie Inst., Washington, 1919.

[2] Sturgis, C. C., and Tompkins, E. H.: A Study of the Correlation of the Basal Metabolism and Pulse Rate in Patients with Hyperthyroidism, Arch. Int. Med. **26**: 467 (Oct.) 1920.

Peterson and Walter,[3] have published figures and charts emphasizing the parallel increase of pulse rate and basal metabolic rate. It has now become fairly well established that the tachycardia of hyperthyroidism is in part an expression of a general physiologic law.

The relationship between blood pressure and the basal metabolic rate has not been so extensively studied as that existing between pulse rate and basal metabolic rate. Only the difference between systolic and diastolic pressure or the pulse pressure will be considered at this time. Increase in pulse pressure accompanying elevated basal metabolic rate has been recorded by many observers, notably those of the Mayo Clinic. This association has been commented on by Boothby,[4] Beall [5] and others.

As a relation exists between basal metabolism, on the one hand, and the pulse rate and the pulse pressure, on the other, the question arises as to how exact and constant these relationships are, and with what precision one may estimate the basal metabolic rate from these other findings. An attempt to answer this question was made by applying the statistical method of study to a series of observations obtained under uniform conditions.

This series consists of 300 determinations made over a period of a year and a half. The data were obtained from three different sources, namely, the basal metabolic departments of St. Luke's Hospital, Stanford University Hospital and the San Francisco Hospital, a Sanborn-Benedict portable calorimeter being used in all three laboratories. About one half of the determinations were made by the writer, the others being made by four personally trained physicians serving first and second hospital years. Blood pressure readings were taken on all patients on whom a basal metabolic test was made, the reading being made in the resting interval between two ten minute breathing tests. Frequent records of the pulse rate were made throughout the breathing periods. Thus, the basal pulse rate and basal blood pressure were ascertained at the same time the basal metabolic rate was determined.

The only selection made of the material was elimination of all cases which showed changes in the pulse rate or blood pressure due to an obvious pathologic condition in the cardiovascular-renal system. The patients ranged in age from 15 to 55 years, blood pressure changes being so frequent in patients over 55 as to render sphygmomanometer readings of uncertain significance in this work. With the exception of young people with marked exophthalmic goiter, all patients showing basal systolic pressures of 160 or above are excluded on the basis that such hypertension is due in most instances to pathologic changes in the cardiovascular-renal system, and is not a physiologic response of the circulatory system to increased metabolism. There were also omitted from this series all thyrotoxic patients with auricular fibrillation or heart block. Electrocardiographic tracings were obtained in more than two thirds of the cases.

The data were arranged according to the basal metabolic rate into fourteen classes, the class intervals being made at each 10 per cent. change in the rate below or above the normal standard. Inspection of the accompanying table shows that the average pulse rate and pulse pressure readings tend to increase as the metabolic rate increases. Since averages show only tendencies, it is desirable to know the highest and lowest figures in the series, which are given in the table. These show a considerable range in most of the classes, produced, partially at least, by a few individuals who deviate in a significant manner from the general rule. Whereas most patients responded to an elevated metabolic rate with an increase in both pulse rate and pulse pressure, a few showed considerable increase in the one, with little or no change in the other.

PULSE RATE AND PULSE PRESSURE ARRANGED IN FOURTEEN CLASSES ACCORDING TO METABOLIC RATE

Basal Metabolic Rate, per Cent.	Number of Observations	Pulse Rate			Pulse Pressure		
		Average	Maximum	Minimum	Average	Maximum	Minimum
100 to 90.1	2	120	130	110	105	110	100
90 to 80.1	0	...	...	...	...	...	...
80 to 70.1	1	122	...	...	78	...	...
70 to 60.1	4	94	100	85	83	90	62
60 to 50.1	7	98	114	82	54	70	36
50 to 40.1	9	96	124	80	58	90	38
40 to 30.1	10	92	112	76	50	64	34
30 to 20.1	22	80	100	62	46	62	35
20 to 10.1	50	76	100	54	44	70	22
10 to 0.1	81	72	100	50	43	64	26
0 to —9.9	72	71	94	46	40	56	18
—10 to —19.9	31	66	82	48	36	54	20
—20 to —29.9	9	57	70	50	37	50	24
—30 to —39.9	2	72	88	56	29	36	22
Total......	300						
Coefficient of correlation..		0.69			0.62		

In discussing the relation of pulse rate and basal metabolic rate, Sturgis and Tompkins [2] say: "There are, however, many individual discrepancies. These occur particularly in a group of cases in which the metabolism is greatly elevated and the pulse rate relatively slow." An example from this series of a similar apparent discrepancy is Case 164, with a basal metabolic rate 30 per cent. above normal and a pulse rate of 70. The pulse pressure, however, was 62.

The trend of the average pulse rates and pulse pressures having been established, and it being noted that individual discrepancies in one were often accompanied by a discrepancy in the other but in the opposite direction, the problem then presented itself of combining these two in such a manner as to smooth out the apparent discrepancies. There are various means of combining these two values, but the one which seemed to present the greatest advantages was that which utilized the quantitative measure of relationship, between the basal metabolism, on the one hand, and the pulse rate and pulse pressure, on the other. I therefore computed the coefficients of correlation between these various factors, utilizing standard statistical methods. This coefficient is calculated on the basis of unity representing perfect correlation. The accepted methods of handling such statistical data were applied, and it was learned that the coefficient of correlation for pulse rate and basal metabolic rate was 0.69; for pulse pressure and metabolic rate it was 0.62. For obvious reasons already commented on, the coefficient for pulse rate and pulse pressure was much lower, namely, 0.43.

Quantitative measure of the degree of correlation between pulse rate, pulse pressure and basal metabolic rate having been obtained, it becomes possible, by application of statistical methods, to derive a multiple prediction formula by which the basal metabolic rate may be estimated from the known basal pulse rate and pulse pressure. This formula is: B. M. R. = 0.683 (P. R. + 0.9 P. P.) — 71.5. An idea of the accuracy of predictions based on this formula is essential before it can be used intelligently and with full knowledge of its limitations. This is represented graphically by the accompanying chart, on which the 300 observations of this series are represented as dots in relation to the line calculated from the formula. The lighter, parallel lines delimit areas within which observed rates deviate less than 10 and 20 per cent. from the calculated rate. From this the formula appears to predict the basal metabolic rate within 20 per cent. of the observed rate in 91 per cent. of the cases, and within 10 per cent. in 60 per cent. of the cases. Great accuracy of prediction is difficult to attain because of the individual variation of pulse pressure and particularly pulse rate which occurs even in health.

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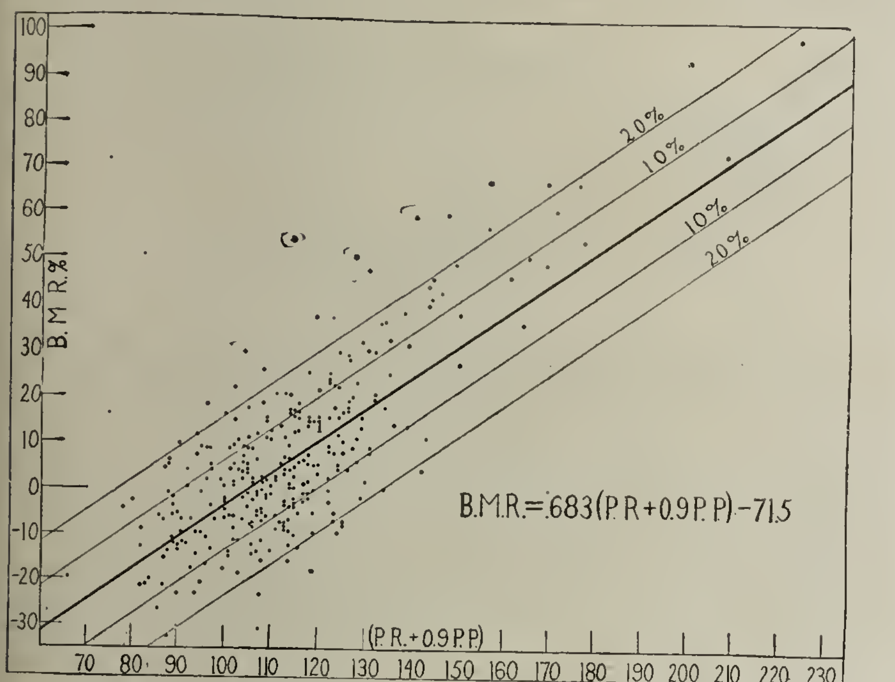
[3] Peterson, Anne, and Walter, Will: Basal Metabolism and Ideal Weight and Pulse Ratios as Shown by the Findings in More Than Twenty-Five Hundred Observations on about Twelve Hundred Subjects: A Preliminary Report, J. A. M. A. **78**: 341 (Feb. 4) 1922.

[4] Boothby, W. M.: Adenoma of the Thyroid with Hyperthyroidism (Toxic Adenoma); History of the Recognition of This Disease as a Clinical Entity; A Study of the Symptomatology with Basal Metabolic Rates, Endocrinology **5**: 1 (Jan.) 1921.

[5] Beall, C. A.: Basal Metabolism in Borderline Cases, J. A. M. A. **76**: 1639 (June 11) 1921.

Throughout this study it has been assumed that the relationship of pulse rate and pulse pressure to basal metabolic rate is a linear one. Such an assumption seemed justified by the data, though the possibility that a curved line might express the relationship equally well is not forgotten.



The dark line represents the prediction formula B. M. R. = 0.683 (P. R. + 0.9 P. P.) — 71.5. The dots represent the 300 observations from which the formula was derived. The first and second light lines parallel to and on both sides of the line of the formula are 10 and 20 per cent. lines, respectively.

Aside from any value they may possess in prediction of the metabolic rate, the basal pulse rate and pulse pressure have greater usefulness and may be utilized with more accuracy in following hypothyroid and hyperthyroid patients under treatment. In individual cases the variations in these measures at different times are significant, provided always they are obtained under basal conditions. Their usefulness could be enhanced by first determining them simultaneously with the basal oxygen consumption. By thus establishing their relationship to the basal metabolic rate at one observation, future estimations of the basal metabolic rate of that individual could be determined by ascertaining the basal pulse rate and pulse pressure.

CONCLUSIONS

The pulse pressure and pulse rate vary in the same direction as the basal metabolic rate. Most individuals respond to variations in the metabolic rate with proportionate changes in both pulse rate and pulse pressure; a few show disproportionate changes in the one with little or no change in the other. A combination of the two gives a better measure of the circulatory system's response to variations in metabolic rate than either one alone. Basal pulse rate and pulse pressure combined can be used clinically as a guide to ascertain the direction and estimate roughly the amount of change in the basal metabolic rates of patients under treatment for hypothyroidism and hyperthyroidism.

1183 Flood Building.

ABSTRACT OF DISCUSSION

DR. WALTER M. BOOTHBY, Rochester, Minn.: There is no doubt that there is a correlation between the pulse rate and pulse pressure with the basal metabolic rate as worked out by Dr. Read. The correlation, on the whole, will be of considerable advantage if used in conjunction with basal metabolism determinations. It will be of much less value in determining the original basal metabolism or the determination of that in a patient. Dr. Read gives a correlation roughly of between plus and minus 10 per cent. of successful prediction in 60 per cent. of the cases. I have tried several series, as a rule, and in from 60 to 70 per cent. the guess comes within ten points of the basal metabolism rate. The point is that, using the pulse rate, the pulse pressure and the general impression of the patient, after seeing a large number of records of basal metabolism rates, one becomes able to interpret the basal metabolic rate readily in the same way that an expert clinician can guess the temperature in 80 per cent. of the cases. Just as we do not require the temperature taken regularly on all patients, neither do we need the basal metabolism rate taken on a large number because it can be estimated with accuracy. Mistakes will, however, be made in the borderline cases, in which it is of greatest importance not to make such mistakes.

DR. J. MARION READ, San Francisco: What Dr. Boothby says is quite true. It is often possible to guess the basal metabolic rate with a fair degree of accuracy after one has had a fair amount of experience with determinations. Most of us, as the general practitioner, have not had the experience that the house officers at the Mayo Clinic have had. I believe that the pulse rate and the pulse pressure can be fairly well determined by most practitioners, and I think that they can be utilized as an aid by men who wish to guess the basal metabolic rate. An advantage of using those two measures of the circulatory system is that they can be done every morning if this should be necessary, without the disturbance to the patient which necessarily follows any determination of the metabolic rate.

Two Years' Work in Mouth Hygiene.—According to a report in *Health News*, April, 1922, the board of education and the health department of New York City, in 1919, gave permission to the Association for the Improvement of the Condition of the Poor to carry on an intensive program in mouth hygiene for the schoolchildren of a particular district. Up to July, 1921, a total of 3,911 children were treated, and for 38 per cent. of these the work was completed. The children were divided into three groups: those who had one cleaning, those who had two cleanings and those who had three or more cleanings. There was a steady decline with each cleaning in the number of cavities found and an increase in the number of children with no cavities. On the first cleaning, only 5 per cent. of the children had no cavities, while 42 per cent. had no cavities on the third cleaning. Records of the time consumed and the cost of the work in the district were kept over sufficiently long periods to enable the association to compute the per capita time consumed in, and the cost of, the various operations. Estimated on 6,369 permanent and 1,108 temporary teeth, the average cost for a complete filling is 70 cents. Estimated on a basis of 3,136 children, the average cost per child of the complete dental program is $4.13.

Clinical Notes, Suggestions, and New Instruments

THE PROJECTION OF ROENTGENOGRAMS *

O. V. Batson, M.D., Cincinnati

The desirability of using the original roentgenogram for the purpose of projection is generally recognized. Recently Dr. Norval H. Pierce[1] described his method of cutting mastoid pictures to the size of lantern slides and then projecting as usual.

Any of the projection instruments permitting the use of transparencies in the horizontal position afford a most satisfactory method. The size and expense of this type of instrument limit its application, but when available it leaves little to be desired. I have used for some time the "universal projection apparatus" made by Leitz for this purpose. This apparatus has a horizontal condenser of sufficient size to cover the essential parts of anteroposterior or lateral views of the head. The large water cell prevents the heating of the roentgenogram during prolonged demonstration or study.

An additional advantage is the fact that any size plate or film may be used without mutilation; the operator moves the negative about to show the desired portion. No holder is required, for the negative lies flat.

Another method, not quite so satisfactory, is to use a photographic enlarging apparatus. The illumination is not so brilliant, and a special vertical holder is required. The usual instruments accommodate a plate or film 5 by 7 inches or smaller. Neither of the foregoing methods introduces anything essentially new in projection, and possibly they are in use by others at present.

AN UNUSUAL GUNSHOT WOUND OF THE INFERIOR VENA CAVA †

W. M. Sheppe, M.D., Charlottesville, Va.

Mr. S. received an accidental gunshot wound of the abdomen, the bullet, fired from a 0.38 caliber pistol, entering the abdominal wall in the midline about 1 inch (2.5 cm.) above the umbilicus. The patient was transported over 15 miles of rough country road to the university hospital. Laparotomy disclosed a moderate intra-abdominal hemorrhage; several perforations in the small intestine, and a nick in the wall of the stomach near the pylorus. The wounds were closed, the injury to the intestine being so extensive that a resection with lateral anastomosis was necessary. A rapid palpation of the abdominal cavity was made to determine the resting place of the bullet. It was found lying in front of the vertebral column, just above the lumbosacral prominence. As the surgeon attempted to grasp the bullet, it escaped from his fingers and disappeared. A massive hemorrhage which filled the lower abdomen ensued. The source of hemorrhage was a hole in the anterior wall of the vena cava, just above its point of bifurcation. The opening was temporarily closed, but the bullet was not again discovered. The patient reacted well following the operation, but died several days later. Careful auscultation before death failed to disclose any signs of cardiac dysfunction.

Necropsy disclosed an acute generalized peritonitis. There was a jagged opening in the anterior wall of the inferior vena cava, just above its point of bifurcation. The hole was about 1 by 2 cm., and was closed by a large thrombus. The absence of blood in the peritoneal cavity evidenced the fact that the closure of the cava had been successful and that no postoperative hemorrhage had occurred. The bullet was found lying in the right ventricular cavity near the apex of the heart. It was partially covered by a heavy deposit of fibrin, which served to fix it firmly in position. The tricuspid valve leaflets were not injured. An infectious infarct was found in the apex of the right lung. The cause of death was acute generalized peritonitis, associated with acute anemia.

SUMMARY

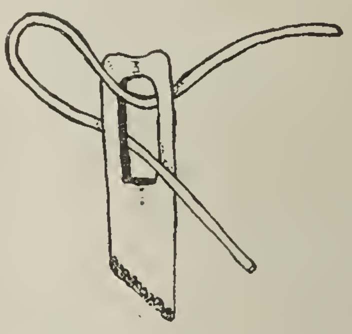
The case is of interest from several standpoints:

1. No signs of the presence of the bullet in the heart were obtained by auscultation.
2. The bullet, at the end of its circuitous course through the abdomen, barely perforated the wall of the inferior vena cava, remaining in that position and effectually controlling what would have been, without doubt, a fatal hemorrhage. Furthermore, it was not displaced from its precarious lodgment in a 15 mile drive over a rough road.
3. When the bullet eluded the surgeon's grasp, it fell back into the inferior vena cava and traveled along that vessel until it reached the heart, where, passing through the tricuspid valve, it became permanently lodged against the right ventricular wall.

A METHOD OF THREADING WITH SILKWORM GUT

Maxwell Quackenbos, M.D., New York

In the employment of silkworm-gut sutures for the apposition of skin surfaces, it is disconcerting to have the needle, after transversing one or more layers of the abdominal wall, emerge without the suture. Apart from the annoyance of such an incident, the actual time factor in the operation is prolonged by the required handling of the suture material.



Method of threading needle.

In the illustration, a method of threading particularly applicable to silkworm gut is diagrammatically shown which will avoid the occurrence of the aforesaid incident.

The eye of the needle is threaded in a spiral, or "rethreaded," and the suture in situ is drawn tight. Artery forceps may then be placed near the termination of the long end of the suture, and the entire tool safely passed fixed in a needle holder. To remove the needle, the suture is firmly grasped adjacent to its point of exit, and sudden traction made on the needle in an upward direction. If the needle is not threaded in a spiral, traction will tend to lock the suture. The spiral thread is superior to the usual single thread and twisting. The method is not new: I first saw it used in foreign hospitals.

A CASE OF WOUND DIPHTHERIA *

B. L. Arms, M.D., and Pearl Griffith, B.E., Jacksonville, Fla.

While cases of wound diphtheria occur occasionally, it is believed that this case is of sufficient interest to report.

March 22, we received swabs, sent by Dr. Joseph Halton, of Sarasota, Fla., from the throat of a patient, together with swabs from the abdominal incision four weeks after treatment. Direct examination of the swabs from both the throat and the abdominal incision revealed typical diphtheria bacilli, and the cultures from each were of the A, A′ and C types by the Westbrook classification. We reported a positive culture from the throat, and organisms that were morphologically diphtheria from the abdominal incision; but we desired to test them further before giving the final diagnosis.

Both cultures were then streaked out and isolations made, transplants were made in broth, and pigs were inoculated, 0.5 per cent. of the body weight being used. We used one strain from the throat and two strains from the abdominal culture, inoculating subcutaneously on one side of the abdomen for the test. Controls were also inoculated at the same time; but these received antitoxin immediately on the opposite side of the abdomen.

The three test pigs were found dead the second morning after the inoculation, and cultures from the site of the injection showed typical diphtheria bacilli from each of the pigs, while the pigs protected with antitoxin have shown no con-

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* From the Anatomy Department, University of Cincinnati College of Medicine.

[1] Pierce, N. H.: An Original Method for Lantern Slide Projection of Roentgen-Ray Films of the Mastoid, J. A. M. A. 78: 1539 (May 20) 1922.

† From the University of Virginia Department of Medicine.

* From the Laboratory of the Florida State Board of Health.

stitutional symptoms, although there was a local reaction, and in one instance a small slough.

The report was then made and the clinical side of the case requested, which Dr. Halton kindly furnished.

CLINICAL FEATURES

A woman, aged 54, schoolteacher from New York, began flowing in November, 1919, and had intermittent periods of bleeding, which were treated chiefly by ovarian extracts for seven months. A diagnostic curettage, Feb. 1, 1922, led to a diagnosis of adenocarcinoma from the scraping. February 17, a hysterectomy was performed at a hospital in a nearby city. When the wall was closed, four strands of silkworm gut were left in the lower end of the incision for drainage. Recovery was uneventful. Drainage left a hole about the size of a silver dollar. The patient left the hospital about four weeks after the operation, Dr. Halton seeing her the evening before she left.

Four days later he was called to her home and found a "nasty hole in the abdomen covered with white membranes," which looked to him to be diphtheritic. Examination of the throat disclosed a membrane on the right tonsil. He immediately had the patient removed to his hospital, took swabs, and without waiting for reply gave 10,000 units of antitoxin, repeating the dosage during the next two days. "The result was like magic. The membranes disappeared and the infected hole healed rapidly."

Special Article

"THE WILL TO BELIEVE"

JOSEPH JASTROW
Professor of Psychology, University of Wisconsin
MADISON, WIS.

Extraordinary Development of Tactile and Olfactory Senses Compensatory for the Loss of Sight and Hearing

Dr. T. J. Williams reported the case of Willetta Huggins, 17 years of age, blind and deaf, an inmate of the Wisconsin School for the Blind, and exhibited the patient. Miss Huggins gave some remarkable demonstrations in naming colors by the sense of smell. For instance, a skein of wool composed of different colors was handed to her and she named the colors correctly by passing the skein of wool before her nose as dark blue, yellow, pink, green, blue, fiery red, brown and white.

A bunch of paper flowers (colored) was handed to her and she named the colors correctly as white, yellow, pink, lavender, purple, red, tomato red, and yellow. She was handed a small blotter used by the official stenographer, one side of which had a pink color, and the other side was white, with a blue border. Miss Huggins named correctly the colors on this blotter. One end of a wooden pole, about 12 feet long, was placed on top of Dr. Robert H. Babcock's head, while Miss Huggins took hold of the other end, and repeated every word Dr. Babcock said to her correctly. By the sense of touch she told the denominations on a one dollar bill, a ten dollar bill, a twenty dollar bill, and a one hundred dollar bill correctly.

Dr. Robert H. Babcock said he knew of the case of a boy in Philadelphia, totally blind, who, if led along a path, four feet distant from trees, could count every tree he passed. He said that blind people develop a peculiar facial sensation which enables them to tell when they approach an object, whether it was a human being or anything else.—*Official Bulletin of the Chicago Medical Society* **21:**29 (June 3) 1922.

[Note.—Because of the interest aroused by this case when it was presented before the Chicago Medical Society, and knowing that Professor Jastrow had had opportunity to examine the patient, The Journal asked him to comment on the demonstration.—Ed.]

THE CASE OF WILLETTA HUGGINS

The demonstration before the Chicago Medical Society of a young girl presumed to present unusual types of sense perception, and the impression made upon men of the medical profession that there was solid ground for such conclusions, justify the present statement. The claim was put forward that this girl is able to tell colors by the sense of smell and is further able to understand spoken language, provided there is a connection between her fingers and the head or larynx of the speaker, either directly or through the medium of a wooden rod. This claim means that she possesses so acute a vibratory sense through tactile organs as to distinguish the very minute differences in vibration involved in the distinction of spoken sounds. Additional performances urged the further claim that she could read with her fingers large headlines in newspaper print.

THE WILL TO BELIEVE

Cases of this kind belong to a well recognized group of phenomena known to recent generations and even in part to ancient times. The reason why such claims find ready acceptance among critical and even psychologically trained individuals lies in the prepossession in favor of such beliefs. It is, in brief, one more example of "the will to believe." Against this popular prepossession, it may be stated emphatically that psychology has been unable to recognize the existence of such powers. Furthermore, it is extremely difficult to explain on biologic principles how capacities of this kind could be carried forward in the evolutionary processes and remain dormant except under unusual conditions. The present case involves also the further idea that those deprived of the use of one sense find compensation in the development of another. In terms of refined training and minute attention to sense indications that would ordinarily be overlooked, the last statement is endorsed by psychology. Toward the existence of such senses as Miss Huggins maintains, the attitude of psychologists is just as negative as for the general claim of unusual senses, such as "smelling" colors.

Such claims are connected in the remote and the near history with the ability to read the mind or thoughts of others, and with the possession of powers of access to personal details that could not come through the ordinary channels of sense. The best recognized instances of this order are generally described as telepathic, or clairvoyant, without definite reference to the type of sense impression by which such information is conveyed. Still more popularly are such persons spoken of as being "psychic." Such claims equally remain unrecognized by psychologists. In this instance I can speak by the right of statistics, for only from 3 to 5 per cent. of the psychologists to whom I addressed a circular were inclined to give a limited adherence to such an hypothesis. The 95 per cent. or more were decidedly against such a supposition Strictly speaking, to say that a mind is "psychic" has about as much meaning as to say that one's body is anatomic. Unquestionably we have not exhausted the range of sense perception, nor have we penetrated all the mysteries of communication of mind to mind. But with the most generous allowance for such possibilities, it still is the duty of psychologists to oppose vigorously the popular notions through which the ready acceptance of stories of unusual senses results.

THE EVIDENTIAL STAGE

The next stage of the inquiry is the evidential one. Miss Huggins goes through some tests which are interpreted to mean that she possesses unusual senses. Such tests require minute technical examination. The history of this, as of other cases, shows most clearly that everything depends on the absolute rigidity of the tests, leaving no loophole for a resort to supernormal hypotheses by a hasty conclusion that ordinary senses are insufficient to account for what is done. So interested are people at large in the possibilities of rare performances of sense powers or thought transference that such exhibitions have become a recognized part of the performance of the vaudeville stage. That craft which is represented by the Society of American Magicians furnishes most interesting proof of the possibilities of intentional and clever deception. There are any number of "mind-reading" performances that would baffle even the power of a well informed amateur to fathom the procedure. Naturally, these performers are frequently willing to be accredited with supernatural powers; but the more recent books that expose the mode of operation offer an amazing proof of the extreme ingenuity which has been expended on the creation of such mysteries. If we had the same tendency to credit stage performers with unusual senses as we have to ascribe them to the blind and deaf, we should find as strong evidence for the conclusion in their case as in the case of Willetta Huggins. On the other hand, the medical interest is centered upon the other side of the problem of deception, and in a measure so also is the psychologic interest. This begins with the hysterical type of self-deception and expands to all sorts of mixtures of belief and half belief, and a consent to believe quite akin to a delusion.

RECOGNITION OF COLORS THROUGH A REMNANT OF VISION

With this background of consideration, we approach the case of Willetta Huggins with the decks clear for the simplification of the problem. In all such cases, as in the tricks of the stage, it is the first step that counts. The same holds true of the investigations of "psychic" mysteries. The uncritical observer rushes to the conclusion that fraud has been excluded, and in the present case we may readily consent that the possibilities of any intentional deception in the usual sense may be dismissed. The reason why Miss Huggins is accredited with these unusual senses is through the conviction that her sight and hearing are useless. My own opportunity to examine Miss Huggins was limited, but was entirely sufficient to convince me that vision of colors was due to the remnant of sight which she retains. In bringing objects to her nose as if to smell them, she has them near enough to her eyes to see them through the slit of vision that she has. I base this conclusion not only on the extreme rapidity with which she recognized such objects, but on a variety of confirming tests. In the first place, the possibility of smelling colors meets the consideration that the dye used is very different for wool, silk or cotton, and that such minute differences are entirely beyond the sense of smell. There is an early observation that the girl distinguished between zinnias that were white and those that were striped red and white, a distinction far beyond the possibility of olfactory sources but very easy to vision. Moreover, her recognition with the blindfold indicated that she sees under the blindfold as do so many performers. A professional "mind-reader" called on me and showed me how, with the most careful blindfold, he is still able to play billiards and whist, by looking down beneath the blindfold. He admitted that he always ran the danger of meeting some one who knew how to apply a blindfold, in which case he could do nothing. In the case of Willetta Huggins, when a blindfold was applied closely under her eyes she was totally unable to distinguish colors. Another method was to test her in a completely dark room. The notes before me show that Miss Huggins, when tested in the dark room while an ordinary light was on, sorted colors quite correctly though slowly; but with the light extinguished she was unable to do anything at all. I do not indicate that these tests are absolutely conclusive, but cite them to show where the presumption lies. Of course, in every practical sense this girl is blind and has no central vision whatever; but the possibility of a slit-wise vision is by no means excluded.

HYSTERICAL DEAFNESS

When we come to the matter of hearing, the situation is far more complicated; medical men know as well as psychologists how difficult it is to muffle the sense of hearing. But they also know that there is an enormous difference between enough hearing to detect the *presence* of sounds and even to make coarse distinctions, and the very difficult recognition of sounds in order to *understand the meaning*. We all know that the telephone, however serviceable when we are speaking a familiar language, completely fails in the matter of proper names which are unfamiliar and unusual. Usually these have to be spelled out in order that one may understand them correctly. The further fact, that it is almost impossible to eliminate sound by any muffling device and that a very low sound clearly enunciated carries complete meaning, will clarify the problem. The very supposition that vibrations so minute as these could be carried through the finger tips taxes one's credulity. I prepared a pair of mufflers by means of modeling wax and sand bags in order to determine whether the reduction of the intensity of the sound would affect the girl's understanding. I found that it did not, from which fact those who would favor the hypothesis of a vibrational sense, instantly concluded that hearing was excluded by this evidence. But with my ears muffled in the same way, I was able to hear words from 8 to 12 feet distant and spoken in a tone of voice hardly above a whisper.

Those acquainted with the phenomena of hysterical deafness will realize how difficult it is to determine the actual status of this sense. It would take far more careful experiments than have yet been made to decide whether this is a case of hysterical deception, or whether other factors are involved. This would mean that the girl deceives herself in the belief that the vibrations conveyed through her finger tips make her hear the sounds which really reach her through auditory channels. But the psychologic laboratory possesses a technic sufficient to determine the matter, if the subject is willing to conform to the tests. There is also the fact that when, unknown to the subject, the rod that is regarded as essential to carry the vibrations was actually not in contact with the speaker's head, she replied to questions quite as well as though the contact had been established.

NATURE OF THIS PERFORMANCE

The purpose of the present statement is to place medical men on their guard in accepting conclusions of this order, and to call their attention to the technical requirements of a really rigid test. I have the further purpose of indicating emphatically that the tendency to believe in such powers is primarily responsible for the neglect of such technical considerations. Once it is assumed that fraud is excluded, naturally the "telepathic" and supernormal hypotheses are credited.

Similarly, when it is concluded on insufficient evidence that this girl has no sight or hearing left, the performance is credited to the existence of unusual senses. Such conclusions take their form from prevalent beliefs. It is interesting to go back nearly a hundred years when a boy in Nuremberg, Kaspar Hauser, was supposed to have unusual senses, particularly the sense of magnetism. He felt the presence of metals, and to pass a hardware shop might bring on a convulsion. We know of the hypnotic clinics in Paris early in the nineteenth century where there were a group of subjects who could hear only when contact was made with the abdomen; another group professed to see through a mysterious sense that would today perhaps be described as a human roentgen ray penetrating opaque objects. Just as soon as the tendency to believe in these hypotheses fell away, the performances ceased. In many cases these were due to hysterical self-deception. Surely the lessons of the past are sufficient to indicate that this performance is of a similar origin and nature.

MOTIVE

Without in any sense closing the case I believe it important to bring these considerations to the attention of physicians, whose verdict will naturally be of large importance in such cases. The question of motive in such performances is a delicate one. We all know that the dramatic interest sustains them and that this readily reaches the sensational level. The journalistic sense delights in tales of this kind and gives them wide circulation, while the negative or critical opinion is likely to be received as an example of undue skepticism. I shall not attempt to diagnose these factors in the present case. I shall, however, cite from a letter of a blind girl who, despite her handicap, has made her way through college and who writes:

> I am sure that there are very few blind people who think that they are the possessors of any unusual powers whatever; though I do know a great many sighted persons who cherish this delusion; and as there are among the blind as among the sighted a certain proportion whose intelligence and self-control is not of the highest, it is not altogether surprising that when their sighted friends hold these fancies to be true that these, at least some of these, highly suggestible blind persons should become victims, more or less, themselves of the same prepossessions.

The awkward question cannot be avoided as to whether intentional deception encroaches upon the self-deception on the part of the performer in this instance. As Janet has so well shown, the boundary line between deception and self-deception is so uncertain that one may use the veil of charity and make it cover whatever faults it may. That, however, there must be a point in connection with these performances in which the uncertain boundary line is readily passed, will be obvious to all. There is enough evidence of a hysterical disposition to make it certain that the verdict in this case cannot be readily reached. My purpose will be accomplished if this statement is accepted as a warning and an appeal to the medical profession to view such cases in the light of the well-known facts of psychology and the history of similar cases in the past.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

NEUTRAL ACRIFLAVINE-HEYL.—Acriflavina Neutra.—The base, 3:6 diamino-10 methylchloracridine, $C_{14}H_{14}N_3Cl + H_2O$, containing about 1.5 per cent. of sodium chloride as a stabilizer.

Actions, Uses and Dosage.—Neutral acriflavine-Heyl has the actions and uses of acriflavine (See Acriflavine and Proflavine, New and Nonofficial Remedies, 1922, p. 25), but being neutral in reaction is claimed not to have the smarting and irritating effect of acriflavine solutions.

Manufactured by The National Aniline and Chemical Co., New York, under U. S. patent 1,005,176 (Oct. 10, 1911; expires 1928) by license of the Chemical Foundation, Inc. No U. S. trademark.

Tablets Neutral Acriflavine-Heyl 0.1 Gm. (1½ *grains*).

Neutral Acriflavine-Heyl Throat Tablets: Each contains neutral acriflavine-Heyl 0.006 Gm., menthol 0.0006 Gm. and sodium chloride 0.0006 Gm.

Neutral Acriflavine-Heyl "Pro Injectione" 0.5 Gm. vials.

Neutral Acriflavine-Heyl "Pro Injectione" 1.0 Gm. vials.

Neutral Acriflavine-Heyl is a brownish-red, odorless, granular powder. It is soluble in less than 2 parts of water, forming a brownish-red solution which fluoresces on dilution and which has a bitter taste; also soluble in alcohol and ether, chloroform and the fixed and volatile oils.

An aqueous solution of neutral acriflavine-Heyl (1: 100) is neutral to congo paper.

Neutral acriflavine melts at not below 90 C.

Add a few drops of hydrochloric acid to an aqueous solution of neutral acriflavine which is sufficiently dilute to be fluorescent. The fluorescence disappears, but partially reappears on further dilution with water.

Add 2 drops of sulphuric acid to about 1 Cc. of an aqueous solution of neutral acriflavine-Heyl (1:250) and agitate the mixture. No precipitate is produced (*distinction from acriflavine*).

To 10 Cc. of an aqueous solution of neutral acriflavine-Heyl (1:1,000) add 5 Cc. of diluted sulphuric acid, mix well and immerse in a bath of cracked ice. The deep red solution becomes dim, but no crystalline precipitate forms and the solution does not become colorless or nearly so (*distinction from acriflavine*).

An aqueous solution of neutral acriflavine-Heyl (1:250) gives a precipitate with silver nitrate solution (*distinction from proflavine*).

An aqueous solution of neutral acriflavine-Heyl (1:250) does not give a precipitate with barium chloride solution (*distinction from proflavine*).

An aqueous solution of neutral acriflavine-Heyl (1:250) does not give a precipitate with formaldehyde solution (*distinction from proflavine, which gives a brown precipitate*).

Add 2 drops of diluted hydrochloric acid to 5 Cc. of an aqueous solution of neutral acriflavine-Heyl (1:250) and immediately add 2 drops of sodium nitrite solution (1:10). A violet color is produced. By the further addition of an excess of sodium nitrite solution, a violet precipitate is formed and, after a few minutes, the color of the solution becomes cherry-red. This may be best observed after filtration (*distinction from proflavine, the filtrate from which is colorless*).

An aqueous solution of neutral acriflavine-Heyl (1:250) gives an orange precipitate with sodium hydroxide test solution (*distinction from proflavine, which gives a yellow precipitate*).

Incinerate at a low temperature about 1 Gm. of neutral acriflavine-Heyl, accurately weighed. The ash amounts to not more than 2.5 per cent. About 60 per cent. of the ash is sodium chloride.

Dissolve about 1 Gm. of neutral acriflavine-Heyl, accurately weighed, in 250 Cc. of warm water, collect the insoluble matter, if any, in a weighed Gooch crucible, wash the insoluble matter with hot water, dry and weigh the residue. The insoluble matter amounts to not more than 0.5 per cent.

Dry about 1 Gm. of neutral acriflavine-Heyl, accurately weighed, to constant weight at 100 C. The substance loses not more than 10 per cent. of its weight.

LUMINAL (See New and Nonofficial Remedies, 1922, p. 60).

The following dosage form has been accepted:

Luminal Tablets ¼ grain.

PROCAINE (See New and Nonofficial Remedies, 1922, p. 35).

Ven Sterile Solution Procaine 0.5 per cent.: Each ampule contains 1 Cc. of a 0.5 per cent. solution of procaine-N. N. R.

Prepared by the Intra Products Co., Denver.

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Prepared by the Intra Products Co., Denver.

DIPHTHERIA ANTITOXIN, CONCENTRATED (See New and Nonofficial Remedies, 1922, p. 280).

Parke, Davis & Company, Detroit.

Diphtheria Antitoxin (Concentrated Antidiphtheric Serum Globulin).—Marketed in piston syringe containers, containing, respectively, 1,000, 3,000, 5,000, 10,000 and 20,000 units.

TETANUS ANTITOXIN, CONCENTRATED (See New and Nonofficial Remedies, 1922, p. 281).

Parke, Davis & Company, Detroit.

Antitetanic Serum (see New and Nonofficial Remedies, 1922, p. 282). Also marketed in piston syringe containers, containing, respectively, 3,000, 5,000 and 10,000 units.

ANTIGONOCOCCUS SERUM (See New and Nonofficial Remedies, 1922, p. 285).

Parke, Davis & Company, Detroit.

Antigonococcic Serum (see New and Nonofficial Remedies, 1922, p. 285). Also marketed in bulbs, containing 12 Cc.

ANTISTREPTOCOCCUS SERUM (See New and Nonofficial Remedies, 1922, p. 288).

Parke, Davis & Company, Detroit.

Antistreptococcic Serum (see New and Nonofficial Remedies, 1922, p. 289). Also marketed in piston syringe containers, containing, respectively, 20 Cc. and 50 Cc.

General Practitioner Is Keystone of Preventive Medicine.—Preventive medicine has been eloquently preached during recent years, but nearly always as something in the abstract. But until the great force hitherto little used in this direction namely, the general practitioner of medicine, is made use of, we will fail to make the progress that we ought to make with preventive medicine in the concrete, for he, of all others, is the individual who enters into close relationship with people. —Sir Napier Burnett, *Nation's Health* 4:192 (April) 1922.

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SATURDAY, JUNE 17, 1922

RELATIVE SECURITY AFFORDED BY BACTERIAL CONTROL OF MILK SUPPLIES AND BY MILK PASTEURIZATION

A particularly instructive milk-borne epidemic of typhoid has recently been reported from the post laboratory at Fort McPherson, Ga.[1] Although a large number of cases was not involved, and although the actual mode of contamination of the milk presents no especially novel features, the accessory circumstances are highly illuminating.

The main milk supply for the post of Fort McPherson was obtained at the time of this outbreak from a single large dairy. Pasteurization of the milk was carried out in Atlanta according to methods specified by the post laboratory. This pasteurized supply had been in use for a period of more than three years, during which time no sign of illness was traced to it. In the summer of 1921, a number of families connected with the fort discontinued the use of the pasteurized milk and purchased milk from a number of small milk dealers, the chief reasons apparently being objection to the taste of the pasteurized milk and the fact that the pasteurized milk had to be sent for while the other was delivered at the door. The small milk dealers found that they could dispose of their milk more readily if they could exhibit a laboratory report, and accordingly submitted samples of the milk to the laboratory about twice each week. In October, 1921, typhoid fever appeared in the family of one of the dealers delivering unpasteurized milk, and the use of this contaminated milk led to the occurrence of nine cases of typhoid among the consumers.

It is highly interesting that the bacterial examination of the milk samples, both pasteurized and unpasteurized, was conducted in the post laboratory during the summer and autumn of 1921 covering the period of infectivity of the raw milk. The results show that the colony count of the milk supplied by the small dealers was very low, averaging between 2,000 and 5,000 per cubic centimeter, even during the summer months. This was somewhat lower than the count obtained from the pasteurized milk supply, which averaged about 10,000.

This is perhaps the first instance on record in which, during a period of typhoid infection, routine bacterial examinations have been made of pasteurized and unpasteurized milk samples, at a time when both kinds of milk were being supplied to a small and fully controlled body of consumers. Although the epidemiologic study shows convincingly the presence of typhoid bacilli in the raw milk during the period of observation, the colony count seemingly gave no indication of danger. The pasteurized milk, on the other hand, which gave a somewhat higher colony count than the dangerously contaminated raw milk, was demonstrably not a source of typhoid.

Although it is often stated that the bacterial count is the best single index we have of the general sanitary character of milk, it is plain that important exceptions must be made. A relatively fresh raw milk of low bacterial content may be dangerously contaminated with typhoid bacilli, while a pasteurized milk with larger total numbers of bacteria may contain no disease-producing bacteria and be quite safe for use. The clearly described outbreak at Fort McPherson emphasizes once more the importance of sanitary control of the dairy and its surroundings, and especially of medical inspection of the milk handlers and their families, and also affords a convincing instance of the advantage of pasteurization.

The history of this outbreak shows, further, the protective value of typhoid vaccination. Among seventy-six persons protected by antityphoid inoculation there was only one case of typhoid, while among eighty-four not protected there were eight cases. Both groups were living under fairly similar conditions, and appear to have been equally exposed.

HEALTH EDUCATION AND STANDARDS OF GROWTH

The American people is peculiarly susceptible to the driving influence of cleverly worded slogans. When we are told, day after day, to "swat the fly," our surplus energies promptly find an outlet in the pursuit of the pesky insect. And similarly, when the nation is admonished that "fat is fuel for fighters" and that "food will win the war," there is no delay in initiating a program to secure the desired ends. In recent years the more intelligent members of many communities have been reminded through a variety of semiofficial or "expert" utterances that "public health is purchasable." When the propaganda to secure greater national vitality and personal welfare is coupled with the dictum to "save the children," the appeal is always certain to awaken widespread enthusiasm and willingness to serve a worthy cause. Thus the health education movement has arisen and the problems of the nutrition and growth of American schoolchildren have been given unusual prominence. The organization of a powerful, representative National Child Welfare Council to act as a sort of clearing house for many of the newer organizations devoted to child betterment testifies to the interest in the project and the determination of its promoters.

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[1] Cooper, A. T.; Curtis, N. F., and Skelton, R.: Mil. Surgeon **50**: 283, 1922.

At the outset of all the various undertakings to explore the possibilities of improving the physical development among children of school age, the difficulty of adopting a suitable norm or standard of adequate nutrition has inevitably arisen. Emerson[1] has recently pointed out that the tables in general use in the past have been taken as the basis on which to compute normal weight. But the attempt to apply this weight for age standard leads to practical difficulties at once because of the great variation among children of the same age. It also tends to discourage many who find the average weight for their age far beyond their reach. The basis of height for age is even more perplexing because of the large number of children who are above the average height for their years. Consequently, Emerson and many others have adopted the basis of weight for height as an accurate measure of the condition of undernourished children. This decision is supposed to rest on a physiologic principle that "a body of a certain height requires certain weight to sustain it, and the most significant test of a child's physical condition is the relation between his weight and his height."

Whether such somewhat arbitrary standards of judgment are of widespread application, and what their limitations may be under the varied exigencies of either national life or personal circumstances, remains to be seen. One of the most serious pioneer efforts to carry the "nutrition class" program to its logical conclusion in the public schools of New York in 1919-1920 has led to the discovery of new problems. These are frankly admitted in a report recently issued by the bureau of educational experiments.[2] The investigators, Hunt, Johnson and Lincoln, admitting that the detailed study of growth in height and weight has been clarifying, assert that the need of a considerable amount of research in respect to standards of growth, and in respect to causal factors, has been made apparent.

The possible necessity of making allowances for unusual tendencies of certain racial stocks to promote seemingly large variations in stature has already come clearly into prominence. An illustration of other possibilities for misinterpretation is afforded by numerous recent studies of the condition of European children suffering from the growth-retarding influences of unfavorable food conditions in the Central Empires during and after the war. Here, unfortunately, experiments are being conducted by Nature on an enormous scale, and we should profit by the lessons of their untoward results. Recent measurements of large numbers of children of school age who have been realimented under institutional conditions in Berlin[3] have shown that satisfactory gains in weight after prolonged undernutrition are far more easily secured than are increments of stature represented by height measurements. The failure to attain expected increases in height at a period when restitution seemed to be proceeding rapidly in the body has not been a universal experience in the war stricken area, for Bloch's[4] and Abderhalden's[5] observations have brought more favorable reports. Nevertheless, the warning is clear that gain and symmetrical growth are by no means synonymous terms. The evaluation of proper development in adolescent groups of persons evidently calls for consideration of many factors and for much further research. Enthusiasm for betterment must not be allowed to dim our perception of the present limitations of our knowledge of growth.

THE ANTIVIVISECTION INITIATIVE IN COLORADO

Again efforts are being made to stop research directed toward the relief of pain and disease and the prolongation of life. By use of the initiative and referendum, the antivivisectionists of Colorado have filed a bill, to be voted on at the November election, which prohibits experimental operations on animals except to relieve or cure the animals themselves. It is the same sort of measure that was presented for popular vote in California in 1920. If it should be adopted it would abolish all experimental study of problems in general biology and in general and veterinary medicine; it would discontinue modern diagnostic methods—no Wassermann tests, no diphtheria tests for virulence, no inoculations to determine the presence of tuberculosis would be permitted. The preparation of vaccines and curative serums, and the standardization of drugs by animal tests could not be carried out. The law would thus render useless to a large degree the laboratories in the state and city boards of health, in the hospitals, in the medical school and in the Bureau of Animal Industry. It would seriously interfere with the live-stock interests, for it would not only check experiments for the cure of animal disease but would refuse to threatened herds and flocks the protection obtainable from well-tried serums and vaccines. Such legislation would imperil every man, woman and child in Colorado, and the domestic animals as well.

There is no reasonable call for such legislation. Ancient prejudices, misinformation and gross perversion of the facts have been used to mislead people regarding the nature and the beneficent results of animal experimentation. In every medical school of the United States, in veterinary schools, in state health board laboratories, humane rules governing the treatment of experimental animals have been adopted and are being enforced. The "open door" policy, admitting freely to the laboratories the officers of humane societies, has now been adopted in the medical institutions throughout the land. There are drastic laws in the statutes against cruelty to animals. If, as the antivivisectionists insist, cruelties are being practiced in the laboratories, there is no excuse for their negligence in permitting these cruelties to continue and the perpetrators to go unpunished. Until the existing law is proved inadequate, no new law should be enacted.

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[1] Emerson, W. R. P.: Nutrition and Growth in Children, New York, D. Appleton & Co., 1922.

[2] Health Education and the Nutrition Class, A Report of the Bureau of Education Experiments, New York, E. P. Dutton & Co., 1921.

[3] Goldstein, F.: Klinische Beobachtungen über Gewichts- und Längenwachstum unterernährter schulpflichtiger Kinder bei Wiederauffütterung, Ztschr. f. Kinderh. **32:** 178 (April 12) 1922.

[4] Bloch, Hedwig: München. med. Wchnschr., 1920, No. 37.

[5] Abderhalden, E.: München. med. Wchnschr., 1920, No. 50.

The present effort of the antivivisectionists subjects the people of Colorado to an intelligence test on a large scale. When a similar test was made in California two years ago, the measure prohibiting animal experimentation was defeated by a quarter of a million votes. Everywhere, in the national Congress, in Massachusetts, in New York, in Pennsylvania and elsewhere, the antivivisectionists have failed to secure restrictive legislation. They should not have their first success in Colorado.

When people are properly informed regarding the methods of animal experimentation, the precautions taken to avoid unnecessary pain, the character of the investigators, and the great benefits that have come to man, and to animals as well, from medical research, there is no question that a large majority will not only tolerate, but will promote the activities of the laboratory workers. It is of prime importance that well-informed physicians recognize the essential need of freedom of inquiry about the problems of life and death, and that they give their time generously to explain how the proposed law would endanger the welfare of Colorado.

The responsibility does not rest, however, solely on physicians. The fight against preventable disease and premature death should be one of the first interests of all public spirited citizens. They should recognize that in this fight the antivivisectionists are slackers, doing nothing themselves to secure better health and longer life for their fellows, and trying their best to prevent others from using the ways which have proved most effective. These ways are now used throughout the civilized world. The intelligent voters of Colorado must not undermine and destroy their own defenses.

China Workers and Tuberculosis.—The *Hospitalstidende* quotes some recent statistics confirming the higher death rate from tuberculosis in the ceramic industries, and the *Deutsche medizinische Wochenschrift* reports that the German minister of the interior, the minister of labor and the Prussian public welfare minister have been investigating this subject. A number of meetings have been held for discussion with various consulting authorities, and the Kaiser Wilhelm Academy is undertaking a series of researches to throw light on the questions involved.

Current Comment

PROPOSED HIGH TARIFF ON SCIENTIFIC INSTRUMENTS

The Fordney Tariff Bill places an increased tariff on microscopic, optical and other scientific instruments and, according to newspaper reports as The Journal goes to press, the Senate, on motion of its Finance Committee, has refused requests by educational institutions that they be permitted to obtain scientific instruments and apparatus free of duty. In this regard, the proposed legislation is a complete reversal of the government's attitude toward educational institutions. The available funds for scientific instruments in such institutions are invariably inadequate in comparison with the great needs and possibilities of education and scientific research, which should not be hindered by undue taxation. Exemption of education from taxation has been the policy of previous tariff bills and it has proved satisfactory. It is to be hoped that the Senate may see its way clear to reconsider this particular point; failing that, that the situation may be corrected when the tariff bill comes to conference. To eliminate the exemption of educational institutions would be a serious blow to the cause of science and of scientific medicine in particular.

BACTERIOLYTIC TEARS

During the past month the newspapers have regaled a public always hungry for the newest contributions of science, provided they can be dispensed in the highly spiced form that alone seems to be popularly palatable, with imported stories of the microbe-destroying power of the lacrimal secretion. The potent component was referred to as "lysozyme." The basis for this hubbub is to be found in a communication[1] to the Royal Society of London from the Laboratory of the Inoculation Department of St. Mary's Hospital, the scientific home of Sir Almroth Wright. Lysozyme is described as a substance present in the tissues and secretions of the body, having properties akin to those of ferments and capable of rapidly dissolving certain bacteria. It was discovered through the chance observation of the bactericidal action of nasal mucus on a heretofore undescribed nasal micro-organism, *Micrococcus lysodeikticus*. A few other bacteria also, but by no means most of those tested, have been inhibited in growth. In addition to checking their development, the potent fluids exert a lytic action so that the micro-organisms actually disintegrate more or less completely. Lysozyme is said to occur in many biologic products: tears, sputum, nasal secretion, saliva, blood serum, effusions, sebum, etc. It is thermolabile. On the basis of his somewhat preliminary investigations, Fleming ventures to assert that the commonly alleged mechanical effects of tears, saliva and sputum in "washing away" micro-organisms are supplemented by their unique "property of destroying microbes to a very high degree." Apparently, however, the majority of those attacked represent nonpathogenic forms. It must not be forgotten that our knowledge of bacterial destruction is by no means entirely new. Nuttall demonstrated in 1888 that fresh normal defibrinated blood has the power of killing bacteria; and bacteriolysis both in vivo and in vitro presently became an established possibility.

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[1] Fleming, A.: On a Remarkable Bacteriolytic Element Found in Tissues and Secretions, Proc. Roy. Soc. London (B) **93**: 306 (May 1) 1922.

ON THE INTRAVENOUS USE OF ACACIA

The discussion by Dr. Bayliss,[1] the originator of the intravenous use of acacia solution, in this issue of The Journal, will be appreciated by readers, although it is disappointing to learn that the main issues raised by the editorial to which he replies are not effectively disposed of by him, but are left virtually in statu quo. It is now generally accepted that acacia has a limited and uncertain usefulness, notwithstanding the impression conveyed by the author that the place of this substance in the therapeutic armamentarium is assured, and that the mechanism of its action and other features are settled. That this is far from being the case can readily be ascertained from the papers quoted in the editorial and those on the mechanism of its action and usefulness recently published by Zondek [2] and Meyer.[3] The intravenous use of acacia is a recent therapeutic procedure—not more than four or five years old—and apparently sufficient time has not elapsed for a thorough appraisal of its use as a therapeutic remedy. Bearing in mind the accidents from the use of acacia that have been reported, the lack of agreement as to its beneficial effects, among surgeons who have tried it, the experimental evidence that has been reported as to its deleterious effects, and the paucity of data indicating its clinical usefulness, conservative practitioners will still withhold their verdict. Moreover, the questions of intravenous therapy, which are involved in any discussion on the use of acacia in shock, hemorrhage and allied conditions, are an important and serious complicating consideration.

COMPENSATORY CIRCULATORY FUNCTION FOLLOWING HEMORRHAGE

The capacity of the organism to adjust itself to new conditions which may threaten the efficacy of its normal functions is sometimes truly remarkable. Illustrations are afforded by the marked changes in the respiratory and circulatory mechanisms that ensue when the body is transported to a considerable altitude where a shortage of atmospheric oxygen tends to occur at the lowered atmospheric pressure. To some extent the physiologic adjustments to vigorous muscular work are of an analogous character. After hemorrhage, the tissues are threatened with harm through the possibilities of lowered blood pressure and smaller volume of circulating fluid with a decreased total oxygen-carrying capacity. So long as the loss of blood is not very large, several factors may come into play to protect the organism against the danger of imperfectly filled blood vessels sending less blood to the heart and resulting in insufficient oxygenation in the active cells. Thus, augmented breathing hastens the venous flow to the heart from the abdomen; an accelerated heart rate tends to increase the cardiac output per unit of time and thus maintain the general arterial pressure; and the latter is still further secured by the constriction of the peripheral blood vessels. Whether or not the fluid lost by hemorrhage is promptly restored from the tissue fluids has often been debated, and it seems to depend on a variety of factors.[1] In a recent issue of The Journal, Burton-Opitz[2] has reported experimental studies on hemorrhage indicating that the adaptation of the system to the gradual loss of a relatively small volume of blood is probably not brought about by any rapid restoration of fluid derived from the tissues. According to him, the important factor is the active compensatory regulation of the caliber of the peripheral vessels. Presently, with larger or more rapid hemorrhages, the increased heart rate and other adjustments come into play, until finally, with failure of the venous supply and symptoms of cardiac weakness, the arterial pressure declines.

THE RÔLE OF SALICYLATES IN ACUTE RHEUMATIC FEVER

Salicylates are so widely used as therapeutic agents, notably in such conditions as acute rheumatic fever, that the pharmacology of these compounds ought to be understood. They undoubtedly afford relief to many while the medication is continued. Since salicylates are usually assumed to be antiseptics, they have been supposed to exert benefit by acting destructively on microorganisms which may be concerned in the etiology of rheumatism. Although salicylic acid has some bactericidal power, its salts are virtually devoid of this, particularly in the low concentrations in which they might circulate in the organism. As salicylic acid, in whatever form it is administered, undoubtedly is absorbed and circulates as a more soluble salicylate, because it cannot exist free in the blood or other slightly alkaline fluids of the body, the theory of bactericidal function finds little support. It has been suggested, however, that, although the salicylic acid cannot occur as such in the blood, it might be liberated in the inflamed tissues of patients with acute rheumatic fever, especially as a considerably increased tension of carbon dioxid was assumed to exist in such localities of the body. Hanzlik [3] failed to discover free salicylic acid in the exudates from inflamed joints of rheumatic patients; but he took no precaution to prevent the escape of carbon dioxid from his specimens. A reinvestigation of joint exudates from suitable patients by Boots and Cullen [4] at the Hospital of the Rockefeller

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[1] Bayliss, W. M.: Acacia for Transfusion, this issue, p. 1885.

[2] Zondek, S. G.: Biochem. Ztschr. **116**: 246, 1921.

[3] Meyer, Erich: Klin. Wchnschr. **1**: 1, 1922.

[1] Hewlett, A. W.: Functional Pathology of Internal Diseases, New York, D. Appleton & Co., 1917, p. 586.

[2] Burton-Opitz, Russell: The Functional Capacity of the Heart During Hemorrhage, J. A. M. A. **78**: 1375 (May 6) 1922.

[3] Hanzlik, P. J.: J. Pharmacol. & Exper. Therap. **9**: 217 (Jan.) 1917.

[4] Boots, R. H., and Cullen, G. E.: The Hydrogen-Ion Concentrations of Joint Exudates in Acute Arthritis, Proc. Soc. Exper. Biol. & Med. **19**: 287 (March 15) 1922.

Institute, New York, under all the precautions dictated by up-to-date procedures for the study of hydrogen ion concentration, showed the fluids to be slightly alkaline. As a definitely acid medium is necessary for the liberation of salicylic acid, the latter cannot exist free in the joint fluids after the administration of salicylates. Consequently, any advantage from their use cannot be ascribed to bactericidal effects.

ACTIVITIES OF THE ANTIVIVISECTIONISTS

The comments made in the editorial in this issue concerning antivivisection propaganda now being conducted in Colorado are directed particularly to that state, since the problem there is an immediate issue. In other states, however, the antivivisectionists, enlisting in their cause all other antis against preventive and curative medicine, are either now, or will be in the near future, actively engaged in propaganda of a similar character. Louisiana, Florida, Idaho, Oregon, Washington and California anticipate conflict this fall on this particular subject. The medical profession must aid an enlightened public to inform legislators clearly as to the issues involved. The question is not, however, one which concerns the medical profession primarily; it is fundamental to the public health.

PROPHYLACTIC VACCINATION OF DOGS AGAINST RABIES

In several parts of the United States, rabies has been more prevalent in recent months than for many years. Connecticut and western Massachusetts, particularly, seem to have suffered from the ravages of several rabid animals, one large dog in Holyoke biting twenty persons. As well known, Pasteur's method of vaccination against rabies has been successfully practiced on thousands of human patients; but it has never been used to any great extent in protecting dogs, largely because of its great expense and time-consuming nature. An important advance now seems to have been made. Two Japanese investigators, Umeno and Doi, have recently found it possible to confer immunity on dogs with a single injection. The method of immunization consists of a single dose of phenolized fixed virus, and is said to have been used in certain regions in Japan with great success. Eichhorn and Lyon[1] have recently undertaken to test the degree of immunity actually produced by a single vaccination. Their results confirm those of the Japanese workers, and are most encouraging. Their experiments justify the conclusion that dogs injected with a single dose of phenolized fixed virus are protected against large doses of street virus. This method offers a promising opportunity of controlling, if not eventually eradicating, the disease. Compulsory vaccination of all dogs in localities where the disease is prevalent might readily be employed. The method should be given a trial by the public health authorities in some locality where rabies is prevalent and where the results can be properly controlled.

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[1] Eichhorn, A., and Lyon, B. M.: J. Am. Vet. A. **61**: 38, 1922.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Library for Physicians.—The Los Angeles County Medical Association has purchased property at Orange Street, Los Angeles, where it will erect a physicians' club building and medical reference library, at an estimated cost of $200,000. The building will be two stories high and will be built in mission style.

Shrine Hospital Dedication.—On the occasion of the Shriners' convention in San Francisco the Imperial Potentate dedicated the San Francisco Hospital for Crippled Children, June 12. This will be the first of the ten hospitals to be erected by the Shriners. The institution will be built at a cost of $260,000, and is expected to be ready for occupancy in September. Dr. Walter I. Baldwin, assisted by Drs. Edward C. Bull and Fred Hass, has been appointed surgeon-in-chief of the hospital.

DISTRICT OF COLUMBIA

Personal.—Dr. John A. Foote, Washington, was recently elected president of the Society of American Teachers of Diseases of Children at the annual meeting in St. Louis, held in connection with the annual session of the American Medical Association. Dr. Foote was also elected vice president of the Section on Pediatrics.

Medical Meeting.—At a meeting of the Mapiya (Medicine Men) in Washington, May 17, the subject discussed was "The Present Status of Medical Education in the United States." Dr. George M. Kober, dean of the Georgetown University School of Medicine; Dr. Edward A. Ballock, dean of Howard University School of Medicine, and Dr. William C. Borden, dean of George Washington University Medical School, gave addresses.

President on Child Labor.—The recent decision of the supreme court that the child labor law was unconstitutional has influenced President Harding to state his intention of sending a special intimation to Congress recommending action to correct the situation created by the supreme court's action. The President is expected to recommend a constitutional amendment giving Congress power to regulate the employment of children and women in industry.

ILLINOIS

Dr. Taylor Resigns.—Dr. Lewis C. Taylor, Springfield, executive secretary of the state board of medical examiners for the last twenty-five years, tendered his resignation to W. H. H. Miller, head of the department of education and registration, June 7.

Appointment of Medical Examiners.—The following physicians have been appointed to the state board of medical examiners: chairman, Dr. John R. Pennington, Chicago; Dr. Elbert L. Damron, Effingham; Dr. Henry P. Beirne, Quincy; Dr. Harry H. Hanly, Peoria, and Dr. Frank B. Earle, Wilmette.

Physician Acquitted.—It is reported that in the $25,000 suit for malpractice brought by Mrs. Shaw against Dr. Adolph J. Foerter, Peoria, the jury reached a verdict of "not guilty," May 19. Physicians on the witness stand stated that Dr. Foerter's treatment of the woman's fractured arm conformed with approved medical practice.

Epidemiologic Survey at Rockford University.—Owing to three successive outbreaks of diarrhea that have recently occurred among the students of Rockford University, an examination of specimens from all food handlers connected with the institution has been ordered. This action was deemed necessary in order to establish or disprove the possible presence of typhoid fever carriers that may have been responsible for the trouble.

Emergency Chlorinator Installed at Marshall.—As a result of a rather sharp outbreak of typhoid fever, which was attributed to pollution in the public water supply, the city of Marshall has installed an emergency liquid chlorinator. At the same time, the state department of public health has stationed its mobile diagnostic laboratory at the scene, and has assigned a district health superintendent to assist the local authorities in carrying out a survey for the purpose of locating every possible source of typhoid fever. Typhoid fever has been epidemic in Marshall for years, and the present activities constitute a determined effort permanently to eradicate the disease there.

Summer Public Health Program.—The state department of public health has decided on five specific lines of action for its program during the present summer and the coming fall months: (1) a campaign looking toward the adoption and enforcement of a practical milk pasteurization ordinance in all the principal towns and cities; (2) the installation, through local officials, of a public health nursing service in all counties that are now without such service; (3) a survey to determine the exact status and extent of infant welfare service throughout the state; (4) a survey to locate and obtain the names and addresses of all midwives, whether registered or not, who are now practicing in Illinois, and (5) the completion of the birth registration drive which was inaugurated several months ago. Work in connection with this program will be carried out largely by the district health superintendents.

Chicago

Chicago Tuberculosis Society.—At the recent annual meeting of the society, Dr. Walter B. Metcalf was elected president; Dr. Herman J. Achard, secretary-treasurer, and Dr. John Ritter, trustee for three years.

Public Health Conferences in Chicago.—Two public health conferences will be conducted in Chicago, July 29-August 15. One will deal with the production and sale of safe milk supplies; the other will be concerned with the use of toxin-antitoxin as an immunizing agent. The state department of public health in cooperation with a regional committee of the International Milk Dealers' Association and local health officers is taking an active part in arranging for these meetings, having issued invitations to representative public health officials, milk dealers, dairymen, physicians and others who are particularly concerned. The purpose of the conference on safe milk supplies will be the drafting of a model ordi-ance suitable for adoption by municipalities throughout the ountry. In this connection, the state department of public ealth, in cooperation with the University of Illinois and the tate department of agriculture, has worked out an ordinance hich will be presented for consideration by the conference. The other conference will be devoted largely to a discussion f the practicability of using toxin-antitoxin on a large scale or preventing diphtheria.

LOUISIANA

Personal.—Dr. Stephen W. Stafford, New Orleans, while eturning recently from a European trip abroad the *Hansa*, f the Hamburg-American Line, was stricken with paralysis. is condition, which was serious for a time, was somewhat mproved when the ship reached port.

MARYLAND

Health Board Convenes.—Officials of the Johns Hopkins chool of Hygiene and Public Health and of the Balti- ore City and State Health Departments addressed the nnual conference of the board of health of Maryland at sler Hall, Baltimore, June 9. Dr. John S. Fulton, secre- ry of the state department of health, was in the chair at e morning session and Dr. C. Hampson Jones, health com- issioner of Baltimore, presided at the afternoon session. r. William H. Welch of the Johns Hopkins School of ygiene and Public Health presided at the evening session.

Johns Hopkins Hospital.—After a year's operation, the elley-Kilmer ward at the James Buchanan Brady Urolog- al Institute, Johns Hopkins Hospital, provided for persons moderate means, has proved a complete success. This ard was made possible by gifts, totaling $50,000, from two rmer patients at the Brady Institute, Mr. R. W. Kelley of ew York and Mr. Willis S. Kilmer of Remlik, Va., who ecided to donate this amount that one of the wards of the ilding already completed could be opened and put into eration.——The new laboratory of the physiologic division the medical department of the Johns Hopkins Hospital s just been completed and put into service. This is the ft of William Bingham of Cleveland, who gave $5,000 to crease the hospital's facilities for investigative work in e problems of circulation and respiration. Of the $5,000, out $3,500 was spent for the building, and about $1,500 ll be available for equipment.

Personal.—Dr. W. N. Palmer, Easton, has been appointed county health officer.——Dr. Leon C. Havens, Baltimore, has been appointed director of the laboratory work of the state health department.——Dr. J. Knox Insley has been appointed chairman of the state board of labor and statistics.——Dr. John W. Baylor has become associated with Dr. Harry R. Slack, Jr., in the practice of otolaryngology.——Dr. George W. Corner, associate professor of anatomy, Johns Hopkins Medical School, has been appointed head of the department of anatomy in the new school of medicine and dentistry now being organized at the University of Rochester, N. Y.——Dr. Hugh H. Young, Baltimore, recently spoke before the House Judiciary Committee in Washington, urging the passage of the bill continuing the work of the interdepartmental social hygiene board under the Department of Justice by the federal government.——Dr. W. V. McCollum, Johns Hopkins School of Hygiene and Public Health, delivered an address, June 7, at the thirty-seventh annual convention of the Holstein-Friesian Association of America in Kansas City.

MASSACHUSETTS

Changes in the Health Department.—Dr. Francis A. Finnegan, state district health officer, has resigned to become director of hygiene at Lowell.——Dr. Oscar A. Dudley, district health officer of the Berkshire District, has been transferred to the Worcester District, to succeed Dr. Finnegan.——Dr. Leland M. French, epidemiologist to the central office of the department, has been appointed to succeed Dr. Dudley.

Fellowships at Public Health School.—It has been announced that the new Harvard School of Public Health, which will open in September, is offering several fellowships of $1,200 each, for the year 1922-1923. Properly trained students working for their doctor's degree will be given special consideration. Applications for these fellowships should be made to the secretary, School of Public Health, 240 Longwood Avenue, Boston, not later than August 1.

Personal.—Dr. Lydia Reinhold Baker-Pierce has been appointed resident pathologist at the State Hospital, Westboro.——Dr. George E. Percy, Salem, has returned to the United States from a trip to Porto Rico, and will practice in Boston.——Dr. Isabella L. Cameron, Boston, has been appointed to the Women's Maternity Hospital, Minneapolis.——Dr. Barbara Ring of the Ring Sanatorium, Arlington Heights, is the author of a play entitled, "The Making of Mariana," dealing with the problem of psychanalysis from its purely scientific aspects. This play was recently produced in Boston, under the direction of the Theater Guild.——Dr. William L. Fraser, Lynn, has been appointed health commissioner of Yarmouth, Nova Scotia. He will serve under the U. S. Public Health Service and look after the interests of the United States. Dr. Fraser served during the World War as commanding officer of Base Hospital No. 144.

MICHIGAN

University of Michigan.—Prof. Howard Bishop Lewis, instructor of physiologic chemistry at the University of Michigan Medical School, Ann Arbor, has been appointed to the chair of physiology at the university. The quarters and equipment of the chemistry department will be enlarged to accommodate the increased classes.

Annual State Meeting.—At the fifty-seventh annual meeting of the Michigan State Medical Society in Flint, June 7-9, the following officers were elected for the ensuing year: president, Dr. William T. Dodge, Big Rapids; vice presidents, Drs. Joshua G. R. Manwaring, Flint, William E. McNamara, Lansing, Theodore F. Heavenrich, Port Huron, and William K. West, Houghton. Dr. Frederick C. Warnshuis was reelected secretary of the association. The house of delegates adopted and approved all the action that was taken by the American Medical Association at St. Louis and subscribed its support in instituting these constructive measures in the state of Michigan.

Nurses' Instruction Institute.—Nurses from all parts of the state will meet at Ann Arbor, June 5-16, for an instructors' institute, under the direction of the Michigan State League of Nursing Education. Dr. Christopher G. Parnall, director of the University of Michigan Hospital, will deliver the opening address. Subjects to be discussed are: hospital laundry problems, training attendants, training dental hygienists, rural nursing, communicable diseases, cooperation between rural nurses and home economics departments, occupational therapy in hospitals, various phases of hospital administration, child welfare, intelligence testing and organization of public health and country nursing.

MISSOURI

Society News. — The St. Louis Medical Society has appointed a committee to make a survey of the city institutions for the care of the sick, with a view of preparing an ordinance for increasing the salaries of physicians employed in such institutions. The society has inaugurated a custom of introducing new members at a regular meeting every month. Twenty members were introduced at the meeting of June 6.

Hospital News.—A new hospital will be erected by the Liberty Hospital Building Company, St. Louis, on the southwest corner of Taylor and Washington avenues.——A $37,000 addition to the Amanda Hospital, Mexico, is being erected.——Bids have been received for the $79,000 building to be erected for the Missouri State Hospital, Mount Vernon.——A new hospital will be built as an addition to State Hospital No. 1, Fulton, to care for 120 patients. The building will cost approximately $85,000, and will partially relieve the congestion at the hospital, but it will not take care of the large overflow that has crowded the institution. There are 1,400 people at the hospital, which is 400 more than there are accommodations for.——The following appointments have been made at State Hospital No. 2, St. Joseph: Dr. Edwin C. Renaud, laryngology and rhinology; Dr. Mark J. Farber, dermatology; Dr. Charles Greenberg, genito-urinary; Dr. Caryl A. Potter and Dr. Hilen K. Wallace, surgeons; Dr. J. G. Morgan, dental surgeon; Dr. William H. Minton, ophthalmology; Dr. Andrew A. Disque, otology; Dr. Levi H. Fuson and Clarence A. Good, internists; Dr. Arthur B. McGlothlan, roentgen ray. The positions are honorary, and the men will serve without pay.

NEBRASKA

Personal.—Dr. John Mayer, Osmond, recently suffered a paralytic stroke.——Dr. Solon R. Towne, Omaha, was reelected president of the Nebraska Tuberculosis Association at the recent meeting held in Omaha.

Nebraska Academy of Science.—At the annual meeting of the academy held in April, Dean H. von W. Schulte spoke on "The Development of the Salivary Glands in Mammals," and Dr. Mills J. Breuer on "The Philosophy of Diagnosis."

Hospital News.—The contract has been let for the erection of a $125,000 hospital building to be erected by the Nebraska board of control at Burkett.——The City Hospital board will erect a new 100 bed hospital at Lincoln, at a cost of $150,000.

NEW YORK

Physicians Contribute to Wilson Fund.—Health Commissioner Royal S. Copeland has accepted the chairmanship of a physicians' committee of the Woodrow Wilson Foundation, which is interested in raising $1,000,000 for the establishment of a series of annual prizes for meritorious public service.

Children Undernourished.—The superintendent of the school department of the Children's Aid Society states that the number of children here suffering from malnutrition is on the increase, in spite of the efforts of the organization maintained in eight schools and health centers in the tenement districts. An average of 1,380 meals a day is being served in health centers to children, who are chosen according to their degree of malnutrition. But, although in addition to this supplementary feeding, these children are given the best medical, dental and nursing supervision, they have lost weight during the last year.

New York City

Physician's Gift Completes Park.—Dr. Ernest G. Stillman recently presented 600 acres of valuable land to the Palisades Interstate Park Commission. This gift completes the Palisades Public Park from Cornwall to West Point.

Change in Sanitary Code.—At a meeting of the board of health, May 3, resolutions were adopted to amend Section 122 of the Sanitary Code to read thus:

> Section 122. Poison; sale and distribution regulated.—No person shall sell at retail or give away any poison unless the bottle, box, package, parcel or receptacle containing such poison sold or given away shall bear a label on which shall be conspicuously printed or stenciled in red ink, in plain legible characters, the name of the substance or article, the word "POISON," the name and place of business of the seller, or donor, a skull and crossbones, the word "CAUTION," the maximum dose of the poison, and the antidote therefor. The provisions of this section shall not apply to medicinal compounds containing poisonous drugs in therapeutic doses when the maximum dose of such preparation is marked on the container.

Bleached Flour Must Be So Labeled.—At a meeting, June 9, the board of health adopted a resolution, effective September 1, providing that flour bleached with a chemical shall be labeled conspicuously with the name of the bleaching agent. In explaining the reason for this action, Dr. Royal S. Copeland, health commissioner, called attention to the tendency of the public to associate whiteness with purity. This has led to the practice to some extent of doctoring inferior flour to give it an appearance of dazzling whiteness. The board of health is seriously considering the idea of prohibiting the sale in this community of bleached flour.

Cornell Pay Clinic Thrives.—During the first six months of its existence, according to a report from the United Hospital Fund, the Cornell pay clinic has given 54,656 treatments. During this period, there were 22,828 persons admitted to the clinic. Patients have had to be turned away from the clinic continuously, despite every effort to increase the facilities. The report asserts that this indicates that a pay clinic of this type meets an important public need. The clinic has been run at a loss of about $3,000 a month in excess of the former deficit of the Cornell dispensary. This additional deficit and $30,000 for a reequipment fund have been provided by the Rockefeller Foundation, through the dispensary committee of the United Hospital Fund. At present, there are about eighty physicians on the staff of the clinic.

Personal.—Dr. Stanton P. Hull has been appointed a member of the public health council by Governor Miller, to succeed Mrs. Elmer Blair, whose term has expired.——Dr. Louise Pearce, Rockefeller Institute for Medical Research, New York, has been elected a corresponding member of the Société Belge de Médecine tropicale, Brussels.——Dr. Joseph A. Blake has been awarded the Grand Cross of the Legion of Honor, in recognition of his services in France.——Dr. George David Stewart sailed for Italy, June 1.——Dr. Stephen Smith, aged 99, who graduated from the College of Physicians and Surgeons in 1850, was awarded the degree of doctor of science at the commencement exercises of Columbia University, June 8.——Dr. Charles Edward Amory Winslow has been elected head of the Safety Institute of America.——Drs. Abraham Flexner, C. E. Manning and Ernest Fahnestock recently sailed for Europe.

NORTH CAROLINA

Hospital News.—A twenty-two bed hospital will be erected at Asheville, to be known as the Blue Ridge Hospital for Negroes.——The new French Broad Hospital at Asheville was opened for patients, April 27. The hospital property was purchased at a cost of $30,000 and the capital stock is $100,000.

Typhoid Campaign.—Typhoid and diphtheria prevention campaigns have recently been carried out in various counties in North Carolina, with the result that three treatments of typhoid vaccine each were given to nearly 10,000 persons and a like number of treatments of toxin-antitoxin, for diphtheria prevention, to 884 children between the ages of six months and six years. Sixteen vaccination campaigns similar to this have already been arranged for the summer.

OHIO

Laboratory Men Organize.—At the recent meeting of the Ohio State Medical Society at Cincinnati, there was organized the Ohio Society of Clinical Laboratory Diagnosis. Dr. Carl Spohr, Columbus, was elected chairman, and Dr. C. E. Roderick, Columbus, secretary. Drs. E. E. Eisenberg, Cleveland, Thomas Ramsey, Toledo, and Albert Faller, Cincinnati, were named to act as an advisory committee.

New University Building.—The last details of plans for building the $2,500,000 medical school of Western Reserve University have been completed, and construction will commence as soon as labor conditions become settled and the building material markets are considered stabilized. This building is the gift of Samuel Mather, whose endowments to the university total more than $4,000,000. The new edifice will be a unit of a proposed university hospital group.

Centralize Children's Institutions.—A plan to centralize all children's medical institutions in Cincinnati situated near the College of Medicine and the General Hospital has recently been started. The new home for the friendless will be erected opposite the nurses' home and is the first of several institutions to be built on the hospital site. Dr. William Gillespie, chief of the obstetric service of the General Hospital, will serve in the same capacity for the friendless home, as will other members of the staff.

Personal.—Dr. James Martin has resigned as health commissioner of Crawford County and will leave for California.——Dr. Clarence D. Barrett, Creston, has been appointed health commissioner of Wayne County and Wooster, to succeed the late Dr. Dallas K. Jones.——Dr. Oscar Craven has been appointed health officer of Springfield to succeed Dr. Rush R. Richison, who resigned recently.——Dr. Lewis W. Heizer has been appointed chief medical director of the Cincinnati Health Department, to succeed Dr. Craven.——Dr. Henry L. Sanford, Cleveland, was elected president of the American Urological Association at the recent convention at Atlantic City.——Dr. Mary D. Crane has been elected president of the Woman's Medical Club of Columbus.——Dr. Joseph Blickensdorfer, health commissioner of New Philadelphia, has been appointed health officer of Dover also, to succeed Dr. Max Shauweker, who resigned, May 23.——Dr. Harry Lee Canright, dean of the West China University School of Medicine, Chengtu, China, is home on furlough.——Dr. J. Fred Wuist, Dayton, has been appointed a member of the state board of medical examiners, to succeed Dr. S. M. Sherman, Columbus, whose term has expired.

PENNSYLVANIA

Annual Dinner.—The class of 1912 of the Medico-Chirurgical College of Philadelphia held their tenth annual dinner, June 7. Dr. Robert W. Randall was toastmaster. Drs. Ernest Laplace, Seneca B. Egbert and George H. Meaker were among the speakers.

Personal. — David Wright Wilson, Ph.D., Johns Hopkins University, will succeed Dr. John Marshall in the chair of physiologic chemistry in the University of Pennsylvania School of Medicine. Dr. Wilson was assistant professor of chemistry at Johns Hopkins University in 1914, and, since 1917, has been associate professor of physiologic chemistry at the School of Hygiene and Public Health.——Dr. Harry W. Mitchell, Warren, has been elected president of the American Psychiatric Association.

Course for Nurses.—Seventy-five nurses from the state department of public health who have demonstrated heroism in epidemics, floods, mine explosions and other emergencies are taking an intensive six weeks' graduate course, given by the Pennsylvania School of Social Service in conjunction with the University of Pennsylvania in Philadelphia. Dr. Howard C. Carpenter, director for the department for the prevention of disease of the Children's Hospital, and Dr. Alexander C. Abbott, director of the school of hygiene and public health of the University of Pennsylvania, are among the lecturers and instructors.

Philadelphia

Personal.—Dr. Aller G. Ellis, associate of pathology in the efferson Medical College of Philadelphia and director of he Ayer Clinical Laboratory of the Pennsylvania Hospital, as resigned these positions to accept the directorship of the Colorado Springs Clinical Laboratory in Colorado.

Phipps Institute.—The Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis has recently tarted the publication of a series of open letters to members f the medical profession, to give them the latest facts on tuberculosis and allied diseases, based on twenty years of linical, sociologic and pathologic research and practical xperience. Bulletin No. 1 deals with chronic bronchitis and ulmonary infections other than tuberculosis, and Bulletin No. 2 will treat of tuberculosis and syphilis.

PORTO RICO

Personal.—Dr. Manuel de la Pila Iglesias, president of the Medical Association of Southern Porto Rico, has left for Europe.——Dr. R. Ruiz Arnau, former president of the cademy of Medicine of Porto Rico and now residing in New York, where he is one of the staff in charge of the postraduate course of the Polyclinic Medical School and Hospital for Spanish-speaking physicians, is now visiting in orto Rico.——Dr. Francisco Matanzo, a New York ophthalmologist, is now in Porto Rico.

RHODE ISLAND

Hospital News.—The new James Frances Brown Building the Rhode Island Hospital, Providence, was opened for patients, June 12. The building is the result of community cooperation. It will be used for private patients.

TEXAS

Personal.—Dr. George W. Wilhite, Orange, sailed with his bride, June 3, to accept an appointment at St. Luke's Hospital, Manila, P. I.

New Laboratory at University.—A new laboratory of physiology and a new laboratory of pharmacology, each separate buildings, have been erected at the University of Texas, Galveston, at a cost of $19,000.

Hospital News.—The Baptist Hospital, formerly known as the Protestant Hospital, Fort Worth, was opened, June 1.——The West Texas Hospital, Lubbock, erected at a cost of $125,000, was opened to receive patients, March 15.——A site has been purchased for the erection of a clinic building to cost $60,000.

WISCONSIN

Personal.—Dr. Gertrude W. Hulet, who practiced medicine for twenty-two years at Marinette, recently returned from Vuy Yu Ru, India, for a few months' vacation. Dr. Hulet is a medical missionary under the Canadian Baptist Foreign Mission Society and will return to India in July.

Hospital News.—A $100,000 memorial hospital will be erected at Edgerton.——The sum of $50,000 has been given for the establishment of a hospital at Madison.——The Eastern Star Hospital Association will erect a $40,000 hospital building at Dousman.——An addition will be erected at St. Mary's Hospital, Rhinelander.——The new building of St. Elizabeth's Hospital, Appleton, is nearing completion.

Medical Meeting.—At the thirty-fourth annual meeting of the Fox River Valley Medical Society, at Oshkosh, June 2, Drs. Hugh Cabot, dean of the University of Michigan; Alfred Scott Warthin, professor of pathology, University of Michigan; George E. Fahr, professor of medicine, University of Minnesota, and Dean Charles R. Bardeen, professor of anatomy at the University of Wisconsin, were the principal speakers.

CANADA

Physicians' Prescriptions.—According to a report recently issued by the Attorney-General of Ontario, 532,611 prescriptions for liquor were filled in the province in 1921, which required 183,246 gallons of spirits. The value of this amount of liquor was $3,131,410.

Ontario Medical Association.—At the forty-third annual meeting of the association at Toronto, May 30-June 3, the following officers were elected for the ensuing year: president, Dr. Edward R. Secord, Brantford; first vice president, Dr. John Fenton Argue, Ottawa; second vice president, Dr. George S. Young, Toronto; honorary treasurer, Dr. George S. Cameron, Peterboro, and secretary, Dr. Thomas C. Routley, Toronto (reelected). The next annual meeting will be held at Windsor, Ont.

University News.—Plans for amalgamating all institutions for higher education in the maritime provinces of Canada, into a central university at Halifax, with the assistance of the Carnegie Foundation, have recently been announced. Alumni of the various colleges are at present considering the proposal. A head university is planned in Halifax, connected with all the colleges, but not any particular one, which will do the work of the graduate and professional schools for the provinces. It is planned that the various colleges situated outside of Halifax shall move to Halifax, providing buildings of their own, where the general work in English, Latin, Greek, mathematics and history shall be conducted for the first two years; all examinations shall be conducted by the head university, and all the degrees be conferred by it, with the exception of those in theology. The Carnegie Foundation would assist financially the colleges which would have to move.——A new medical building at the University of Alberta, Edmonton, was occupied for the first time at the 1922 session. The total cost of the building was more than $1,000,000.——The new buildings at the University of Manitoba, Winnipeg, erected to house the departments of pathology, bacteriology, biochemistry and physiology, are now occupied. This has provided space in the old building for the expansion of the department of anatomy. During the past year, full-time professors in internal medicine, physiology and biochemistry were appointed, this work having previously been taught in conjunction with physiology and pharmacology.

GENERAL

Fraternity Convention. — The annual reunion of the Phi Lambda Kappa Fraternity, Inc., one of the largest medical fraternities, having chapters in most of the Class A medical schools, will be held at Pittsburgh, June 19-21.

American Nurses' Association.—The annual convention of the American Nurses' Association will be held in Seattle, June 26-July 1. The public will be invited to attend a session June 27, when physicians and nurses will discuss the training of nurses and means for bettering conditions during the training period.

American Association for the Study of the Feebleminded.—At the annual meeting of the association in St. Louis, May 18-20, Dr. Charles Banks McNairy, superintendent of the Caswell Training School, Kinston, N. C., was elected president, and Dr. Benjamin W. Baker, superintendent of the New Hampshire School for the Feebleminded, Laconia, N. H., was elected secretary-treasurer.

Vacation Addresses.—Physicians sending notation of change of address to The Journal, including change of mailing address, should state clearly whether or not the change is temporary, on account of vacation, or whether it represents a permanent change of location. Such statement will avoid inconvenience to the physician in the receipt of mail and will aid the Directory Department in keeping satisfactory records.

Veterans of the World War.—The Medical Veterans of the World War held their annual convention at St. Louis recently. Dr. Arthur T. McCormack, secretary of the Kentucky State Board of Health, was elected president of the association and Dr. Philip E. Blackerby, Louisville, treasurer, and assistant secretary. The headquarters of the veterans will be moved from Washington, D. C., to Louisville. Dr. McCormack is the third president of the organization; the others preceding him were Dr. Frank Billings, Chicago, and Dr. Victor Vaughan, Washington, D. C.

Transfer of Leprosy Station.—The House Committee on Territories has made a favorable report of the bill recently presented providing for the transfer of the United States federal leprosy investigation station at Kalawao, Hawaii, to the Territory of Hawaii. The transfer is to include the lands and buildings, and the Secretary of Treasury is authorized to make the transfer. The station at Kalawao is now under the control of the U. S. Public Health Service. Its activities in the care, treatment and investigation of leprosy have been transferred from the Hawaiian Islands to Carville, La., where the government recently purchased a leprosarium formerly owned by the state of Louisiana.

Prevention of Heart Disease.—On invitation of the Association for the Prevention and Relief of Heart Disease, New York, forty-two physicians interested in the social, educational and preventive aspects of heart disease, its treatment and prevention, met in St. Louis, May 24, to discuss the possible advantages of some form of national organization to bind together the groups already actively engaged in clinical and social study and practice in this field. The chairman, Dr. Robert H. Halsey, appointed Dr. Lewis E. Conner, New York, chairman, and Drs. James B. Herrick, Chicago, Joseph Sailer, Philadelphia, Paul D. White, Boston, and Hugh McCulloch, St. Louis, as a committee of five to prepare a plan of organization and report to those interested.

Prevention of Delinquency.—Through a special gift to the National Committee for Mental Hygiene, donated from the Commonwealth Fund, a new department has been organized, to be known as the Division on the Prevention of Delinquency. Psychiatric service will be furnished free to a number of juvenile courts throughout the country, and a demonstration clinic with a psychiatrist, psychologist and psychiatric social worker will be assigned to each court whenever possible. Investigation will be made covering a period of several years in order to deal with the problem of delinquency in special population groups. The first study will be made in Monmouth, N. J., under the direction of Dr. Victor V. Anderson, assisted by an advisory committee.

Revised Bulletin National Committee for Prevention of Blindness.—The National Committee for the Prevention of Blindness has announced that the entire subject of eye hazards in industrial occupations will be brought up to date in a revised edition of Bulletin 12 to be published by the committee. The Safety Institute of America, the National Safety Council, the American Society of Safety Engineers, and the leading ophthalmologists of the country will cooperate in this work. The growing interest among industrial executives in literature on this subject is shown in the distribution of 3,400 sets of industrial eye accident posters, and by the fact that the second edition of Bulletin 12, a volume of 145 pages, was exhausted before the close of the year. The revised bulletin with reports of typical cases and recommendations for safe practice will be published in the fall.

Medical Meetings.—The following societies will hold their annual conferences during June and July: General Federation of Women's Clubs, Chautauqua, N. Y., June 20-30.——National Conference of Social Workers, Cincinnati, June 21-29.—National Conference of Jewish Social Service, Providence, R. I., June 21.——American Association for the Advancement of Science, Salt Lake City, June 22-24.——Eugenics Research Association, Cold Spring Harbor, N. Y., June 24.——National Nursing Associations, Seattle, June 26 to July 1.——New York State Sanitary Officers and Public Health Nurses, Saratoga, June 27-28.——National Conference on Child Labor, Providence, R. I., June 27.——Conference on Health Education and the Preparation of Teachers, Lake Mohonk, N. Y., June 26 to July 1.——National Education Association, Boston, July 4.

Proposed Legislation on Weights and Measures.—Regulation and control of the manufacture, sale and use of all weights and measures are proposed in the bill introduced in the House of Representatives by Congressman Vestal of Indiana, chairman of the Committee on Weights and Measures. The bill empowers the Bureau of Standards to examine and pass upon the accuracy of all weights and measures, issuing a certificate on them. Manufacturers and owners of weights and measures have the right of appeal from the Bureau of Standards to the Secretary of Commerce and then to the federal court of appeals. The Bureau of Standards is also authorized to register and give a serial number to each type of weight or measure or measuring device submitted and approved by the bureau. A penalty is fixed for the violation of the proposed act.

Medical Women's National Association.—At the annual meeting of the association, in St. Louis, May 22-23, the following officers were elected for the ensuing year: Dr. Grace N. Kimball, Poughkeepsie, N. Y., president; Dr. Kate Campbell H. Mead, Middletown, Conn., president-elect; Drs. Martha A. Welpton, San Diego, Calif., Mary T. Greene, Castile, N. Y., and May Agnes Hopkins, Dallas, Texas, vice presidents; Dr. L. Rosa H. Gantt, Spartanburg, S. C., treasurer, and Dr. Marjory J. Potter, San Diego, Calif., secretary. A. communication was received from the American Medical Association Council on Health and Public Instruction requesting that a coordinating committee be appointed by the Medical Women's National Association to formulate plans for cooperation. This was approved by the association, and Dr. Elizabeth Burr Thelberg of Vassar College was appointed chairman.

Large Fund for Experiment.—It was announced by the secretary of the Millbank Fund, at the meeting of the National Tuberculosis Association in Washington, that between $300,000 and $400,000 of the income from $10,000,000 will be set aside by the Millbank Fund to demonstrate, in several districts, how tuberculosis can be controlled in American communities. This demonstration is prompted by the successful outcome of the tuberculosis investigation conducted for the last five years at Framingham, Mass., by the National Tuberculosis Association, and by the Home Hospital experiment conducted in New York. The purpose is to determine whether any American community, with proper organization and at reasonable expense, can reduce the tuberculosis death rate to a nominal minimum, as occurred at Framingham; and to ascertain the proper organization and per capita costs of such undertakings when applied to large cities and to rural communities. The Millbank Fund proposes to initiate a series of not more than three demonstrations in cities and communities of New York state, which will assist in their operation and support. It was also announced that in the last twelve years, since 1910, tuberculosis has claimed 21,271 male victims in New York, as against 41,097 female. The death rates in 1921 were respectively, 123 and eighty-three per hundred thousand, the greater mortality of the men being due to the condition under which they work.

Report of Narcotic Bureau.—Prohibition Commissioner Blair has issued a summary of the activities of his bureau for the past year in the suppression of the drug traffic. The administration of the internal revenue narcotic laws ha been conducted with a field force of approximately 179 narcotic agents under the direction of thirteen agents. The report shows that under this organization 2,195 violations of the law by persons not qualified to register were disclosed during the first six months (July to December, 1921) whereas 1,10 such cases were reported during the same period of 1920 During the six months, July to December, 1920, 384 person were convicted; while, during the corresponding six month of 1921, a total of 1,109 convictions were secured, for which fines amounting to $64,083 were imposed with the aggregate of sentences totaling 918 years. The handling of cases by he field agents and collectors of internal revenue has esulted in bringing about the settlement of all old pending ases, and all new cases are either in the hands of the United tates attorneys or under compromise or further investigaive proceedings. The manufacture and sale of narcotics is ow better controlled by requiring accountability of manuacturers and wholesale dealers covering all drugs received, nanufactured or sold. All sales are carefully scrutinized, nd investigation of every physician and dispensing druggist s promptly ordered if unusual purchases are made. The ystem of assembling information of this character is being xtended with a view of even further control.

Rockefeller Foundation.—In the president's report for 1921, he activities of the Rockefeller Foundation during that year re stated as follows:

Continued the $250,000 annual appropriation for Johns Hopkins chool of Hygiene and Public Health.

Pledged $2,000,000 to Harvard for a school of health.

Contributed large sums to public health in Czechoslovakia, Brazil nd the United States.

Aided the Pasteur Institute of Paris to recruit and train personnel.

Promoted the cause of nurse training in United States and Europe.

Underwrote an experimental pay clinic at Cornell University Medical ollege.

Opened the medical school and hospital at Peking, China, and assisted venty-five other medical centers in that country.

Pledged $1,000,000 for Columbia University Medical Department.

Contracted to appropriate $3,500,000 for rebuilding the medical school nd hospital of the Free University of Brussels.

Made surveys of medical schools in Japan, China, Philippines, Indohina, Straits Settlements, Siam, India, Syria and Turkey.

Supplied American and British medical journals to 112 medical braries on the continent.

Supplemented the laboratory equipment and supplies of five medical chools in Europe.

Paid expenses of commissions from Great Britain, Serbia, and Brazil.

Provided 157 fellowships in hygiene, medicine, physics and chemistry representatives of eighteen countries.

Continued a campaign against yellow fever in Mexico, Central and outh America.

Conducted demonstrations in the control of malaria in ten states.

Cooperated in hookworm work in nineteen governmental areas.

Participated in rural health demonstrations in seventy-seven American untries and in Brazil.

Provided experts in medical education and public health for many rts of the world and rendered other services to governments and luntary societies.

LATIN AMERICA

Work of a Cuban Dispensary.—According to a report ceived from the Dispensario Tamayo, 7,333 patients were eated during the year 1921 in this dispensary. Only indints were treated. It was founded by Dr. Diego Tamayo, litor of *Vida Nueva* and former secretary of public health Cuba.

New Hospital to Be Erected.—A new hospital is under nstruction at La Ceiba, Honduras, and will be completed about six months. This building will be known as the incent D'Antoni Memorial Hospital, in memory of Vincent 'Antoni, general manager of the Vaccaro Brothers Fruit mpany, under whose auspices the hospital is being erected a cost of $200,000. When completed this hospital will be rned over to the municipality, and will be operated as a arity institution. The main building will contain the offices, boratory, operating rooms, etc., and there will be two ljoining buildings with fifty beds.

Porto Alegre Medical School.—According to the last report om the Medical School of Porto Alegre, Brazil, the new ilding for the school is approaching completion and classes ll probably be held during the coming year in the new ilding. The staff includes about forty professors and sistants. Forty-eight different subjects are now being ught in the school and the number of pupils during 1921 as 158. During the twenty-three years the school has been operation, 3,156 students have been enrolled and 250 have aduated. In connection with the school there has been in eration an institute of anatomy and a Pasteur Institute in hich 785 patients were treated last year.

Hanson Appointed Chief of Public Health Service in Peru. The *Crónica Médica* of Lima publishes the letter of accepnce of Dr. Henry Hanson, late of the Canal Zone, who has en appointed chief of the national public health service in ru. He has been engaged there in directing the campaign ainst yellow fever, and he makes his acceptance conditional the enforcement of certain regulations in regard to giene and the provision of facilities for the campaign ainst plague, etc. Dr. Hanson is an officer of the United ates Public Health Service. Our exchange congratulates country on the appointment of a representative of scienc medicine instead of a political appointment as has so en happened in the past.

Personal.—Prof. F. Krause of Berlin has arrived at Rio de Janeiro, where he has been invited by the medical faculty to deliver a course of lectures on surgery.——Prof. Max Nonne of Hamburg has arrived at Buenos Aires and will lecture on nervous diseases at the medical school.——Dr. Carlos A. Bambarén of Lima has been elected foreign corresponding member of the French Ligue d'Hygiène Mentale at Paris.——The Hospital Santa Ana of Lima recently celebrated with a banquet the fiftieth anniversary of the connection of Dr. Julio Gómez Sánchez with the institution which he has served for fifty years. The Sociedad de Beneficencia presented him with a gold medal, and the Academia Nacional de Medicina and the Sociedad Peruana de Cirugía sent representatives to the meeting. The Hospital Dos de Mayo also presented a desk set, and the Hospital Militar a framed address.

Medical Degree Conferred by Governmental Decree.—The *Revista Médica de Yucatán* gives the correspondence between the Yucatan Medical Society, backed by the local committee of the Mexican Medical Association, and the governor of Yucatan in regard to the arbitrary decree to the effect that a medical degree and license to practice shall be granted to the foreigner, W. A. Jemmal, without the formalities of examination or presentation of credentials, etc. The decree was signed Feb. 6, 1922, by the governor, and the Yucatan Medical Society sent telegrams at once to inform the chief of the national public health service of Mexico and the officials of the Mexican Medical Association of the matter. They also presented a formal protest to the governor and to the Yucatan legislature denouncing "this irregular proceeding which nullifies the laws and affects the prestige of the medical school." They asked that the decree be annulled. The final letter is from the chief of the Mexican public health service to the Yucatan Medical Society. It states in conclusion: ". . . Unfortunately, this department is powerless to prevent the occurrence of abuses such as the one in question, as each of the states has sovereign rights in regard to the practice of the professions, but so far as this bureau is concerned, no degree like the one in question will be registered. . . . Suffrage effective. No reelection."

FOREIGN

Conference on Infant Mortality.—A conference of the League to Combat Infant Mortality was held in Paris, France, June 6-8.

Gift for the Advancement of Science.—Sir Charles Parsons, F.R.S., has presented £10,000 (approximately $50,000), 5 per cent. war loan stock, to the trustees of the British Association for the Advancement of Science.

Graduate Course in Otorhinolaryngology.—The annual graduate course on otorhinolaryngology presented by Professor Moure at Bordeaux will be available, July 24 to August 5, following the International Congress on Otology at Paris.

The Bretonneau Celebration Postponed.—The *Paris Médical* announces that the three-day celebration of the Bretonneau centennial at Tours has been postponed from June to October. The details were given in these columns, April 1, 1922, p. 983.

International Cancer Congress.—The Congrès interallié du cancer is appointed for the spring of 1923, at Strasbourg. The topics appointed for discussion are: "Experimental Production of Cancer"; "Spontaneous and Induced Means of Defense," and "Irradiation Treatment of Mammary Cancer."

Turkish Woman Enrolls as Medical Student.—The daughter of the Turkish poet, Aga Oglu, has matriculated at the University of Constantinople. The medical department of the university is the first to admit women to its courses, and Miss Oglu is the first to take advantage of this privilege, according to a notice in the *Deutsche medizinische Wochenschrift*.

Kraepelin's Retirement.—Prof. E. Kraepelin has asked to be relieved from delivering the course on psychiatry at the University of Munich, as he wishes to devote all his energies to research on psychiatry at the special institution for this purpose, which is practically his creation. He is now 66, and has recently taken a leading part in combating alcoholism.

University Interchanges at London.—In addition to the six French lecturers previously mentioned, Dr. Murk Jansen of Holland, who recently was given the Umberto I orthopedics prize in Italy, has been invited to give an interchange lecture at the University of London. Prof. Hijmans van den Bergh of Utrecht follows him, and Prof. C. Winkler of Amsterdam opened the series, with a lecture on the neocerebellum in man.

Theft of Infected Laboratory Animals.—The *Policlinico* relates that the director of the official antiserum and vaccine institute at Naples recently informed the police and the city authorities that a number of laboratory animals had been stolen from the establishment. The animals were rabbits, and they had been inoculated with anthrax or bubonic plague in the course of the regular production of antiserums and vaccines.

Australian Official to Study Disease Control.—Dr. H. Cliento of the Australian Department of Health arrived in New York on the *Scythia,* May 20, for the purpose of studying the methods so successfully employed by General Gorgas in Cuba and Panama, in the control of variola and malaria. Dr. Cliento is to have medical and hygienic control in New Guinea, a division of government formerly under German administration.

The German Congress on Diseases of Digestion and Metabolism.—There were 180 physicians in attendance at this congress in April, at Homburg. The next congress is to convene at the same place in 1924. The topic for competition for the next Boas prize (3,000 marks) is "Influence of Venesection on the Metabolism." Competing articles must be in the hands of the secretary, Prof. Fuld, Uhlandstr. 157, Berlin, before Dec. 31, 1923. He will give further information in regard to the conditions of the prize on demand.

Influence of Diet in Tuberculosis.—In a recent issue of the *Zeitschrift für Tuberkulose* a report was published of the mortality statistics of the health department of the German government for all cities with a population of 40,000 and over. In 1914, the number of calories consumed per capita was 2,600. This number decreased in the summer of 1916 to 1,983; in the winter of 1916 to 1,344, and in 1917 to 1,100. In 1916, the rise in tuberculosis mortality was rapid, reaching its height in 1918, and then dropping back to prewar figures.

New Medical Journal.—The International Society of Medical Hydrology has recently published a new periodical, the *Archives of Medical Hydrology,* which is printed temporarily at 36 Devonshire Place, London, England. The first issue, which appeared in May, contained a preface by Sir Clifford Allbutt, regius professor of physic, University of Cambridge. It is intended, at the earliest opportunity, to compile a bibliography of modern hydrology, i. e., balneology, crenotherapy, hydrotherapy, dating from 1800, including systematic treatises and papers of importance, arranged under subjects, authors and countries. The next number of the *Archives of Medical Hydrology* will appear in the autumn of this year, and thereafter at intervals of four months.

Twenty-Fifth Anniversary of Subcutaneous Pubiotomy.—The obstetricians and gynecologists of the medical faculty of the University of Barcelona recently celebrated the twenty-fifth anniversary of this operation by a special ceremony. It was held in a theater building, with historical addresses, lantern slides and moving pictures. The addresses and some of the pictures are reproduced in the *Archivos de Ginecopatía, Obstetricia y Pediatría* of Barcelona as a special issue devoted entirely to the anniversary. Prof. P. Nubiola discusses the present status of subcutaneous pubiotomy in different countries. The Italian surgeon, Bonardi, was the first to perform the operation, at the suggestion of Gigli, to utilize the latter's wire saw, although symphyseotomy dates from 1777.

Price of Alcohol in Germany.—Our German exchanges are lamenting the new regulations regarding the alcohol monopoly, which extend the general tax on alcohol to that used in hospitals and for similar medical purposes. Hitherto this has been exempt. The manufacturers of perfumes and cosmetics succeeded in getting the tax reduced for their use, "to protect this growing industry of perfume manufacture," and the pharmacists are allowed to use a cheaper alcohol for tinctures and fluidextracts if the process is done under the supervision of an official. The regulations provide for new officials for this purpose, and the *Medizinische Klinik* remarks that the pharmacists will shrink from the expense of this, and as a consequence the manufacture of tinctures, etc., will fall into the hands of the manufacturing chemists.

Annual Meeting of the German Psychiatry Research Foundation.—The report of the president, Professor Kraepelin, showed that donations totaling six million marks had been received during the year, including 80,000 marks from the German Medical Society of Chicago, and 20,000 crowns from the Swedish Bruzelius family. The construction of a larger building has had to be abandoned for the present, but a small building near the psychiatry clinic was secured for the records and psychologic department. Professor Plaut of the Psychiatry Research Institute delivered a lantern lecture on the "Importance of Serology for Psychiatry," especially in the diagnosis of syphilis. He related that at the psychiatric clinic, in more than 20 per cent. of all the male patients and 10 per cent. of all the women, syphilis was responsible for the mental disease. He emphasized the importance of the recent success in serodiagnosis in animals, enabling control of experimental transmission and treatment of syphilis. He also commented on the value of serodiagnosis in mental diseases of noninfectious origin.

Personal.—The Council of the British Medical Association has awarded the Stewart prize to Dr. John C. McVail of Edinburgh, Scotland, in recognition of his services to the community in the advancement of preventive medicine. Dr. McVail delivered the Lane lectures before the Cooper Medical College, San Francisco, in 1906.——Dr. Redmond Roches has been elected president of the Society of Members of the Royal College of Surgeons of England, to succeed the late Dr. J. Brindley-James.——Surg. Rear Admiral A. G. Wildey, England, has been awarded the decoration of the Crown of Italy for services rendered.——Lieutenant-Colonel Mackenzie, deputy sanitary commissioner of the Punjab, India, has been appointed professor of pathology at King Edward Medical College, Lahore.——Lieut.-Col. T. H. Symons has been appointed professor of surgery at the medical college of Madras, and superintendent of the general hospital.——Prof. Albert Calmette of the Pasteur Institute, Paris, has been offered the honorary fellowship of the Royal College of Physicians, Edinburgh, in recognition of his services to medical science.——Dr. J. F. Smith has been appointed lecturer on diseases of the skin at the University of Glasgow, to succeed the late Dr. George McIntyre.——Dr. John Macpherson, commissioner of the board of control for Scotland, has been appointed professor of psychiatry in the University of Sydney, Australia. This chair is the first of its kind in any university in Australia.

London's Venereal Disease Problem.—Col. L. W. Harrison and Dr. F. N. K. Menzies have recently compiled a report of the London venereal disease program. Two preventive measures are stated: (*a*) rendering noninfectious the greater number of infection carriers, and (*b*) discouraging, by education and general propaganda, practices which lead to exposure to infection. The first was attempted by the free treatment centers; the second was undertaken by the National Council for Combating Venereal Disease. A government grant of 75 per cent. of the expense was arranged in order that facilities provided should be available for the whole population of London, 7,659,000. Hospitals were located in various centers to treat venereal disease cases in the early and communicable stages. In a report of the work from 1917 to 1921, it is stated that the educational possibilities of the venereal disease clinic are recognized and the necessity for a general educational campaign is noted. Governmental grants have been received for this purpose and the use of many publications and motion pictures recommended by the American Social Hygiene Association are advocated by the British organization. Seven "hostels" have been established for the infected delinquent and the infected pregnant woman, which are conducted on the lines of a residential club for girls and serve to insure regular attendance at the clinic, as well as to keep the residents usefully employed in various types of work. In addition, the report recommends a further improvement in the nature of a "reception house," to provide immediate shelter for various types of cases now unprovided for. The entire program as outlined by Colonel Harrison and Dr. Menzies runs in close alinement with the measures which have proved effective in the United States.

Deaths in Other Countries

Dr. **Heinrich J. Quincke,** professor emeritus of internal medicine at the University of Kiel, whose name is connected with lumbar puncture and angioneurotic edema, aged 80.——Dr. **Wilhelm O. von Leube,** professor emeritus of clinical medicine at the University of Würzburg, noted for his works on the digestive functions and diseases, and internal medicine in general, test meal, etc., aged 80.——Dr. **N. Swoboda,** of Vienna.——Dr. **Erika Thaer,** assistant at the medical clinic of the University of Giessen.——Dr. **Manuel Iglesias y Díaz,** perpetual secretary of the Academia Nacional de Medicina at Madrid, and senator, aged 84.——Dr. **Jorge Fayet,** of Porto Alegre, Brazil, aged 72.——Dr. **J. de Haan,** formerly director of the public health laboratory in Java.——**Dr. O. Lenoir,** surgeon to an important French railway service, aged 55.——Dr. **R. Luzzatto**, director of the materia medica institute of the University of Modena.——Dr. **G. Meschieri**, director of the hospital at Pollenza, Italy.——Dr. **W. Middleton**, dean of the profession at Valparaiso, Chile, aged 82.——The *Revista de Beneficencia Pública* of Santiago, Chile, mentions also the death of Dr. **G. Murillo Sotomayor**, who had practiced medicine at Valparaiso for fifty-one years, and of Dr. **Ramón Bascuñán Varas**, prominent in the hospital service there.

CORRECTION

Superintendent of Health of Providence, R. I.—In The Journal of June 3, it was stated that Dr. C. L. Scamman would succeed Dr. Charles V. Chapin as superintendent of health, Providence, R. I. Dr. Scamman writes that the appointment is as assistant to Dr. Chapin.

Government Services

Neuropsychiatric Problem Before Veterans' Bureau

According to compilations recently made by government officials, there are 9,027 ex-service men suffering from mental disorders in hospitals; and there are 110,000 claims for neuropsychiatric disabilities on file in the Veterans' Bureau. Thus, the Veterans' Bureau faces the large problem of restoring to mental health thousands of nervous and mentally affected veterans either in hospitals or in outpatient clinics. The bureau reports 34,554 mentally affected men who have been treated since their discharge. The Adjutant-General's Office of the War Department reports 72,000 men discharged from the service with mental disorders.

Of the recent appropriation of $17,000,000 provided by the second Langley bill, which was signed by the President in April, a large part will go to hospitals for neuropsychiatric cases. Of the appropriation of $18,600,000, passed in the first Langley bill, March 3, $7,792,000 was allotted for the construction and enlargement of neuropsychiatric hospitals. The Veterans' Bureau plans to have at least one neuropsychiatric hospital in each of the fourteen districts into which the country is divided.

The neuropsychiatric hospitals at present in operation are located at National Soldiers' Home, Marion, Ind.; Naval Training Station, Great Lakes, Ill.; West Roxbury, Mass.; Philadelphia; Perryville, Md.; Waukesha, Wis.; Augusta, Ga.; Knoxville, Iowa; Gulf Port, Miss.; Fort McKenzie, Wyo.; Bronx, New York, and Little Rock, Ark.

There are 5,500 beds in hospitals owned by the government. There are 4,500 beds in civil contract hospitals. Thus, there are 10,000 beds now available for neuropsychiatric ex-service men. With the funds provided for in the second Langley bill, the Veterans' Bureau plans to expand the capacity of hospitals to 12,000 beds. One of the problems of treatment in these cases is that of community adjustment; successful treatment is best effected in outpatient clinics. The first of these was established at Boston. Other clinics are now operating at Washington, Baltimore, Philadelphia, New York, Cincinnati and Cleveland. It is proposed to have an outpatient clinic as a part of each district hospital. Occupational therapy is a part of the treatment. The bureau has provided for men discharged from hospitals—but not capable of going into regular vocational training—by establishing neuropsychiatric trainees. These are at Silver Springs, Md.; Bellevue College, Neb.; Port Jefferson, N. Y., and Chick Springs, S. C.

Examinations for U. S. Public Health Service

Boards of officers have been appointed by Surgeon-General Cumming of the U. S. Public Health Service to meet in various cities of the country to examine candidates for entrance into the regular corps of the Public Health Service. The boards are meeting at the U. S. Marine Hospital, San Francisco; the U. S. Public Health Service building, Washington, D. C., and U. S. Marine Hospital, Port Townsend, Wash. Boards have also been named to conduct physical examinations of applicants for appointment as cadets in the United States coast guard. These boards have been convened at New London, Conn.; Philadelphia; Chicago; Washington, D. C.; Evansville, Ind.; Detroit; Mobile, Ala.; Charleston, S. C.; Seattle; Boston, and Portland, Maine.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 26, 1922.

Death of Laveran

Dr. Charles-Louis-Alphonse Laveran, professor of the Pasteur Institute of Paris, died recently at the age of 77. He was born in Paris and was the son of a professor of the school of applied medicine and pharmacy. He entered the army medical school at Strasbourg and was intern in 1866 in one of the hospitals in that city for one year, whereupon he received his degree. He was appointed associate professor at the Val-de-Grâce in 1874, and went back to the school as professor from 1884 to 1894. Meanwhile, in 1880 he had been sent to Algeria, and had made his famous discovery of the hematozoon of malaria. It was the first time that a protozoon had been recognized as an infectious agent in the diseases of man, and he encountered difficulties in having it accepted, until Italian investigation confirmed it; and the merit of Laveran's discovery was thus recognized. . In explaining the various phases of the evolution of the hematozoon, Laveran showed the reason why this protozoon is inconstant in the blood. He stated that the hematozoon was transmitted to man by an insect, and, later, the works of Sir Ronald Ross, Sir Patrick Manson and Grassi corroborated his statement. Accepted at first with skepticism, this view has been fully confirmed by subsequent studies and has prompted successful prophylactic measures in countries subject to malaria. Laveran resigned from the army to become professor at the Pasteur Institute, where he continued his studies on parasitology, and especially on diseases due to the trypanosome, trypanosomiasis in particular. In 1907, he was awarded the Nobel prize in medicine. He has been a member of the Academy of Medicine since 1893, and became its president in 1919. He was elected to the Academy of Sciences in 1899. Laveran wrote several important works, the most recent being on trypanosomiasis, written with the collaboration of Professor Mesnil of the Pasteur Institute.

The American Memorial Hospital at Rheims

The laying of the cornerstone of the American Memorial Hospital at Rheims took place, May 21. Hon. Myron T. Herrick, United States ambassador, was present at the ceremony, and said, in part:

> I dedicate this American memorial hospital to the children of Rheims. It is a gift made possible through the energy and affection of the women of the United States, to help you take care of your little children. If women and children had been always and everywhere the first care of men, there would never have been war. Women hate war because they are the creators of the race and they cannot accept the idea of becoming its destroyers. But the heroic spirit, the courage and sacred duty accomplished by the women of France at the front and at the rear, were the greatest moral help of France during the years of sorrow and tribulations. . . . We are offering you our gift with the hope that you will always remember your friends from across the sea who came to you during the dark days.

Monsieur Roche, mayor of Rheims, thanked the United States and its representative in France. He recalled the numerous manifestations of American generosity for the city of Rheims and neighboring regions, to which has been added the construction of this hospital.

Gaps in Public Hygiene Regulations

One of the articles of the declaration of the rights of man says that "liberty consists in the right to do anything that is not prejudicial to others." Those who make public hygiene regulations should be inspired by such a truth. Unfortunately, several of these regulations are antiquated and were made when machinery was not in universal use as it is today. Thus, there are many gaps to be filled. The service of inspection of noisy, dangerous and insanitary establishments is not sufficiently armed against noises of all kinds, which are a nuisance to Parisians night and day.

Numerous complaints are continually being sent to the inspection service against the use of electric sewing machines in tailor shops situated in apartments. Notwithstanding the real inconvenience of the noise made by these machines, the prefect of police was unable to act. A similar case occurred in the suburbs of Paris, where a manufacturer of automobile horns and klaxons tried out his instruments daily to the great annoyance of his neighbors, and again the police were unable to give relief to the complainants. Bad odors are the cause of most of the complaints, but in that case also the regulations are imperfect. Complaints were made against a manufacturer of articles made of "corozo" who dipped them in solution of formaldehyd to harden them. We know how irritating and noxious the vapors of formaldehyd are, but the inspectors could not do anything for the neighbors; for, although the manufacture of formaldehyd is regulated, there are no regulations concerning its use.

A report recently published by Monsieur Portier, general inspector of the service of inspection, gives some interesting figures for the year 1920. The number of authorized buildings to be inspected has increased considerably, and, from 7,680 in 1919, it reached, for Paris and its suburbs, 8,487 in 1920. To these establishments must be added cow barns, pigsties, dogs' hospitals, slaughter houses, scalding houses, etc., numbering 1,110, inspected by veterinaries belonging to the health department. A total of about 10,000 establishments are inspected by one or the other of these departments. The number of complaints in 1920 was 671, and 367 were recognized as justified. Among these complaints, 254 concerned classified establishments and 417 nonauthorized establishments. The number of justified complaints against classified establishments was only 147 out of 8,487 establishments authorized and inspected by the service of inspection, or 1.7 per cent. This shows that the main danger lies in nonauthorized insanitary establishments which cannot be classified on account of present regulations. Up to a few months ago, only seven groups of complaints were considered, but new causes for complaint have been added; as, for example, dust harmful to cattle, measures injurious to vegetation and danger from flies. But this is not sufficient, and it is obvious that laws and regulations should be enacted to fill the gaps which have escaped the foresight of legislators, and to protect the health of the public.

The Hygiene Committee of the League of Nations

The hygiene committee of the League of Nations which met recently in Paris is entrusted with the study of medical and hygienic questions of interest to all governments and requiring their active cooperation. It promotes, in a certain measure, important conferences, which are held in various countries, and studies their conclusions and transmits its opinion to the League of Nations, which, in turn, conveys it to the various governments. The committee of hygiene was called on to examine resolutions adopted by the conference recently held in Warsaw (The Journal, May 6, 1922, p. 1400). It was convened by the Polish government, but this was merely an ingenious means of overcoming certain difficulties, as Russia does not belong to the League of Nations. The conference was in reality inaugurated by the hygiene service of the league. Besides the resolutions adopted by the Warsaw conference, the hygiene committee had to study the sanitary conditions on the eastern coast of the Mediterranean, which are deplorable, on account of the important movements of population, due to pilgrimages. The program of the hygiene committee includes also the study of reports concerning tropical diseases in Africa, the exchange of sanitary personnel between nations and the centralization of epidemiologic information. The Genoa conference decided to send a petition from the International Red Cross Society to the League of Nations asking that the governments recognize the society.

Equipment of Rural Hospitals

The minister of social hygiene, public charity and social welfare has sent to all the prefects a circular concerning improvements to be made in hospitals in their departments. The circular recalls the fact that, at the very beginning of its existence, the ministry of hygiene insisted that hospitals in important centers be made to conform to the exigencies of modern science. This appeal had no effect, and the subject is taken up anew with the determination that it shall bear fruit. It is important that each department have a hospital with all modern medical and surgical equipment, with roentgenographic service, bacteriologic and organic chemistry laboratories, etc. In less important centers, hospitals should have at least operating and sterilizing rooms. Industrial centers also should have adequate equipment. The minister of hygiene asked the prefects to send him the floor plans of hospitals in their departments, with a list of their equipment and special services offered.

LONDON

(From Our Regular Correspondent)

May 29, 1922.

A Standardized Textbook of Surgery

In a letter to the *Lancet*, C. A. Morton, professor of surgery to the University of Bristol, points out how strangely contradictory the most popular textbooks of surgery are on some important points. The result is that a student who has studied one book may, in an examination, be placed unjustly at a disadvantage because he gives an answer which, while he is quite warranted in giving it, differs from the view of the examiner. In an oral examination, he might be able to justify himself to the examiner by giving his authority; but in a written examination there is no such opportunity, and many examiners do not realize how diverse are the views expressed in textbooks. Professor Morton, therefore, thinks that there should be one recognized textbook of surgery, which, for examination purposes, should be regarded as authoritative. When a new disease is described, it is sometimes difficult to decide whether a student should be expected to know about it. This difficulty would be overcome if the examiner were guided by the fact that it was included or not included in the most recent edition of the standard book. The book should be published under the direction of a committee of surgeons who are teachers. It would be written by one surgeon, but the proofs of each chapter, or section of a chapter, could be submitted to each member of the committee, who would meet and discuss it, and decide on the final form it should take. Such a committee could be appointed by the Council of the Royal College of Surgeons, and the book could be used for the ordinary examinations in surgery by the college and by any university which chose to use it.

Professor Morton gives several examples of the contradictions to be found in the most popular textbooks of surgery of the day—"Thompson and Miles," "Rose and Carless," "Gask and Wilson," and Bowlby's "Surgical Pathology." Thus, the first regards acute necrosis as essentially an acute osteomyelitis, starting in the marrow and extending to the periosteum; the second says that it starts either as a periostitis or in the medulla, or as an acute epiphysitis; and the last describes it as an acute infective periostitis, secondarily involving the underlying bone and medulla. As to treatment, there is a similar divergence. The first advises free opening of the medulla when there is sufficient evidence that suppuration has occurred. It must be presumed that this refers to suppuration in the medulla, but we are not told what the evidence is. The second advises that the medulla be opened in all cases in which there is pus under the periosteum. The third advises, as all writers do, free incision of the periosteum to evacuate pus beneath, but, if pus is present here, does not seem to favor opening the medulla.

Insanity as a Defense in Trial for Murder

The case of Ronald True, who was convicted of murder, notwithstanding uncontested medical evidence that he was insane both at the time of his trial and when he committed the crime, was described in a previous letter (The Journal, May 27, 1922, p. 1651). The case has been taken to the court of criminal appeal. The lord chief justice, in giving judgment dismissing the appeal, said that it had been contended for the appellant that the verdict should have been "guilty but insane," and that, as the medical evidence was that he was certifiably insane when he was said to have committed the crime and as no medical evidence was called to contradict that view, the jury were bound to act on that evidence as far as insanity was concerned. In the opinion of the court, that view was not sound. The jury was entitled to say that the facts of the case taken as a whole, apart from the question as to whether the prosecution called medical evidence on the special point, satisfied it that, at the date of committing the act, the prisoner was not insane. The question was also raised as to whether the judge had put the question of insanity properly to the jury. It was admitted that he had permitted a latitude beyond the rule in the McNaughten case. But it was said that so imperfect was the law that the judge did not state, as he should have stated, the evidence for the consideration of the jury. According to the rule, every man was presumed to be sane and responsible for his crimes until the contrary was proved; and, to establish a defense on the ground of insanity, it must be proved that, at the time of the act, the accused was laboring under such a defect of reason from disease of mind as not to know the nature and quality of his act; or, if he did know it, that he did not know that what he was doing was wrong.

For the appellant, it was contended that this old and salutary rule had been superseded and altered, and that now there was, and ought to be, an extension of this kind; that although the accused might have known what he was doing and might have known that what he was doing was wrong, nevertheless, if, by reason of disease of the mind, he was unable to control his action, he was still excused. In the opinion of the court, that proposition was not accurate. It was true that an extension of the rule had at different times been suggested; in the cases quoted, that proposed extension had not been acted on or approved. In the present case, the judge clearly put it to the jury that, even if the prisoner knew the physical nature of the act, and that it was morally wrong and punishable by law, and yet was from mental disease deprived of the power of controlling his actions, the verdict should be "guilty but insane." Nevertheless, the jury found the appellant guilty of wilful murder. Apart from the question of appeal, the home secretary had certain powers which, in a proper case, were always exercised.

A British Authority's Impressions of American Science

Some time ago, the Radium Corporation of Czechoslovakia decided to employ a British expert to go to the United States to investigate recent work in that country on the treatment of disease by radium. Dr. W. S. Lazarus-Barlow, professor of experimental pathology at the Middlesex Hospital, was chosen. He has now returned, after a tour of six and a half weeks in the United States, and has given his impressions. He traveled more than 4,000 miles in that country and visited the principal cities. He says that this country and the United States are at the parting of the ways. The states have wealth and extraordinary facilities, and are now looking for the men to utilize them. In England, we have the men, but not the facilities. If the Americans can develop men of the type we have in the old country, there is no limit to the distance they can go in medical research. On the other hand, if we can provide the facilities, the quality of our men is such that we can hold our own. We cannot compete with America in facilities, but we can in brains. But if our men are not supplied with facilities for the rapidly extending medical research of the present day, we shall fall behind in the race. Such a subsidy as is placed at the service of the Rockefeller Institute is unknown in this country.

As regards the quantity of radium available for the treatment of malignant disease, the United States has an advantage of about 10 to 1 compared with us; it has 80 gm., worth $12,000,000. As for eminent men engaged in any particular branch of research, America does not fall behind any country; indeed, there is no substantial difference in this respect between the various countries interested in science. The strength of America lies in the numerous foundations for medical research, and in the number of young men devoting themselves to it. Her danger is that she may be overwhelmed by attention to meticulous detail. Given avoidance of that, there is no predicting the position she may attain in the next twenty-five to fifty years. Our danger lies, not in this direction, but in inadequate provision of facilities for young men whom we are training. At the same time, it is desirable that English lack of attention to detail be corrected somewhat, and that in this respect we take a leaf out of the book of our American cousins.

Professor Lazarus-Barlow does not desire to see here institutions as large as those in the United States, because of the amount of administrative detail that they impose on the director, taking him away from his more proper duties of research work, and also because of the large administrative staffs required. Moreover, British individualism shows itself best in institutions of moderate size. He considered that the quality of American research has improved noticeably in the last twenty years.

Professor Lazarus-Barlow wished to add a word of appreciation of the hospitality and courtesy with which he was received everywhere in America, not only by well-known persons but by the public at large.

A Birth Control Conference

An international conference on birth control will be held in London, July 11-14. The fee for membership is $2.50, but physicians can become honorary members by applying to the medical secretary, and are invited to contribute papers. The conference is divided into sections as follows: eugenics (president, Professor Macbride); economics (president, Prof. J. M. Keynes); national and international aspects (president, Mr. Harold Cox); moral and religious aspects (president, the Rev. Gordon Lang); contraceptive section (president, Dr. Norman Haire). The contraceptive section will be open only to physicians and students.

The Association of Surgeons

The third annual meeting of the Association of Surgeons was held at Leeds under the presidency of Sir Berkeley Moynihan. The association does not publish its discussions, so that speakers can express their views with perfect freedom. The chief subjects were: the early symptoms and signs of gallstones, the choice between cholecystotomy and cholecystectomy, the association of gallstones and pancreatitis, the surgery of the parathyroids, and operations on the spine for tuberculous disease. To further the advance of surgery, it was decided to offer a medal for some outstanding contribution to surgery, in any land. A scheme to provide financial assistance for the purposes of collective information or research in surgery was sanctioned. The operative treatment of carcinoma of the tongue was chosen as the first subject. The next meeting will be held in London in 1923.

BELGIUM

(From Our Regular Correspondent)

Liége, March 12, 1922.

Reforms in the Medical Service

Dr. Réné Sand has just published a report concerning reforms in the medical and welfare service. The necessity for such reforms is emphasized by the fact that medical science has made considerable progress, while medical organization has remained stationary. On the other hand, the economic side of the question is as important as the efforts made to assure quick and complete cure of patients; and it is the aim of charitable institutions to increase the productiveness of the nation. In the first place, reforms in government services would include the creation of a ministry of hygiene, charity and welfare. This would centralize all efforts, which are now scattered all over the country. This organization would control the masses by the enactment of an administrative code. Reforms in the medical service will follow the same principles. In each commune, a clinical dispensary will be the primary health center, and will control medical institutions for the poor, maternity hospitals, hospital wards (a minimum of eight beds) antituberculosis and antisyphilitic dispensaries, a dispensary for schoolchildren, consultation rooms for nurslings, and vaccination and disinfection services. Each primary center will be connected with a secondary health center, which will reproduce, on a larger scale, the plan of the primary center; all specialties will be represented and complete equipment will permit the diagnosis of disease and the treatment of patients with the most improved methods. These secondary centers will be connected with main health centers, represented by the four university hospitals. Permanent connection will be established between these three different centers, so that the best care will be given to inhabitants of the most remote villages. Each communal or intercommunal commission will be affiliated with a neighboring secondary center and will be free to attach itself to any one of the four main centers. It is desirable that primary and secondary centers be accessible to all practitioners, and that poor patients be treated gratuitously. Those belonging to associations, those injured while working, and regular patients should pay variable amounts for treatment. Physicians' fees will be paid by the welfare bureau, the associations, insurance companies or the patients themselves.

These reforms will undoubtedly increase the efficiency of medical assistance; and the moral and material interests of physicians, druggists, nurses, and midwives will be protected. A step toward more important reforms will have been taken for the protection of public health and the progress of medical defensive measures which are indispensable to the prosperity and strength of the nation.

School for Nurses

Monsieur Verge recently submitted a report explaining the government's conception of the rôle of a nurse, showing how important it is for her to follow a course in a hospital. The teaching will have a practical character, and the government demands that nurses spend some time in hospitals either during or after their studies. Two years is required for hospital and visiting nurses and one year for those who are to care for the insane. Thus, schools for nurses in Belgium will be on an equal footing with those of neighboring countries. A school can be established only in an important center, and must be attached to a modern hospital, fulfilling certain conditions and having at its disposal all medical and surgical means. Schools shall be improved, but their number shall not be increased in small localities. At the present time, the Fedération des Ecoles d'Infirmières has only six schools able to fulfil the required conditions: the Ecole des hôpitaux d'Anvers (Stuyvenberg); the Ecole Cavell; the Ecole Saint-Camille; the Ecole de l'hôpital Saint-Jean in Brussels; the Ecole des infirmières in Charleroi, and the Ecole provinciale des infirmières in Ghent. Numerous applications have been made, and many nuns have made applications on Cardinal Mercier's suggestion.

BUCHAREST

(From Our Regular Correspondent)

May 19, 1922.

Danger of Plague

All the important cities of Roumania have been informed by the chief board of sanitation in Bucharest that in the docks of Patras in Greece a plague is raging, with many fatalities. The passengers coming from Greece on ships are held in quarantine in Constantra for eight days. When leaving the port, they have to signify where they are going; and, after arrival in a Roumanian town, have to present themselves for further medical examination. By this stringent measure, they have succeeded in shutting out the plague, and up to now not one case of plague has occurred in Roumania, although there is a fairly large amount of traffic between Roumania and Greece.

The Compulsory Medical Examination of Couples to Be Married

After the introduction of many important social arrangements; the nationalization of the medical treatment of workmen; the establishing of free venereal and tuberculosis clinics in every large town; the granting of state support for invalids incapacitated for work by reason of industrial accidents, in cases in which the employers are unable to support them by reason of bankruptcy, or the company has ceased to exist, the government has sent out a commission to study the different methods of controlling the health of couples about to be married in the different states. The commission has completed its report and recommends the method practiced in North America. It proposes to forbid all matrimonial offices to wed couples unless they produce a medical certificate (from any physician of their choice), the certificate to be signed by a sanitary officer, who has the right to examine the parties if any doubt arises as to the validity of the certificate. The discussion of this question in the daily papers is prompting intelligent fathers to demand, before consenting to the marriage of their daughters, that the suitor produce medical evidence as to his general health and freedom from venereal disease. Thus, a new problem has been added to the many questions now confronting those engaged in the practice of medicine.

The Reform of the Workmen's Compensation Act in Roumania

The minister of public welfare has delegated Dr. Georg Cimponariu, the director of the central sickness club, to find out how unification of the sickness club systems may be accomplished. The newly adjoined states, namely, Transylvania, Bessarabia and Bukowina, each have a different system. In Bessarabia there is no real system, the treatment of workmen being very primitive, both from a social and from a medical point of view. The most perfect system is the Transylvanian (late Hungarian), and therefore this will be adopted even in the old kingdom of Roumania. Dr. Cimponarin says that the most important task of the sickness club will be not only to give temporary help to the patients, but also to exercise medical control over all industrial enterprises and manufactories, and thereby prevent the industrial diseases. In the interest of disease prevention, they will hold the management of the works to the strictest observation of the rules. The protection of workmen against tuberculosis, too, will be an important task. Mothers will be granted a considerably greater support than prescribed by the law. A working mother shall be given a vacation beginning from four to six weeks previous to her confinement, and continuing until eight weeks thereafter. Infants will be under medical supervision up to a certain age. In the larger factories, day homes will be established, where working mothers can feed their babies. It is unfortunate that there is no satisfactory method as yet for protection against venereal diseases, which claim so many from the working class. According to recent statistics, every workman loses, on an average, twenty-six working days in a year on account of venereal diseases. The Central Workmen Insurance Offices have also planned the erection of sanatoriums, although the present low rate of exchange prevents building. For this reason, contracts were made with various private sanatoriums for a certain number of beds.

Roentgenology a Regular Subject in the Universities

Up to now, roentgenology has been a subject which was compulsory in every university in Roumania. However, students were not obliged to pass an examination in it. By reason of a recent resolution, the subject of roentgenology is included among the examinations, both the theoretical and the practical phases. If a student fails, he has to continue the subject for two seasons. Coincidently with this order, all university clinics have been furnished with large roentgen-ray machines of the American Snook transformer type, to enable students to become experts in roentgen-ray technic while in the clinics.

The Telephone Boycotted by Physicians

In Transylvania, the richest and most flourishing part of New Roumania, the postal management has raised the fee for telephones. Private persons pay for one year's telephone service 1,000 lei; professional men, lawyers and medical men, and in general those persons who have a signboard outside the house, that is, merchants, tailors and the like, pay 3,000 lei a year; and banks pay 5,000 lei. To this is added 500 lei yearly for the upkeep of the wiring, and every new subscriber has to pay 1,000 lei for the installation of the telephone. The medical association has sent a memorandum to the postal management asking for the reduction of the exorbitant fee of 3,000 lei (as one medical visit in the patient's home costs on an average 20 lei, the telephone fee thus equals the cost of 150 medical visits a year), in the interest of the public and the health of the people. They argued that, by reason of the high telephone fee, the number of subscribers decreased considerably, and thus the value of the telephone is illusory; but still physicians are obliged by their patients to have telephones, and it is a fair demand that they be placed on equal footing with private persons, who pay only one third, that is, 1,000 lei, for their telephones. The memorandum was refused by the ministry of commerce; thereupon the medical association held a general meeting, in which it was resolved that all physicians will give notice to the postal management that they cease subscription.

BUENOS AIRES

(From Our Regular Correspondent)

April 18, 1922.

Centenary of the Academy of Medicine

The Academy of Medicine is planning to commemorate the centenary of its organization with a series of celebrations. April 18, a public session will be held at which prizes will be given. April 19, the cancer institute, directed by the academy of medicine, will be inaugurated. Both the hospital and the laboratory of the institute are reported to be well equipped. At the same time, the corner-stone of a pavilion for experimental research will be laid. This pavilion will be built with a gift of $200,000 from the family of the late Emilio Costa.

Mediterranean Fever

For the first time, Mediterranean fever has been reported in this country. The cases, which were in Cabrera, province of Cordoba, where there are many goats, were discovered by Dr. Fornesio; and the bacteriologic and immunologic tests were made by Dr. S. Dessy, of Buenos Aires.

The Bacteriophagus

The study of the bacteriophagic principle has awakened much interest all over the world. D'Herelle states that it is a cultural, filtrable virus, having the property of dissolving bacteria (Shiga-Kruse, dysenteric bacillus, etc.). Kabeshima thinks the bacteriophagus is a ferment; Bordet and Ciuca, a hereditary weakness of germs which acquire the property of dying readily. April 6, two papers were presented on this subject before the society of biology by C. E. Pico and A. Bachmann, and L. I. Aquino. In the experiments reported in the two articles, the bacterial lysis was produced by trypsin and pancreatin; in the first instance, with boiled papayotin, and in the second, with a filtrate of the *Lachesis alternatus* poison. This lytic property was transmitted serially. These experiments apparently support the view that the bacteriophagus is not a virus, but Aquino and Bachmann think that even this fact has not been completely proved.

Hookworm Disease

The director of the Bacteriologic Institute of the National Department of Health, Dr. A. Bachmann, has verified the report that hookworm disease is prevalent in the province of Corrientes on the Paraguayan border. The disease probably also exists at Chaco and Formosa. These are the only zones in this country where people go barefooted. At Corrientes, the percentage was rather high, being 94 per cent. in some zones; and it is suspected that the general average will be 50 per cent. Dr. Bachmann has suggested preventive measures and advised treatment with chenopodium oil.

Official Inauguration of University

The Universidad del Litoral is already in operation, but it will be officially inaugurated on April 18, by J. S. Salinas, secretary of public education. The ceremonies will be held at the Rosario Medical School. The Federation of Students has vetoed the celebration, stating that the authorities appointed by the government do not fill "student aspirations" and that politics has dictated the appointments; therefore, a student strike is threatened. The personnel consists of Dr. Abalos, director; Dr. R. Araya, dean; N. Tagliavache, professor of topographic anatomy; D. Staffiere, clinical medicine; J. B. Abalos, clinical surgery; R. B. Borghi, obstetrics; J. Moreno, clinical therapeutics; M. S. Pigneto, public health; E. Carrasco, opththalmology; R. Araya, gynecology; T. Fracassi, psychoneuropathology; G. Bosch and A. Scarano, psychiatrics. In general, they are prominent physicians whose appointments should be above objection. The only drawback is that some professors are still living at Buenos Aires, at a distance of 180 miles, and they spend at Rosario only the time necessary to attend to their class work. This is the case with the professor of physiology, who also holds chairs at La Plata and Buenos Aires. The Universidad del Litoral has a bright future, provided present deficiencies are obviated. One of the professors, A Caretti, resigned because he was not able to reside at Rosario.

BERLIN

(From Our Regular Correspondent)

May 20, 1922.

Medical Fees

The enormous and continual increase in the cost of living necessitates, from time to time, an upward readjustment of medical fees. That the public does not rejoice over the fact will be readily understood, especially since doctor bills in general are not viewed with particular delight. According to a resolution of the executive council of the Berliner Aerzte-Kammer, as announced a few days ago, the fee for an office consultation for persons in moderate circumstances will now be from 30 to 40 marks; for a visit, from 50 to 75 marks. Patients who are comfortably situated financially will be required to pay for an office consultation not less than 70 marks, and for a visit in the home not less than 100 marks. The fees for other forms of medical assistance will be figured according to the official tariff. The official organ of the social democratic party announced the increase in the medical tariff under the heading, "Sickness a Luxury." This mode of referring to the fact is quite in keeping with our present-day political and social conditions and shows that the demands on life, as lived by the educated classes, are not fully understood or appreciated; it being quite evident that, in reviewing "social" conditions, the needs of the laboring class are given first consideration. When, as was officially reported, the increase in the cost of living, for the period of March and April, amounted to more than 20 per cent.; when a pound of butter now costs from 80 to 90 marks as against 2 marks in peace times; when a decent suit of clothes costs from 4,000 to 5,000 marks, it would seem that, even in labor circles, it ought to be understood that medical fees must be advanced accordingly, in order to meet the needs of the profession. Unfortunately, however, there does not seem to be in Germany much evidence of such understanding, although, under the force of circumstances, a slight improvement is noticeable since the revolution.

The Eight-Hour Day in Relation to the Hospital Personnel

The eight-hour day as applied to hospitals came up recently for discussion at a Berlin municipal council. Professor Kirchner, a former Prussian ministerial director, expressed himself as strongly opposed to the application of the eight-hour law to hospitals. The care of patients, he stated, is not like a manufacturing industry and does not lend itself to the organization of shifts. With the strict application of the eight-hour system, even patients who are seriously ill would be attended, during the twenty-four hour period, by three different nurses; in which case, there would be no assurance that all three nurses understood the patient's condition and would put forth the necessary conscientious endeavor—there would be a danger that the patient might come to be regarded as a mere "source of revenue." In fact, it is reported that, in a hospital here in the city, a nurse declined to procure an icebag for a patient who was seriously ill, giving as the reason for noncompliance with the request that her time was almost up. There is scarcely a doubt that, before long, the patients in the hospitals (and particularly those of the laboring class) will themselves demand a revision of the present application of the eight-hour day to nurses.

Berlin University Items

When, two years ago, Professor Flügge, the hygienist, retired from his professorship, by reason of his age, Professor Uhlenhuth, who was formerly a member of the faculty of the University of Strasbourg, was, as I stated in a previous letter, offered the vacant post in Berlin, but was obliged to decline the honor because of the inadequate salary that the position paid. Later, a call was sent to Professor Hahn, head professor of hygiene in the University of Freiburg. For various reasons, no final decision in the matter was reached. In the first place, there was the problem of the poor housing conditions, which often plays such an important part in the adjustment of our affairs. Then there were financial difficulties connected with the needed improvements in the hygienic institute. There is some ground for believing that matters have now reached a final settlement and that the regrettable pilotless condition of the institute will soon be remedied.

Another appointment has been made which fills a vacancy that has existed for some time. Professor von Eicken of Giessen has been called to fill the chair of laryngology, as the successor of the late Professor Killian, formerly director of the Clinic for Diseases of the Throat. This appointment has a certain importance. As was the case after the death of the Berlin laryngologist, Prof. B. Fränkel, so, again, after the death of Killian, a movement was started to combine the laryngologic clinic and the ear clinic and to place both in charge of the director of the latter, Professor Passow. Fortunately, this plan was not consummated, for it would have impaired the quality of the instruction in laryngology.

Quadruplets

As reference to the reports of the statistical bureau will show, there has been scarcely a year, during the first two decades of the present century, in which the birth of several groups of quadruplets has not been recorded, which furnishes further evidence of the fertility of German women. In 1901, 1906, 1916 and 1919, only one group of quadruplets was born each year. However, in 1903, 1904, 1912 and 1914, there were two groups each year, and in 1905 and 1909, three groups. In 1902, there were three groups of quadruplets and one group of quintuplets. In 1908, 1910, 1911, 1915 and 1917, there were four groups of quadruplets each year, and in 1913 there were six such groups. The German people were also richly blessed with triplets during these two decades. The maximum number of triplets were born in 1904 (291), and the minimum number in 1918 (111). The year 1904 has also the largest number of twin births to its credit; namely, 26,751 out of 54,383 multiple births (individual children). While the frequency of multiple births during the past twenty years bears, in the main, the usual ratio to the total number of births, the year 1919 constitutes an exception, since, for this year, the proportion of multiple births to the total number of births was 2.68; whereas, in previous years, the proportion was, in almost every instance, under 2.60 per cent. In 1919, there were 17,333 groups among the multiple births, and 34,856 children were thus born. There were, in that year, 17,144 pairs of twins born; in 5,513 instances, both twins were boys; in 6,561 cases, there was a boy and a girl, and in 5,070 instances, the twins were girls. There were 188 groups of triplets that year; in fifty-four instances all three triplets were boys, in forty-one cases there were two boys and a girl, in fifty-two cases one boy and two girls, and in forty-one instances all three triplets were girls. The quadruplets born in 1919 were all girls.

Marriages

CHARLES EVERETT MACDONALD, Major, M. C., U. S. Army, Hoboken, N. J., to Miss Charlotte Elizabeth Griffith of Buffalo, June 2.

GEORGE FRANCIS HILTON, Wenatchee, Wash., to Miss Lillian Hanson of College Place, Wash., at Nappel, Wash., May 25.

EDWARD EVERETT H. MUNRO, Grand Junction, Colo., to Miss Blanche Calhoun of Nashville, Tenn., at Omaha, May 1.

GEORGE WASHINGTON WILHITE, Manila, P. I., to Miss Julia Marion Smith of Orange, Texas, May 25.

GEORGE H. ROCKWELL, Syracuse, N. Y., to Miss Theresa Peck of Whitney Point, N. Y., June 17.

DUDLEY ALVEY PFAFF, Indianapolis, to Miss Frances Parsons of Binghamton, N. Y., June 10.

CURTICE MACK ROSSER, Dallas, Texas, to Miss Mary Lou McGregor of Temple, recently.

ROBERT RAGLE ACRE to Miss Beulah Gibson, both of Evansville, Ind., April 27.

CHARLES DEAN URY to Miss Hazel Schulz, both of Toledo, Ohio, April 22.

FINIS LONDON to Miss Emma Downey, both of Woodburn, Ky., April 1.

Deaths

Hildegarde H. Langsdorf Carlton Lee ⊕ Carlisle, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1891; served on the medical staffs of the Harrisburg Insane Hospital, the Norristown Insane Hospital, the Tewksbury Almshouse, and the Sarah Todd Memorial Hospital; for eight years secretary of the Cumberland County Medical Society; lecturer on social and economic subjects; died, April 21, aged 53, at the University Hospital, Philadelphia, from carcinoma of the liver.

Hugh McGuire Taylor, Richmond, Va.; Medical College of Virginia, Richmond, 1878; member of the Medical Society of Virginia of which he was formerly president; emeritus professor of clinical surgery at Medical College of Virginia; formerly president of the Richmond Academy of Medicine; member of the Southern Surgical and Gynecological Association, and the American Association of Railway Surgeons; died, May 30, at his country home in Westhampton, aged 66.

Lasher Hart ⊕ South Pasadena, Calif.; Syracuse University College of Medicine, Syracuse, N. Y., 1903; served in France with the M. C., U. S. Army, with the rank of captain during the World War; member of the American Urological Association and the Clinical and Pathological Society of Los Angeles; specialized in urology; died, May 25, at the Mayo Clinic, Rochester, Minn., following an operation, aged 45.

Joseph Trimble Rothbrock, West Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1868; member of the Medical Association of the State of Pennsylvania; veteran of the Civil War; professor of botany at his alma mater 1877-1893; editor of many works on botany, including "Medical Botany of North America" and "Flora of Alaska"; died, June 2, aged 83, from heart disease.

Frances Armstrong Rutherford ⊕ Grand Rapids, Mich.; Woman's Medical College of Pennsylvania, Philadelphia, 1868; in active practice in Grand Rapids for more than half a century; formerly obstetrician and gynecologist to the Blodgett Memorial Hospital; died suddenly, May 24, aged 82, from cerebral hemorrhage.

Harvey S. Wolfe, New Albany, Ind.; Kentucky School of Medicine, Louisville, 1860; Medical Department of Louisville, 1867; member of the Indiana State Medical Association; formerly editor of the Corydon *Democrat;* died, May 30, aged 89, at the home of his granddaughter at Corydon, Ind.

Leo Thomas Mullahey ⊕ Shenandoah, Pa.; Jefferson Medical College, Philadelphia, 1914; served in the M. C., U. S. Army, during the World War; honorably discharged, March 25, 1920; died, May 27, aged 31, at the St. Agnes' Hospital, Philadelphia, from meningitis.

Henry Horace Latimer ⊕ Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; formerly professor of dermatology, Bennett Medical College, and on the staff of the Cook County Hospital; died, June 10, aged 68, from paralysis of the throat.

Frank Elmore Constans ⊕ Brockton, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1889; consulting physician and electrotherapeutist to the Brockton Hospital; died suddenly, May 29, aged 55, from angina pectoris.

Herbert Gardner Hughes, Cambridge, N. Y.; Indiana University School of Medicine, 1918; served as ship surgeon in the U. S. Navy, during the World War; died, May 17, aged 32, from endocarditis and septicemia, at Troy, N. Y.

Wilmer Austin Tims ⊕ Cleveland; Homeopathic Hospital College, Cleveland, 1888; formerly professor of anatomy at Cleveland College of Physicians and Surgeons; treasurer of the Huron Road Hospital; died, May 19, aged 58.

Peter Wilson Frace ⊕ Hoboken, N. J.; University of Pennsylvania Medical School, Philadelphia, 1894; died, May 25, at the Fairmount Surgical Sanatorium, Jersey City, aged 61, from pneumonia following an appendectomy.

Isaac Irving Good, Bellevue, Ohio; Medical Department of Western Reserve University, Cleveland, 1892; member of the Ohio State Medical Association; died, May 26, aged 57, at Battle Creek, from cerebral hemorrhage.

Joseph B. Waples, Georgetown, Del.; University of Maryland School of Medicine, Baltimore, 1868; formerly a member of the city council and the board of education; died, May 19, aged 75; from cerebral hemorrhage.

John Woodson Caines ⊕ Cuyahoga Falls, Ohio; Baltimore Medical College, 1905; served as lieutenant in the M. C., U. S. Army, during the World War, honorably discharged, May 16, 1919; died, June 5, aged 42.

James C. Bishop, Omaha; John A. Creighton Medical College, Omaha, 1899; member of the Nebraska State Medical Association; died, May 14, aged 53, at the Swedish Mission Hospital, from erysipelas.

Edmund Franklin Saxon, Winder, Ga.; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1905; member of the Medical Association of Georgia; died, May 1, aged 44, from cerebral hemorrhage.

Emmett Flagler, Troy, N. Y.; Albany Medical College, N. Y., 1865; veteran of the Civil War; for several years state inspector of public works; died, May 31, aged 82, following a long illness.

Milton William McMurrey, Houston, Texas; University of Pennsylvania School of Medicine, Philadelphia, 1910; member of the State Medical Association of Texas; died, May 23, aged 38.

Burton Theodore Norall, Minneapolis; University of Nebraska College of Medicine, Omaha, 1921; intern at the Abbott Hospital; died, April 18, aged 26, from septic sinus thrombosis.

Augustus Erdman Marden ⊕ Phoenix, Ariz.; Boston University School of Medicine, Boston, 1889; for eleven years physician at the Phoenix Indian School; died, May 19, aged 58.

Tyre H. Dinwiddie, Higbee, Mo.; Missouri Medical College, St. Louis, 1879; member of the Missouri State Medical Association; died, May 21, aged 63, from cerebral hemorrhage.

Marietta Ellis Monroe Flanders, Hopkinton, N. H.; College of Physicians and Surgeons, Boston, 1894; member of the New Hampshire Medical Society; died, April 30, aged 61.

Byron Ferguson, Kanorado, Kan.; Barnes Medical College, St. Louis, 1898; died, May 22, aged 55, at the St. Luke's Hospital Association, Denver, from pneumonia.

John Henry Childs ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1905; died, May 23, aged 40, from pneumococcic meningitis.

Amos Virgil Cooper ⊕ Modale, Iowa; Drake University College of Medicine, Des Moines, Iowa, 1905; died, May 22, aged 41, at the Lord Lister Hospital, Omaha.

Emanuel Walton Snyder, Marysville, Pa.; Jefferson Medical College, Philadelphia, 1889; for several years president of the school board; died, May 21, aged 64.

⊕ Indicates "Fellow" of the American Medical Association.

William Lowry, Teague, Texas; University of Nashville Medical Department, Nashville, Tenn., 1861; Confederate veteran; died, May 20, aged 87, from senility.

Overton Leonidas Baker, Ronceverte, W. Va.; Medical Department, University of Louisville, 1894; died, May 11, aged 60, from uremia and chronic nephritis.

Percy Lawrence DeNoyelles, Albany, N. Y.; Albany (N. Y.) Medical College, 1920; on the staff of the Albany Hospital, where he died, May 23, aged 28.

Arthur M. Gerow, Cheboygan, Mich.; University of Buffalo Department of Medicine, 1868; member of the Michigan State Medical Society; died, May 21, aged 76.

M. A. Taylor, Torras, La.; Louisville Medical College, Louisville, Ky., 1883; member of the Louisiana State Medical Association; died, May 21, aged 63.

Nelson Stiles, Medford, Okla.; College of Physicians and Surgeons, Baltimore, 1882; died, March 21, aged 65, at Wichita, Kan., from heart disease.

John Henry Stanton, Chariton, Iowa; Rush Medical College, Chicago, 1892; member of the Illinois State Medical Society; died, May 27, aged 59.

Edmund Jennings Lee, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1876; died, May 25, aged 68, from heart disease.

William Ross Clark ⊕ East Liverpool, Ohio; Columbus Medical College, Columbus, Ohio, 1881; died recently, aged 63, from cerebral hemorrhage.

Scott Fraser Hodge, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1900, died, May 31, aged 45, from pneumonia.

Isaac Le Roy Mansfield, Oroville, Calif.; Philadelphia University of Medicine and Surgery, Philadelphia, 1869; died, March 23, aged 74.

Angus Alexander Mackintosh, North Fairfield, Ohio; Cleveland Homeopathic Medical College, Cleveland, 1901; died, April 18, aged 56.

Milton C. Sprague, Summerford, Ohio; Cincinnati College of Medicine and Surgery, Cincinnati, 1874; died, March 24, at Columbus, aged 72.

Herbert Edwin Baright ⊕ Saratoga Springs, N. Y.; University of Michigan Medical School, Ann Arbor, 1893; died, May 27, aged 54.

Thomas F. Reed ⊕ Massillon, Ohio; Medical Department of the Western Reserve University, Cleveland, 1893; died, May 27, aged 51.

Walter Joseph Henesey, Los Angeles; Medical Department, University of California, San Francisco, 1899; died, May 27, aged 44.

Charles Wolff Smith ⊕ Townsend, Mont.; Medical Department of the University of Cincinnati, 1904; died, May 20, aged 55.

Frank S. Sturdevant, Vanoss, Okla.; Medical Department, University of Tennessee, Nashville, 1891; died, May 25, aged 60.

Henry Orlando Marcy, Jr. ⊕ Newton, Mass.; Medical School of Harvard University, Boston, 1897; died, May 29, aged 51.

John Friederick Muller, Brooklyn; Eclectic Medical College of the City of New York, 1877; died, June 3, aged 75.

Russell Clifford Edwards, Newark, Ohio; College of Physicians and Surgeons, Baltimore, 1892; died, April 13, aged 59.

Francis H. Schell, Cincinnati; Homeopathic Medical College of the State of New York; died, April 21, aged 81.

Mivinda M. Wheeler, Noblesville, Ind.; Beach Medical Institute, Indianapolis, 1885; died, May 26, aged 74.

Seymour Harry Smith ⊕ Omaha; Medical Department, Omaha University, 1891; died, April 18, aged 53.

Benjamin F. Bennett, Fullerton, Ky.; Eclectic Medical Institute, Cincinnati, 1881; died, May 9, aged 79.

Benjamin S. Burton, Valdosta, Ga.; Atlanta Medical College, Atlanta, Ga., 1891; died, May 7, aged 55.

Charles M. Smethers, Spiceland, Ind.; Illinois Medical College, Chicago, 1903; died, May 31, aged 42.

Ira J. Baker, Logansport, Ind. (licensed, Indiana, 1897); died, May 24, aged 88, from uremia.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

VITA ZEST NOT ADMITTED TO N. N. R

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. Puckner, Secretary

Vita Zest, sold by the Vita Zest Co., Inc., New York City, comes in the form of capsules. It is said to be composed of 83⅓ per cent. dried brewers' yeast and 16⅔ per cent. of "highly concentrated vitamin extracts (Fat Soluble A, Water Soluble B and Water Soluble C)." It is claimed that "the vitamin extracts are concentrated from various fruits, greens, cereals, such as have an abundance of vitamin." The amount of material in each capsule is not declared nor is any information offered to show that the amount (or potency) of the three vitamins said to be contained in the vitamin extract is determined or controlled. In the advertising circular which accompanies the trade package it is asserted:

> "Prominent physicians have recognized the wonderful effect following the taking of yeast and have recommended its use in the treatment of intestinal disturbances, autointoxication, chronic constipation and in all stomach disorders."

This statement is not warranted by the facts and ascribes therapeutic properties to Vita Zest which it does not possess. Further, the small number of physicians who have advocated the ingestion of yeast as a therapeutic measure, advise doses much larger than those presented by Vita Zest. The contents of each capsule weigh about 0.4 gm. (6 grains); hence, there cannot be present more than 0.34 gm. (about 5 grains) of dry yeast. In this circular it is asserted that:

> "In addition to improving the condition of the system in general, the continued use of Vita Zest will help to produce a clear complexion and keep the skin in a healthy condition free from disfiguring pimples, boils and blackheads."

Even if it could be shown that Vita Zest contained appreciable amounts of vitamins, the most enthusiastic advocates of the administration of vitamin extracts would scoff at such claims as these.

The Council declared Vita Zest inadmissible to New and Nonofficial Remedies, because (1) its composition is indefinite, (2) it is exploited under unwarranted therapeutic claims and in a manner which tends to its indiscriminate use and (3) because the name suggests its haphazard use as a general tonic.

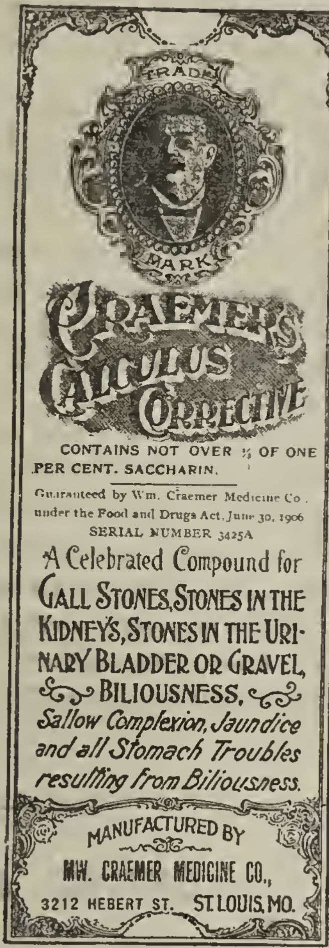
MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

East India Capsules.—The Hollander-Koshland Co., Baltimore, Md., shipped in July, 1919, a quantity of "East India Capsules" that were declared misbranded. The federal chemists reported that analysis showed the capsules to contain, essentially, sulphurated vegetable oil, copaiba, and oils of cinnamon and santal. The product was falsely and fraudulently represented as an effective treatment of gonorrhea, when, in truth and in fact, it was not. In July, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9662; issued Jan. 7, 1922.*]

Zerbst's Cough Sirup.—The Zerbst Pharmaceutical Co., St. Joseph, Mo., shipped in December, 1918, a quantity of "Zerbst's Cough Sirup" which was misbranded. The Bureau of Chemistry reported that the product consisted of a caramel-colored sirupy liquid containing alcohol, water, sugar, chloroform, licorice and other plant principles and small amounts of tartar emetic, morphin, hyoscyamin and a magnesium salt. The stuff was falsely and fraudulently represented as an effective treatment and cure for asthma, croup, whooping cough, bronchitis, inflammation of the lungs and throat and all other diseases of the throat and lungs. In March, 1921, the Zerbst concern entered a plea of guilty and was fined $10 and costs.—[*Notice of Judgment No. 9717; issued Jan. 11, 1922.*]

Craemer's Calculus Corrective.—The Wm. Craemer Medicine Co., St. Louis, Mo., shipped in June, 1915, from Missouri to Wisconsin, a quantity of "Craemer's Calculus Corrective" which was misbranded. The federal chemists reported that analysis showed the preparation to be an alkaline watery solution composed essentially of potassium, sodium, ammonium, phosphate, chlorid, citrate, salicylate and a small amount of saccharin. It was falsely and fraudulently represented as a remedy for gallstones, stones in the kidneys and stones in the urinary bladder. In April, 1921, a plea of *nolo contendere* was entered and the court imposed a fine of $25 and costs.—[*Notice of Judgment No. 9790; issued Jan. 11, 1922.*]



TRADE MARK

CRAEMER'S CALCULUS CORRECTIVE

CONTAINS NOT OVER ⅓ OF ONE PER CENT. SACCHARIN.

Guaranteed by Wm. Craemer Medicine Co. under the Food and Drugs Act, June 30, 1906
SERIAL NUMBER 3425A

A Celebrated Compound for GALL STONES, STONES IN THE KIDNEYS, STONES IN THE URINARY BLADDER OR GRAVEL, BILIOUSNESS, *Sallow Complexion, Jaundice and all Stomach Troubles resulting from Biliousness.*

MANUFACTURED BY
WM. CRAEMER MEDICINE CO.,
3212 HEBERT ST. ST. LOUIS, MO.

Salax Compound. — The Salax Water Co., Excelsior Springs, Mo., shipped in September, 1919, a quantity of "Salax Compound," which was misbranded. The federal chemists reported that analysis showed the product to consist chiefly of a mixture of sodium sulphate (Glauber's salt), baking soda, sodium acid phosphate, together with smaller amounts of common salt and washing soda. It was falsely and misleadingly represented that the product was derived from Salax water, a mineral water at Excelsior Springs, when it was not and did not resemble Salax mineral water and was, in fact, radically dissimilar to it. Furthermore, it was falsely and fraudulently represented as an effective treatment and cure for indigestion, catarrh of the stomach, rheumatism, loss of energy, inflammation of the gallbladder, appendicitis, etc. In December, 1920, a plea of guilty was entered on behalf of the Salax Water Co. and the court imposed a fine of $100 and costs.—[*Notice of Judgment No. 9723; issued Jan. 11, 1922.*]

Some K K K Medicine Co.'s Products.—The K K K Medicine Co., Keokuk, Iowa, shipped in June, October and September, 1919, quantities of "Dr. Machin's K K K So So Se," "K K K Pectus Balm," "K K K Tonic," and "K K K Laxative Perio."

K K K So So Se was, according to the federal chemists, a dark brown, water-alcohol solution consisting chiefly of sugar and glucose with a small amount of creosote, methyl salicylate, red pepper, oil of sassafras and plant principles. It was falsely and fraudulently represented as a preventive and cure for gallstones, ringworm, malaria, ulcers, loss of nervous energy, kidney and liver trouble and various other things.

K K K Pectus Balm was, according to chemists, a brown, water-alcohol solution consisting chiefly of sugars and small amounts of ammonium chlorid, benzoic acid, tartar emetic, saccharin, bitter plant principles, traces of camphor and oils of anise and eucalyptol. It was falsely and fraudulently represented as an effective remedy and cure for all bronchial troubles, whooping cough, pleurisy, pneumonia, croup and asthma.

K K K Tonic, according to the chemists, was a water-alcohol solution containing sugar with small amounts of emodin-bearing (laxative) drugs, bitter plant extractives, pepsin, and traces of cinchona alkaloids, hydrochloric acid, and oils of cloves and cassia. It was falsely and fraudulently represented as an effective cure for indigestion, all stomach troubles, nervousness, female troubles of every description, piles, etc.

K K K Laxative Perio was found by the chemists to be a watery-alcohol solution of sugar, sodium phosphate, laxative drugs and small amounts of plant principles, saccharin and oils of orange and anise. It was falsely and fraudulently represented as a cure for headache, malaria, nervous troubles, spasms, etc. In April, 1921, the K K K Medicine Co. entered a plea of guilty and was fined $50 and costs.—[*Notice of Judgment No. 9735; issued Jan. 11, 1922.*]

Paradise Oil and Tarina Carbolized Salve.—The California Good Health Co. of Louisville, Ky., shipped in October and November, 1919, a quantity of "Paradise Oil" and "Tarina Carbolized Salve," which were misbranded.

Paradise Oil, according to the federal chemists, consisted essentially of a combination of sulphuretted linseed oil and turpentine. It was falsely and fraudulently represented as an effective remedy and cure for kidney, liver, bladder and rheumatic troubles, dropsy, gallstones, palpitation of the heart, headache and a number of other things.

Tarina Carbolized Salve, according to the chemists, was a dark green, semisolid ointment composed essentially of petrolatum with small amounts of carbolic acid and oil of tar. It was falsely and fraudulently represented as an effective cure for croup, ulcerated sore throat, eczema, granulated eyelids, inflamed lungs, whooping cough, mumps, etc.

In March, 1921, the California Good Health Company entered a plea of guilty and was fined $50.—[*Notice of Judgment No. 9748; issued Jan. 11, 1922.*]

Cummings' Pill-Mass.—The F. P. Cummings Co., Roanoke, Va., shipped in November, 1918, a quantity of "Cummings' Pill-Mass" which was misbranded. The Bureau of Chemistry reported that the stuff contained copaiba, volatile oils, vegetable extractives and a salicylic acid compound. The product was falsely and fraudulently represented as a remedy for gonorrhea, gleet, stricture, catarrh of the stomach, falling of the womb, pain in the back and enlarged prostate, all diseases of the kidneys, bladder, urinary organs, etc. In November, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9731; issued Jan. 11, 1922.*]

Correspondence

"THE PHYSIOLOGIC AND THERAPEUTIC ACTION OF LIGHT"

To the Editor:—Please give a detailed explanation of Dr. Hess' dictum that "the therapeutic effect of the sun's rays is almost entirely nullified by passage through window glass." Plants grow well under glass and photographic films are sensitive to light, which passes through heavy glass lenses.

JOHN H. STONE, M.D., Washington, D. C.

[This letter was referred to Dr. Hess, who replies:]

The correspondent takes for granted that the influence of sunlight on plant growth, as well as its photographic power, can be used as a measure of its therapeutic value, and that a factor which nullifies one of these qualities must have the same effect on all. This is by no means the case. As shown by laboratory experiments, rats can be protected regularly from rickets by daily short exposures to direct sunlight. If, however, rats which have been reared under identical conditions are placed in a box constructed of glass and exposed to sunlight, no protective effect is obtained, and all the animals develop rickets. The glass box used in this experiment had sides and a top composed of flint glass 5 mm. in thickness. Similar experiments, using the mercury vapor quartz lamp, gave the same result. Rats receiving direct irradiation for three minutes at a distance of 3 feet were all protected, whereas those which were treated with rays which had traversed a filter of window glass (2.6 mm. in thickness) all showed rachitic lesions of the epiphyses. These developed even when the latter group received many times the minimal protective dose of radiation.

These laboratory experiments accord well with clinical experience. Irrespective of diet—for example, certified raw milk—rickets developed in infants brought up under ideal conditions, in glass cubicles having a southern exposure. On the other hand, infants were even cured of rickets when placed on the porch outside the cubicles, and exposed to the direct rays of the sun.

Rollier has had a similar experience in relation to tuberculosis. He has been unable to bring about cures when patients were exposed to sunlight in rooms enclosed in glass, but obtained his remarkable results when the sun's rays were allowed to impinge directly on the skin.

The therapeutic effect of sunlight in rickets is due largely to its ultraviolet rays. As is well known, these rays are filtered out by ordinary window glass, a fact which well explains our laboratory and clinical observations.

A. F. Hess, M.D., New York.

"TYPHOID FEVER IN THE UNITED STATES"

To the Editor:—In your Tenth Annual Report on Typhoid in the Large Cities of the United States in 1921 (The Journal, March 25) the following corrections should be made:

The outbreak of approximately 100 cases with but two deaths in Minneapolis in March, 1921, was one of paratyphoid fever instead of typhoid fever, as stated on page 891. The statement that the "cause was traced to a woman employee in the kitchen of the cafeteria" is without foundation. While it is entirely possible that a well carrier or a mild case of the disease which entirely escaped attention may have given rise to the outbreak, a most careful epidemiologic study fails utterly to show that such a conclusion is entirely logical. When our complete epidemiologic report is published, what is believed to be a proper criticism of the university authorities regarding their supervision of persons engaged in food handling will be made. Until published, we believe that any criticism of the university authorities in this regard is unwarranted.

A. J. Chesley, M.D., St. Paul.
Executive Officer, Minnesota State
Board of Health.

[Comment.—It is unfortunate that the full data concerning the Minnesota epidemic were not available when The Journal article was published. The complete epidemiologic report, we regret to say, is not yet available, although the epidemic is now more than one year past.—Ed.]

RABIES IN GEORGIA—"DEATH OF PIONEERS IN RESEARCH ON TROPICAL DISEASE"

To the Editor:—Under the head of Georgia Medical News in The Journal, May 27, it is stated that there is an epidemic of rabies in this state. Your correspondent reports that 2,147 persons received the Pasteur treatment during the last year, this being 1,708 more than in 1910. The explanation for these statistics is that our state board of health has a loose method of giving every one antirabic treatment who has been bitten by a dog. This precedent was established by Dr. H. F. Harris about twenty years ago, and has been kept up since. This may not be harmful to the individual treated, but it puts our state statistics on this matter in a warped situation. Dr. Harris, about fifteen years ago, stated in a discussion on rabies at the Medical Association of Georgia that it was his policy to give antirabic treatment to every person bitten by a dog. In my opinion this is a pernicious course from the standpoint of statistics, but Dr. Harris' successor has seen fit to pursue the same policy.

I am sure there are few states in the Union that could not show a record of 2,147 persons bitten by a dog during a year, but most of the health officers of the respective states pursue the sane policy of not treating all these persons for rabies.

In reference to your editorial on "Death of Pioneers in Research on Tropical Disease" (The Journal, May 27, p. 1647), I wish to state that it is timely. But in reference to the follow-up work after Laveran's discovery of malarial parasites, the greatest of all was done by Marchiafava and Bignami. The report which these two men made on malaria (Twentieth Century Practice, New York, William Wood & Co.) in my opinion is the greatest monograph written in medical literature.

The report of their experimental work done in the Campagna near Rome in 1898-1899 is a masterpiece so thoroughly perfected that but little has been added to the knowledge of malaria and the malarial parasites since. That report could now be used as a textbook in teaching the subject of malaria.

One is stricken with awe when one thinks what these two men added to medical science. They, Laveran and Ross, should be thought of jointly in the present status of malaria.

E. C. Thrash, M.D., Atlanta, Ga.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SGAMBATI REACTION IN PERITONITIS

To the Editor:—What is the Sgambati reaction in the urine in cases of peritonitis? Louis B. Farri, Wheeling, W. Va.

Answer.—O. Sgambati of Rome recently called attention anew to the color reaction in the urine when the peritoneum is defending itself against bacterial invasion. It is thus a sign of peritonitis. He first published it in the *Policlinico* of March 1, 1920, p. 267. The test tube is filled to one third with urine, and then, as it is held very slanting, 2 or 3 c.c. of nitric acid is poured down the wall, a drop at a time, so that, without mixing with the urine, it settles to the bottom of the tube. In about a minute, the zone of contact between the acid and the urine shows—above the orange yellow halo visible in normal urine—another, a grayish blue halo that spreads upward. The light must fall on the tube against a light background. After chloroform has been added and the tube has been agitated, it is set aside for the chloroform to settle. The grayish blue tint gradually changes to a ruby red, which is permanent. The reaction is extremely sensitive, and the urine must be fresh and the nitric acid pure. Sgambati adds that there is a minimal amount of the chromogen present in normal urine, and hence with high specific gravity it is better to dilute the urine a little.

Therapeutic Puncture of Tuberculous Lung.—L. Vercelli writes to the *Gazzetta degli Ospedali* **42**:1212, 1921, to call attention to the benefit which followed two punctures of the lung in a case in which he had tried to apply pneumothorax but had found that conditions rendered this impossible. The improvement after the apparently futile punctures was pronounced, the young man throwing off the disease by a crisis, he says, like that under serotherapy of pneumonia or diphtheria. The needle had been introduced at several points each time.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

California: San Francisco, June 26. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 11. Sec., Eclec. Bd., Dr. James Edwin Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 20. Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

District of Columbia: Washington, July 11. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Hawaii: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Illinois: Chicago, June 26. Supt. of Registration, Mr. V. C. Michels.

Indiana: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

Kansas: Kansas City, June 20. Sec., Dr. Albert S. Ross, Sabetha.

Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Maryland: Baltimore, June 20-23. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

Massachusetts: Boston, July 11-13. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

Mississippi: Jackson, June 20-21. Sec., Dr. W. S. Leathers, University.

National Board of Medical Examiners. Written examination in Class A medical schools. Parts I and II, June 19-23 and Sept. 25-29. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Applications for the June and September examinations must be sent in, respectively, by May 15 and June 1.

New Jersey: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, State House, Trenton.

New Mexico: Santa Fe, July 10-11. Sec., Dr. R. E. McBride. Las Cruces.

New York: Albany, Buffalo, New York City and Syracuse, June 26-29. Assistant, Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

North Carolina: Raleigh, June 26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh. July 11. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

South Dakota: Waubay, July 18. Director, Dr. H. R. Kenaston, Bonesteel.

Texas: Austin, June 20-22. Sec., Dr. T. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

Vermont: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 20-23. Sec., Dr. J. W. Preston, 511 MacBain Bldg., Roanoke.

Washington: Olympia, July 11. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 11. State Health Commissioner. Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Pennsylvania January Examination

Mr. C. D. Koch, Professional Credentials Bureau, Bureau of Medical Education and Licensure of Pennsylvania, reports he written and practical examination held at Philadelphia, Jan. 3-7, 1922. The examination covered 5 subjects and ncluded 50 questions. An average of 75 per cent. was required to pass. Of the 61 candidates examined, 56 passed and 5 failed. One candidate was licensed by reciprocity, and one candidate was registered on the basis of military ervice. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
Howard University	(1920)	1
Hahnemann Medical College and Hospital of Chicago	(1917)	1
Loyola University	(1918)	1
Baltimore Medical College	(1909)	1
ohns Hopkins University	(1911)	1
University and Bellevue Hospital Medical College	(1909)	1
efferson Med. Coll.	(1913), (1917), (1918), 1919), (1920, 13)	17
Medico-Chirurgical of Philadelphia	(1901)	1
emple University	(1919, 3), (1920, 3)	6
niv. of Pennsylvania	(1907), (1918), (1919, 3) (1920, 9)	14
Woman's Medical College of Pennsylvania	(1919), (1920, 2)	3
University of the South Medical Department	(1906)	1
Medical College of Virginia	(1915), (1917)	2
University of Liverpool	(1897)	1
University of Strassburg	(1888)	1
National University, Athens	(1917)*	1
University of Padua	(1917)*	1
University of Rome	(1916)*	1
University of Turin	(1920)*	1
FAILED		
Starling Medical College	(1894)	1
Eastern University School of Medicine	(1913)	1
Hospital College of Medicine, Louisville	(1903)	1
University of Catania	(1919)*	1
University of Messina	(1905)*	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Jefferson Medical College	(1919)	Ohio

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Medico-Chirurgical College of Philadelphia	(1915)	U. S. Army

* Graduation not verified.

Minnesota January Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Jan. 3-5, 1922. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 41 candidates examined, 40 passed and 1 failed. Twenty-one candidates were licensed by reciprocity. Three candidates were licensed by endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Colorado	(1902)	81.2
University of Minnesota	(1917) 87.5, (1918) 85.2, 86.3, (1922)* 84.8, 85.4, 86.4, 86.9, 86.9, 87, 87.1, 88.1, 88.5, 88.9, 89.6, 89.8, 89.9, 90, 90, 90, 90, 90.2, 90.3, 90.5, 90.7, 90.7, 90.8, 91.5, 92, 92.1, 92.2, 92.4, 92.6, 93.6, 95.3	
Woman's Medical College of Pennsylvania	(1919)	87.9
McGill University	(1916)	88.4
University of Toronto	(1915)	90
Harvard Medical School, Shanghai	(1917)†	84
National University of Ireland	(1918)	78.3
FAILED		
Kansas City Medical College	(1901)	57.3

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Stanford University	(1921)	California
Georgetown University	(1915), (1920)	Dist. Colum.
George Washington University	(1918)	Dist. Colum.
Bennett Medical College	(1911)	Illinois
Rush Medical College	(1916) So. Dakota, (1920), (1921, 2)	Illinois
Indiana University	(1916)	Indiana
Tulane University	(1919)	Louisiana
Johns Hopkins University	(1917) Maryland, (1920)	Texas
University of Michigan Medical School	(1915)	Michigan
Marion-Sims College of Medicine	(1901)	Louisiana
Washington University	(1918)	Illinois
University of Nebraska	(1918)	Nebraska
Cornell University	(1915)	California
University of Cincinnati	(1920)	Ohio
University of Pennsylvania	(1920)	W. Virginia
University of Christiania	(1897)	S. Dakota

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Tulane University	(1917)	N. B. M. Ex.
Johns Hopkins University	(1916)	N. B. M. Ex.
University of Pennsylvania	(1917)	N. B. M. Ex.

* These candidates have finished the medical course, and received their M.B. degrees, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

† Graduation not verified.

Arizona January Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Jan. 3-4, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University	(1921)	90.7
Tulane University	(1919)	84.4
University of Texas	(1919)	82.4

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Physicians and Surgeons, Chicago	(1898)	Iowa
St. Louis University School of Medicine	(1916)	Missouri
Miami Medical College	(1878)	Colorado
National School of Medicine	(1910)*	Mexico
School of Medicine, Morelia	(1915)*	Mexico
University of San Marcos, Lima	(1907)*	Peru

* Graduation not verified.

Book Notices

DAS TUBERKULOSE-PROBLEM. Von Hermann v. Hayek, Privatdozent, Dr. Med. et Phil. Innsbruck. Second edition. Paper. Price, 78 marks. Pp. 391. Berlin: Julius Springer, 1921.

Hayek considers that he has written a pioneer book, which, he believes, will be accepted as a textbook when tuberculosis has come to be studied according to the principles of immunity, infection and resistance. The problem of tuberculosis, he says, will be well on the road to solution when the world studies it in the light of the principles noted. At present, "tuberculosis is a battle between the tubercle bacillus seeking its sustenance in the human tissues and the body cells which resist. This battle begins with the first defensive reaction and ends when the victory of the parasite has caused the destruction of vital organs. And only with the beginning of the end is instituted present day treatment of tuberculosis." For this delayed treatment, the influence of pathologic anatomy is blamed by Hayek. He holds that one cannot estimate the true constitutional damage by the extent of the disease present in the given case. The best results are shown to be obtained when, given an open case, all contacts are examined and held for years under observation. During this time, Hayek would pursue a course of immunization with a view to preventing breakdown in later life. He regrets that so much of effort and money is spent on patients with far advanced cases, declaring that if one tenth of the sum annually spent on sanatorium care were devoted to dispensaries for immunization of contacts, the problem of tuberculosis would near its end. Repeatedly, he refers to infection as a matter of dose, on the one hand, and of resistance, on the other. One will admit the soundness of this postulate. Returning to pathologic anatomy, Hayek thinks that it has had its day in the study of tuberculosis; when we had no further knowledge than that of the gross lesion and some understanding of the cell, the study of pathologic anatomy was proper; now however, we have information as to the chemistry of the cell, and many of its characteristics heretofore concealed are open to us, so that it behooves us now to study the cell and, through the cell, the organism, in the light of resistance and immunity. The book contains many pages of absorbing interest for clinician, sociologist and biologist. It is a curious mixture of science, fact, argument and, it must be said, criticism of those who have disagreed with the author.

TRAITÉ D'UROLOGIE. Par G. Marion, Professeur Agrégé a la Faculté de Médecine de Paris. 2 volumes. Cloth. Price, 120 francs, net. Pp. 1050, with 433 illustrations. Paris: Masson et Cie, 1921.

Except for the fact that the scrotum and its contents are wholly omitted from discussion, this work presents a rather complete summary of urologic information. The anatomy of the genito-urinary tract is thoroughly reviewed and excellently illustrated. This division of the book is followed by carefully described technical methods of examination of the various anatomic divisions of the urinary system. It is stated that results obtained by the phenolsulphonephthalein test agree exactly with determinations according to the Ambard "constant." Details of experimental polyuria are described, and the now popular concentration tests are not omitted. The importance of chemical examination of the blood is emphasized in its bearing on urologic cases. Symptomatology includes subjective as well as objective symptoms. For example, pain is divided into renal, ureteral, vesical, prostatic and urethral pain. Pollakiuria, imperative urination, retention, are separately and concisely discussed. In the division on pathology the illustrations of gross as well as microscopic pathology are for the most part reproduction of drawings rather than photographs. Renal tuberculosis occupies thirty-four pages. The chapter on renal tumors is approached from the French point of view, and is marked by a looseness of definition and peculiarity of classification which is apparently satisfactory only to Gallic pathologists. Here, particularly, photomicrographs would offer a distinct improvement over the drawings accompanying the text. In the chapter on renal stone, the injection of sterile oil through a ureteral catheter is favorably recommended in treatment. By this method many stones will pass in a relatively short time. Gradual dilation of the ureter by sounding, which is also recommended, is a procedure of certain value.

In the second volume, lesions of the urethra and of the prostate are thoroughly discussed. Prostatic hypertrophy and its complications are well illustrated. Some of the drawings are familiar, having been taken from Albarran's splendid work. The last half of the second volume is devoted to the surgery of the genito-urinary tract. There is nothing new in the procedures which for the last two decades have been considered standard. The muscle-splitting incision for exposure of the kidney is not presented. The advice to continue the usual kidney incision anteriorly in the presence of a large kidney might be challenged by some American operators who prefer to enlarge the incision posteriorly. Subcapsular renal operations are discussed in relation to the presence of a marked chronic perinephritis. Suture of the pelvis of the kidney after pyelotomy is not recommended as a routine procedure. Under the caption of operations on the bladder, cystoscopy is fully discussed. In a chapter entitled "Reconstruction of Urethra by Circular Urethrorrhaphy," a method of end-to-end suture of the posterior urethra is described which apparently has two distinct disadvantages: (1) the shortening of the urethra, which is unnecessary, and (2) the likelihood that the suture line will not hold, even though a retention catheter is passed from meatus to bladder.

Plastic work on the penis for fistulas and deformities is excellently described and illustrated, and one is inclined to hope that the results achieved are in keeping with the attractiveness of the theoretical considerations in this extremely difficult part of operative urology.

Perineal prostatectomy is dismissed in two pages. Suprapubic prostatectomy following Freyer's technic, occasionally slightly modified, is well described. The radical removal for carcinoma of the prostate inclusive of the seminal vesicles, vasa deferentia and part of the bladder is discussed at length. Colored plates at the end of the second volume beautifully illustrate normal and pathologic conditions of the bladder and urethra. On the whole, this work is an excellent addition to urologic literature.

AN INTRODUCTION TO THE STUDY OF THE PROTOZOA WITH SPECIAL REFERENCE TO THE PARASITIC FORMS. By E. A. Minchen, M.A., Ph.D., F.R.S., Professor of Protozoology in the University of London. Cloth. Price, $8.50, net. Pp. 520, with 194 illustrations. New York: Longmans, Green & Co., 1922.

This work, which was originally published in 1912, is unquestionably one of the most valuable books in the field, and has been in such demand that the original edition was exhausted some years ago. The demand for it has been such that the publishers have found it necessary to provide a second impression. This is apparently identical with the original and in certain respects behind the times, for in the interval there have been significant additions to knowledge in many parts of the field. Nevertheless, there has not yet appeared in English any work of equal scope, nor, indeed, any one of narrower compass that stands on an equal plane for breadth and thoroughness of treatment. The somewhat more than five hundred pages are filled with helpful suggestions for both the teacher and the student; and a repeated perusal of the work only lends emphasis to the deep regret felt by all for the untimely death of the brilliant protozoologist who was its author.

PATHOLOGISCHE PHYSIOLOGIE. Ein Lehrbuch für Studierende und Arzte. 1. Abteilung: Die Funktionsstörungen des Herzens, der Gefässe und des Blutes. Von Dr. H. E. Hering, Professor der Pathologischen Physiologie in Köln. Paper. Price, 39 marks. Pp. 120. Leipzig: Georg Thieme, 1921.

The subjects here considered are the functional disturbances of the heart, the blood vessels and the blood. Each is considered as to etiology, pathogenesis and consequences. The treatment of these topics is comprehensive, systematic and scientific. The book when completed will probably be a good companion book to that of Krehl on the same subject.

Medicolegal

Testimony as to Value of Services Not Conclusive

(Sweeney v. Banham (N. Y.), 191 N. Y. Supp. 186)

The Supreme Court of New York, Appellate Term, First Department, says that the plaintiff, a physician and surgeon, brought this action to recover on a quantum meruit, or what they were worth, for services rendered a third party, on the claim that the services were rendered at the request of the defendant and on his promise to pay therefor. The answer was a general denial. The proof showed that the patient was in no way related to the defendant, and not even a member of his household; that the contract in question was made by a woman who claimed that she was authorized by the defendant to engage the plaintiff's services. A judgment was rendered in favor of the plaintiff. The judgment rested practically on the testimony of the woman, which, it seems to the court, was at complete variance with a letter that she sent to the defendant some time prior to the commencement of this action. But, while the issue, on the evidence submitted, required submission to the jury, in view of the inherent improbability of the authorization of the plaintiff to bind the defendant for his services, the court should have granted the defendant's motion to set aside the verdict rendered for the plaintiff. Furthermore, this court thinks that reversible error was committed in the trial court's refusal to charge the jury that they were not bound by the plaintiff's testimony as to the value of his services. It is an elementary fact that estimony as to the value of professional service is mere pinion evidence. While the jury must consider such testinony in the respect named, it remains for them, nevertheless, o assess the damages themselves. In view of the fact that he verdict as rendered in this case was for the amount laimed, it could not fairly be said that the jury might not ave been misled by the court's refusal to charge as requested. t followed, therefore, that the judgment should be reversed s against the weight of evidence, and a new trial granted, vith costs to the defendant, to abide the event.

Mental Effect of Epilepsy and Nephritis

(Platt v. Platt et al. (Mo.), 236 S. W. R. 35)

The Supreme Court of Missouri, Division No. 1, in affirmng a judgment upholding the will of one John H. Platt, holds hat there was no error in a refusal to instruct the jury that t is a matter of common knowledge that epilepsy, whether t be what is known as grand mal or petit mal, is a mental isease, and is in the arteries or blood vessels of the brain, nd that the questions to be determined in this case were hether the mind of John H. Platt was so affected by this isease or by nephritis if the jury believed from the testinony that he had both or either, as to render him incapable nentally of making a will. The court says that the evidence howed that in 1893, when Platt was a minor, he was taken a hospital for the treatment of mental and nervous disases, suffering from a disorder there diagnosed as "idioathic epilepsy," induced by a recent sunstroke, from which e recovered and was discharged in about four months. uring his manhood, he was attacked by nephritis, which aused his death in December, 1914. This disease was haracterized by intermittent paroxysms of great pain, ccompanied at times by apparent mental disturbance; and ne requested instruction evidently had in view a connection etween this fatal disease and the epileptic symptoms or onditions manifested in the disorder for which he was eated at the hospital.

The statement in the instruction that epilepsy is a mental isease, and is in the arteries and blood vessels of the brain, as evidently intended to impress the jury with the theory nat epilepsy in all its forms was a mental disease having s seat in the brain structure, and was therefore insanity, nd whatever the person so afflicted should think or determine as therefore the product of a diseased mentality. In other ords, it assumed that the man was mentally unsound as a oundation on which to consider the case. There being no evidence in the record to this effect, the instruction proposed to dispense with evidence by assuming the truth of the proposition as a matter of common knowledge. Moreover, the court doubts whether there is one person in a hundred who understands the meaning of the French words "grand mal" and "petit mal," as used in connection with epilepsy, and that still fewer have heard that it is characterized by a lesion of the blood vessels of the brain. That this disease is not insanity was truly said by this court in *Turner* v. *Anderson*, 260 No. 23, 168 S. W. 943, and so eminent an authority as Clevenger, in his book on insanity (p. 1045), says that "two-thirds of my petit mal cases do not suffer intellectual impairment." Nor was there, in the court's opinion, any evidence that there was a recurrence of epileptic symptoms in this case after the prompt recovery of the patient reported by the hospital in which he was treated. The whole theory of the instruction seemed to have been that it might stand as a substitute for evidence connecting the subsequent ailment with this epileptic attack. The instruction was properly refused.

Again, the court says that the mention of epilepsy in connection with the execution of this will showed no purpose other than the malign influence the terrible word might have on the jury. This was evidently in mind in the preparation of the requested instruction, in which it was not sought to submit any question relating to epilepsy to the jury, but simply to conjure by the magic of the name. The only evidence of any mental disturbance from the time of Platt's discharge from the hospital to the day of his death referred to intermittent paroxysms incident to nephritis. These were called "eleptiform" in the testimony, and were the result of uremic poisoning. The court searched the testimony with care, and failed to find in it the relation of any incident that indicated mental deterioration or lack of careful consideration of business acts and operations. It needs no argument to show that proof that one's mind is occasionally weakened by suffering or disease is not sufficient to void an act done while that condition does not exist. The evidence was therefore insufficient in this respect to disturb the verdict.

Concerning Ship's Physician—Hospital Presumed to Have Roentgen-Ray Instrument

(Leone v. Booth S. S. Co., Limited (N. Y.), 133 N. E. R. 439)

The Court of Appeals of New York says that the plaintiff, who was a seaman on a steamship owned by the defendant, fell from a mast and dislocated his shoulder and fractured the greater tuberosity of the humerus. On board was a competent ship's physician. For his negligence, if any, the defendant was not responsible. On his advice, received in good faith, the master might rely. On it, the master might act. So acting, no liability could be predicated on error or mistake. The physician discovered and reduced the dislocation, but did not find the fracture. He told the plaintiff, however, that at the first port of call he would take him to a hospital and examine him by means of the roentgen ray. Six days later, the ship reached Barbados, where there was a hospital; but the master refused to send the plaintiff ashore, because he feared the British authorities would discover that the ship was equipped with wireless—at that time forbidden. The court holds that it may assume that in the hospital was a roentgen-ray instrument. They are in general use. It is common knowledge that such photographs are constantly taken in every hospital. It was to prefer shadow to substance to make the result of this action for damages depend on affirmative proof of this matter. Had the apparatus been used, it may be inferred that the fracture would have been discovered. The trial judge submitted two questions to the jury: whether the master was negligent in failing to send the plaintiff to a hospital in one of the ports at which the ship touched; and whether the master failed to act with reasonable prudence in requiring him to perform work which he was not in fit physical condition to perform. A verdict was rendered for the plaintiff, judgment on which was reversed by the appellate division, and the complaint dismissed; but the judgment of the appellate division is now reversed, and that of the trial court affirmed.

Society Proceedings

COMING MEETINGS

Colorado Congress of Ophthalmology and Oto-Laryngology, Denver, July 28-29. Drs. M. D. Brown and J. M. Shields, Metropolitan Bldg., Denver, Secretary.
Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.
Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.
Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.
Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
New Jersey, Medical Society of, Spring Lake, June 20-22. Dr. William J. Chandler, South Orange, Secretary.
Southern Minnesota Medical Association, Rochester, Minn., June 19-20. Dr. Aaron F. Schmidt, Physicians and Surgeons Bldg., Minneapolis, Secretary.
Wyoming State Medical Society, Sheridan, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Seventh Annual Meeting, held in Washington, D. C., May 2-4, 1922

The President, Dr. Herbert C. Moffitt, San Francisco, in the Chair

Some Points in Physical Diagnosis

Dr. David Riesman, Philadelphia: Movable dulness in the chest is not always an evidence of fluid in the pleural cavity. The value of ulnar percussion in detecting gallbladder and kidney tenderness, and the value of clavicular and transdigital auscultation in the diagnosis of cardiac diseases are points to be remembered.

Clinical Signs of Paralysis of the Intercostal Muscles

Dr. C. F. Hoover, Cleveland: That one of the functions of the intercostal muscles is to modify the breadth of the intercostal spaces has become an axiom in medical literature. The Hamberger model is devised to illustrate this particular function. The mistake in Hamberger's conception is that he represented the ribs by radii of rotation of successive segments of ribs. To make his model truthfully represent the excursion of the ribs, he should have added a transverse structure to the ends of the radii. Such a model shows the interspaces in the upper half of the thorax to narrow with inspiration and in the lower half to widen. The want of extensibility of the parietal pleura shows that widening of the interspaces cannot be one of the purposes for action of the intercostal muscles. The two sets of intercostal muscles are not differentiated because their functions differ, but because the thresholds of employment for the two differ. The external intercostals have the lower threshold for inspiration and the higher for expiration. The intercostals have the higher threshold for inspiration and the lower for expiration. Integration of the intercostals with the scaleni and serratus posticus superior gives an inspiratory effect to action of both intercostal muscles; and action of the abdominal muscles, triangularis sterni and serratus posticus inferior gives an expiratory effect to action of both external and internal intercostals.

DISCUSSION ON PAPERS OF DRS. RIESMAN AND HOOVER

Dr. Emanuel Libman, New York: The method Dr. Riesman described for ascertaining the presence of an inflamed gallbladder will be of particular value when the tenderness is located in the usual position. There are cases, however, in which the only tenderness to be found is in the epigastrium, being then due to a reflex disturbance in the muscles. The tenderness found in the hypochondriac region in cases of cholecystitis is, of course, also muscular in origin. To determine whether there is really a tender mass present or whether the tenderness is simply a diffuse tenderness in the muscles, I palpate the mass and try to locate a definite lower border. If present and especially if movable, one is dealing with a tender mass, not simply with tender muscles. If a mass is present and the tenderness is not due to a reflex disturbance in the muscles, thrusting the fingers downward from the border will not cause pain; a direct backward thrust at the border will be slightly, if at all, tender, whereas a thrust upward will be definitely painful. This simple method can be used in the diagnosis of tender masses elsewhere in the body. As regards the finding of an accentuation of the second aortic sound in other places than the second right intercostal space, it is of interest to note that in 1803 Curschmann pointed out that the finding of a second sound accentuated in other places than over the aortic orifice was of value in establishing a diagnosis of atherosclerosis of the thoracic aorta.

Dr. George W. Norris, Philadelphia: It is still not generally appreciated that in cases of pleural effusion movable dulness due to change in the fluid level does not occur immediately, but often from twenty to forty minutes elapse before complete gravitation occurs. Sudden change of dulness with change of posture should always make one suspect the presence of air as well as fluid in the pleural cavity. This has long been recognized clinically and has received definite corroboration from roentgen-ray studies. There are still a number of inadequately explained phenomena associated with the second sound of the aorta. Not only may it lack accentuation in cases of hypertension, but the reverse is also true. Definite accentuation may occur without increase of arterial pressure. This is especially common in cases of syphilitic aortitis. I have found Dr. Riesman's method of transdigital auscultation most useful in determining the exact time of the cardiac sounds.

Dr. W. S. Thayer, Baltimore: Last year we encountered an instance of pleural transudate in a case of Hodgkins' disease, with a remarkable and immediate displacement of fluid on change of position. No air was demonstrable in the pleural cavity, either clinically or by fluoroscopic examination. In but one instance, in which the study was not so careful, have I seen a similar phenomenon. As to its explanation, I am not clear. For years I have taught that a reasonable dulness, which was immediate and of a high degree, was diagnostic of pneumothorax. In the great majority of cases this is true. But there are rare exceptions.

Dr. T. R. Boggs, Baltimore: I had an opportunity to observe the rapid movement of fluid in the absence of air in the thoracic cavity in a case in which there was extraordinary marked proliferative pleuritis with great thickening and rigidity of the visceral pleura over the contracted lung. The fluid moved quite rapidly on changing from the recumbent to the erect position.

In Behalf of the Stomach Tube

Dr. Reginald Fitz, Rochester, Minn.: Ambard's formula of urea excretion in the urine has been applied to the "free" acid figure of the gastric contents in a series of 1,039 cases in which Ewald meals were given in an effort to correlate the volume of the gastric contents aspirated and the percentage concentration of hydrochloric acid. By interpreting acidity in this fashion, it was possible to divide the results from this series into three groups. The normal group included an error of 13 per cent., the pathologic cases so included consisting of gastric or duodenal ulcer and rarely of gastric cancer. The group of hyperacidity without stasis showed that 50 per cent. were associated with gastric or duodenal ulcer, chronic cholecystitis or appendicitis. The group of hyperacidity with stasis showed an organic basis for this finding in 86 per cent. Stasis determined by the tube was as true an indicator of the stasis subsequently found at operation by the surgeon as was stasis revealed by the roentgen ray. These facts recall the present clinical importance of our oldest and most simple laboratory procedures.

The Pathology of Toxic and Nontoxic Adenomatous Goiters

Dr. Louis B. Wilson, Rochester, Minn.: True exophthalmic goiter can be divided into three stages: (1) early stage, with moderate increase in basal metabolism, often moderate exophthalmos, moderate thyroid enlargement, moderate hyperplasia, and diffuse hyperemia of the gland; (2) advanced tage, with high metabolic rate, marked exophthalmos, narked nervous syndrome, marked thyroid enlargement, dvanced hyperplasia, diffuse hyperemia, but little if any tored colloid, and (3) the late stage, with high, but someimes declining metabolic rate, marked nervous syndrome; ut there is now marked colloid storage, with less hyperemia. 'he gland is not nodular. Distinct from this picture is a low developing type, with increased metabolic rate, but no cular change, and very frequently associated with nodular nyroids. This Plummer has called hyperfunctioning adeoma. An effort has been made to determine the difference etween the two groups of cases, and to sort patients with ymptoms from those without. Two groups at the extremes f the metabolic series have been chosen. Group A included atients with enlarged nodular thyroids, with symptoms of yperthyroidism, but no exophthalmos, no nervous syndrome, ith metabolic rate 20 or more above normal. Group B ncluded patients with enlarged nodular thyroids, without yperthyroid symptomatology and with metabolism rates ithin 10 points of normal. About 250 thyroids in each eries were studied microscopically. Group A cases showed arenchymal cell hypertrophy with some colloid storage. rossly the glands are: (*a*) diffuse colloid without new llicle formation, or (*b*) colloid with new follicle but no psule formation, or (*c*) definitely encapsulated areas. These e all of moderate degree. These cases differ in kind and degree from true exophthalmic goiter. The colloid is ssing into the circulation from the parenchymal cells. The renchymal cells are not under high functional pressure, scharging secretion directly into the vessels. In the new llicle-forming type, we cannot find evidence that this is the sential factor in hyperthyroid symptoms, as even when this cture predominates, there are many areas of colloid sorption by reactivated parenchymal cells. Group B owed no evidence of cell hypertrophy or hyperplasia. The ses could be divided more or less into three groups parallelg those of glands from the hypertrophic series. A few ere proliferating adenomas. Disturbance of metabolic rate the true index of hypothyroidism and hyperthyroidism. hus the hypertrophic and hyperplastic cells in Group A are sponsible for increased metabolic rate, while in Group B ere is no substance secreted sufficiently to increase metabom. One can consider the hypothesis then that symptoms nonexophthalmic hyperthyroidism are caused by absorpn of complete thyroxin secreted in previously stored lloid, but more slowly than in exophthalmic goiter. stored lloid does contain thyroxin, and the colloid is transmitted om the follicles to the circulation. In true exophthalmic iter the symptoms may be caused by incompletely eloboted thyroid secretion. This harmonizes with many clinical dings. However, it may be discovered that the disease, e exophthalmic goiter, is primarily a lesion of the nervous stem, and that thyroid hyperfunction is a secondary velopment.

Nonpuerperal, Presenile Osteomalacia with Peculiar Selective Involvement of Certain Vertebrae

Dr. Llewellys F. Barker, Baltimore: A middle-aged man noticed that she had been growing shorter, and she ffered from pains, especially in the trunk, on movement. entgenograms revealed that there was a marked loss of cium in the bones, and definite diminution in size of at st three of the vertebrae. The disorder in this case is ated to endocrinal disturbance, more than one of the glands internal secretion being involved.

Tetany in the Adult

Drs. Wilder Tileston and F. P. Underhill, New Haven, nn.: Three cases of tetany in the adult were studied. The st was that of a woman with acute nephritis and acidosis, o was given large doses of sodium bicarbonate by mouth d intravenously. The second and third cases were in ill rished women with chronic intestinal disease. All three owed a considerable alkalosis, the carbon dioxid combining ver of the blood being 80, 77 and 90 per cent. by volume, pectively. In the first case this is explained by the heavy ali administration. In the other two cases the reason is not clear. In the third case there was only 50 per cent. normal serum calcium. Metabolic study of this case showed a calcium storage, no calcium being passed in the urine, and the excretion was only through the intestine. Urinalysis showed high ammonia nitrogen, both relatively and absolutely; also a large amount of indican and phenol. In the second case the blood calcium figure was normal at the time when the tetany was latent. In the first case no estimation was made.

DISCUSSION ON PAPERS OF DRS. BARKER AND TILESTON AND UNDERHILL

Dr. John Howland, Baltimore: In infantile tetany we have found a marked diminution of the calcium concentration of the serum with complete regularity. The sodium concentration is unchanged, while the potassium is only slightly increased. In adult tetany, however, one finds no decrease in the calcium of the serum. Indirect evidence suggests that the apparent inconsistency may ultimately be explained on the basis of diminution in the concentration of ionized or physiologically active calcium in both infantile and adult tetany.

Dr. L. A. Conner, New York: Are the roentgen-ray findings in osteomalacia sufficiently characteristic to distinguish it readily from metastatic malignant disease? I assume, of course, that the latter possibility has been entirely excluded in Dr. Barker's case, but I have been much impressed in some cases of metastatic carcinoma with the tendency to involve only scattered vertebrae and with the remarkably slow and relatively benign course that some of these cases run.

Dr. Reginald Fitz, Rochester, Minn.: Has Dr. Tileston any blood calcium figures in his cases just before and after the intravenous administration of calcium? A comparison of such figures might give evidence of calcium deficiency in the body, despite the fact that the blood calcium concentration was within normal limits.

Dr. L. F. Barker, Baltimore: The roentgen-ray findings were characteristic, and the calcium deficiency was an outstanding feature of the bone lesions.

Dr. Wilder Tileston, New Haven, Conn.: We did not make any determinations of calcium in the blood after the intravenous injection of calcium. We looked for guanidin in the urine in one of these cases, but found none, and I did not mention the subject at all because the method used in determining this substance is not reliable, and the results obtained by Paton and his co-workers have never been confirmed.

(To be continued)

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held at Washington, D. C., May 1, 1922

(Concluded from page 1840)

A Study of Certain Factors Affecting the Basal Metabolism

Dr. James H. Means and W. G. Lennox, Boston: Observations were made of the effect on the basal metabolic rate of such factors as movement of the subject, transfer to the laboratory and operating amphitheater, the immediate effect of operation, and day to day variations in the rate of normal and thyrotoxic subjects. Emotional disturbance produced a sharp but transient increase in oxygen consumption. The rise of metabolism following a standard breakfast was higher but less prolonged in subjects with an elevated metabolism than in those with a normal or lowered metabolism. Thyroid extract was given to a subject, and a curve charted expressing the daily metabolic rate. The height of this curve was not altered materially by the administration of quinin hydrobromid. The effect of giving suprarenal cortex is being studied.

The Clinical Toxicology of Quinidin

Dr. Robert L. Levy, New York: The untoward effects observed, both in this hospital and elsewhere, may be grouped under six headings. 1. Unpleasant symptoms. In the order of frequency, these were: headache, palpitation, nausea or vomiting, epigastric distress, giddiness, diarrhea, precordial pain, fever, tinnitus aurium, mental depression, flushing and sweating. 2. Heart failure. One of the early effects of quinidin is acceleration of ventricular rate. The tachycardia so induced may result in the occurrence of the signs and symptoms of heart failure. 3. Rhythms indicating intoxication of the heart muscle. In quinidin as in digitalis therapy, the appearance of frequent ectopic ventricular beats is an indication to desist from further exhibition of the drug. If the warning is not heeded, ventricular tachycardia may ensue, even after comparatively small doses, i. e., 12 gm. This irregularity, difficult to diagnose with accuracy save by the electrocardiographic method, is of great clinical significance because it may be at times the immediate precursor of ventricular fibrillation. We have recorded it in five of twenty-five cases of auricular fibrillation. 4. Sudden collapse. Four cases are reported in the literature, in all of which the patients recovered. There has been unconsciousness, with temporary cessation of heart and respiration. 5. Embolism. Seven instances are recorded, in two of which the patients have died. A necropsy was performed in one case which occurred in the Rockefeller Hospital. The embolus lodged in the brain three times, in the lung twice, in the lung, kidney and popliteal artery once, and in the spleen once. Of the last fifty patients with auricular fibrillation admitted to this hospital, twenty-five have received quinidin, and twenty-five have been treated with digitalis. In the group receiving quinidin, embolism occurred once; in the group not receiving the drug, it occurred five times. The danger of embolic phenomena after establishment of normal rhythm by quinidin is probably exaggerated. 6. Sudden death. There are three instances in which sudden death occurred shortly after the establishment of normal rhythm. The necropsy in our own case did not reveal the cause of death. The cases in our series in which the sinus rhythm was not restored and in which untoward effects were observed were distinguished clinically by the fact that in all there was conspicuous cardiac enlargement. This may be taken as evidence either of serious derangement of cardiac mechanics by valvular disease or of extensive myocardial involvement, or perhaps of both. It is suggested that patients with large hearts, especially with multiple valve lesions, are unfavorably predisposed and that they be treated with caution.

The Total Circulating Volume of Blood and Plasma in Chronic Anemia and Leukemia

Dr. Norman M. Keith, Rochester, Minn.: Blood and plasma volume determinations were made in twenty-four cases presenting definite evidence of chronic disease of the blood-forming organs, including chronic anemia and leukemia. The volume determinations were made by the dye method of Keith, Rowntree and Geraghty. In a group of twelve cases of pernicious anemia the plasma volume was found to be increased in six, the amount ranging from 66 to 81 c.c. per kilogram. The corresponding blood volumes were rarely increased. In general, the highest plasma values were found in patients showing a low hemoglobin percentage, although no absolute relationship could be demonstrated. The highest plasma volume, 81 c.c. per kilogram, was found in a patient when the hemoglobin was 41 per cent. In several of these patients, changes in hemoglobin percentages were associated with definite variations in plasma volume. In the remaining six cases of pernicious anemia, the figures for plasma volume were from 52 to 63 c.c. per kilogram, and the blood volume from 64 to 82, the former values being within normal limits and the latter slightly lower than normal. Two cases of secondary anemia were studied. In one, a case of Banti's disease, there was a distinct increase in both blood and plasma volume. Before a systematic volume study in chronic leukemia, an experiment in vitro with blood from a case of splenomyelogenous leukemia failed to show that any appreciable amount of the dye, vital red, was taken up by the leukocytes during a blood volume determination. Of the ten cases of chronic leukemia studied, six were splenomyelogenous in type. Each type showed considerable variation in the plasma and blood volume, though the most marked changes occurred in the splenomyelogenous cases. No exact relation between plasma volume, hemoglobin percentage or leukocyte count was noted. In only one of the four cases of lymphatic leukemia was the plasma and blood volume notably increased. The basal metabolic rates were determined in all cases of leukemia. In the splenomyelogenous type, all were definitely elevated. On the other hand, in the lymphatic cases, two were raised, while the others had rates of plus 9 and plus 12. The highest plasma volume, 68 c.c. per kilogram, was found in a case with the rate plus 9. No absolute relation, therefore, was found in this small series between plasma and blood volume and the basal metabolic rate. Wide variations in blood and plasma volume were thus observed in twenty-four cases, presenting definite evidence of chronic disease of the blood-forming organs. These variations were sometimes noted in the same patient. Certain cases of chronic anemia showed a striking increase in the volume of plasma; others showed a normal plasma volume. In all cases the total blood volume was rarely increased, but often reduced. On the other hand, in chronic leukemia the blood volume was almost invariably increased and the plasma volume often reached a high figure, especially in the splenomyelogenous type.

A Theory of the Mechanism of Chlorid Ion Transfer from Plasma to Corpuscles with Increasing Carbon Dioxid Tensions

Dr. Thomas E. Buckman, and Harold T. Edwards, Boston: No satisfactory explanation has yet been afforded to account for the transfer of chlorid ion from plasma to corpuscles with increasing carbon dioxid tensions and the reverse change with diminishing carbon dioxid tensions. Guerber, Koeppe and Hamburger seem to have been contented with the supposition that carbonic acid is capable of uniting with sodium chlorid to form sodium bicarbonate and hydrochloric acid. Fridericia seems to assume that this reaction takes place, and states that "the more the carbon dioxid tension, and the hydrogen on concentration, increases, the more the hemoglobin turns alkaline and the more its power to combine with carbon dioxid increases," and presumably, also its power to combine with hydrochloric acid. The only substance likely to be present in the blood which would be capable of effecting the formation of bicarbonate from sodium chlorid and sodium bicarbonate is an amin or amid, and it is postulated that the reaction is similar to that which takes place in the manufacture of sodium bicarbonate in the Solvay process. We have shown that bicarbonate is formed with increasing carbon dioxid tensions from sodium chlorid and mixtures of amins and organic acids. If the quantity of sodium chlorid, amin and acid is kept constant, it is found that there is an optimal initial concentration of bicarbonate for a given increment of carbon dioxid tension. A similar optimum exists for plasma. From the result of certain preliminary experiments, the following equation seems tentatively to satisfy the conditions for plasma.

$$\triangle\,[\mathrm{NaHCO_3}] = \mathrm{K} \times \left(-\,154.1 + 7.33\,[\mathrm{NaHCO_3}] - \frac{[\mathrm{NaHCO_3}]^2}{12}\right)$$

$\triangle\,[\mathrm{NaHCO_3}]$ = the increase in per cent. by volume of bound carbon dioxid in passing from a carbon dioxid tension of 40 mm. to 70 mm.
$[\mathrm{NaHCO_3}]$ = the initial concentration of bicarbonate at 40 mm.

Further experiments with proteins and mixtures of plasma and corpuscles are in progress.

The Mechanism of Hay-Fever

Dr. Francis M. Rackemann, Boston: Hay-fever is a typical example of the many varieties of natural sensitiveness. The mechanism depends on the fact that the cells contain specific antibodies which are not present in the cells of normal individuals. That the symptoms are not due to a lack of function which is normally present is indicated by the absence of any antitoxin in the blood, such as occurs with a positive Schick test in diphtheria. That the symptoms are not due to circulating antibodies which have a constant action either on the antigen or on the cells is shown not only by the inability to demonstrate such antibodies in the blood but also by the analogy in serum disease, in which the establishment of fixed cellular antibodies, as demonstrated by the skin test, is later uninfluenced by the disappearance of circulating antibodies. The great variations in the results of specific treatment by a given technic are readily explained by the variations in the degree of sensitiveness, although it is evident that the delicacy of the skin test is only a crude measure of the number of cellular antibodies. Finally, all attempts to demonstrate antibodies fixed to the red blood corpuscles of the patient by adding antigen to these corpuscles and watching for hemolysis have failed. It seems worth while to call attention to the close relation between the mechanism of allergy and of immunity. Specific antibodies are present in both conditions. In allergy, these antibodies are predominantly fixed in the cells: in immunity, the antibodies are predominantly in the circulating blood. However, in neither condition are the antibodies in one location exclusively. In allergy, the symptoms depend probably on reactions which take place in the cells. Immune guinea-pigs show no reaction to injection of the specific antigen, in spite of the fact that, as shown by Manwaring and Kusama, their cells do contain fixed antibodies. This phenomenon is to be explained by the protection afforded by the excess of circulating antibodies. The difference between allergy and immunity therefore depends on whether antibodies are predominant in the cells or in the blood.

Electromyographic Studies of Muscular Fatigue in Man

Drs. Stanley Cobb and Alexander Forbes, Boston: Observations were made in two ways: (1) An ergograph was devised to fatigue the flexor muscles of the wrist, and the electromyograms were made by leading off the action currents from the belly of the flexor carpi radialis, a simultaneous mechanical record being made of the flexion at the wrist. Thus, the mechanical and the electrical concomitants of muscular activity were superimposed on one record during a series of isotonic contractions terminating in fatigue. (2) Isometric contractions were similarly recorded; in these, the subject flexed the wrist forcibly and continuously against a stationary object until fatigue supervened. The records showed that in acute fatigue of this sort, the action currents of the muscles involved became slower in rate and greater in amplitude. This may be explained in terms of the Lucas-Adrian conception of neuromuscular conduction, and indicates that fatigue takes place at the neuromuscular junction.

Response of the Human Body to Therapeutic Application of External Heat

Dr. Ralph Pemberton and C. Y. Crouter, Philadelphia: A relatively small amount of data is available to explain the benefits accruing from this measure. The studies here recorded show, during exposure of the whole body to an electric light bake for from thirty to fifty minutes, a fall in alveolar carbon dioxid during the rise of the body temperature. This generally accompanies the beginning of perspiration, and is followed by a rise in alveolar carbon dioxid after the bake. Studies of the blood gases showed a rise in the percentage saturation of oxygen in fourteen of seventeen cases during the bake. Nine of the seventeen showed a rise in blood carbon dioxid after the bake. It was not possible to determine definitely a fall in the blood carbon dioxid coincident with the fall in the alveolar carbon dioxid. Study of the p_H of the sweat reveals that in nearly all instances in health or disease the sweat becomes more alkaline during the bake. Sweat from ten normal persons taken from the forehead at fifteen minute intervals showed an average change in the p_H of 7.0-7.6-7.9. The average of fifty-five tests on twenty patients with arthritis was 6.6-7.1-7.4. In other words, the patients with arthritis showed on the average a slightly more acid and occasionally a very much more acid sweat. From 10 to 15 gm. of sodium bicarbonate given to three patients with acid sweat before the bake had no effect on the sweat reaction. The urine, and usually the saliva, as well as the sweat, showed an increase in the p_H during the bake.

The Threshold of Ketogenesis

Drs. Russell M. Wilder and Malcolm W. Winter, Rochester, Minn.: The important data obtained in sixteen experiments on thirteen diabetic patients and three epileptic, but otherwise healthy patients, are reported. The metabolism of these patients was determined by the gasometer method, and the composition of the food mixture actually metabolizing was arrived at from the estimated total energy exchange, the urinary nitrogen excretion and the carbohydrate quota of the diet. The ratio between the ketogenic molecules and the glucose molecules derivable from this burning mixture was calculated by means of assumptions employed by Shaffer in similar studies. The first patient in the series had epilepsy, and had been fasting for eleven days. Although he received no food, a knowledge of the total metabolism and nitrogen excretion permitted the calculation of the metabolizing mixture. The ketogenic ratio of this mixture was 2.8:1, and, accompanying this high ratio, acetone bodies appeared in appreciable quantities in both blood and urine. In the other fifteen cases the ketogenic ratios lay between 1.2:1 and 2:1. One patient with a ratio of 1.7 had an acetone excretion of 6.2 gm. in the twenty-four hours and blood acetone of 18 mg. for each hundred cubic centimeters. Another with a ratio of 1.7 had an acetone excretion of 5.0 gm. and blood acetone of 22.9 mg. for each hundred cubic centimeters. Both of these cases were complicated by afebrile infections. Excepting them, the acetone values accompanying ratios between 1.2:1 and 2:1 were such as are commonly encountered in what are considered to be well controlled cases of diabetes and were so small as to be theoretically unimportant and clinically insignificant. These results harmonize with Shaffer's recent opinions, and apparently permit conclusions as follows: Certain assumptions are employed in the calculation of the composition of the mixture of food substances engaging in metabolism. Under the conditions of these experiments, provided these assumptions are tenable, the ratio between the ketogenic and the glucose molecules at which a clinically significant ketosis appears is at least 2:1. A ratio of this value implies that every molecule of glucose is ketolytic for two molecules of acetoacetic acid. The existence of infection lowers the ketogenic threshold so that significant ketogenesis may occur with lower ratios. Other factors, thus far undetermined, may also lower this threshold. It is advisable, therefore, in planning diets for diabetic patients to allow only such food mixtures as will avoid the 2:1 ratio by a safe margin.

Clinical Experience with Quinidin in the Johns Hopkins Hospital

Drs. E. P. Carter, F. R. Dieuaide and C. Sidney Burwell, Baltimore: In the last seven months, sixteen patients have been so treated, including both sexes, the age ranging from 22 to 77. The etiologic factors include acute rheumatic fever, arteriosclerosis and hyperthyroidism. Our observations include (1) the changes in cardiac mechanism which occurred as the result of this therapy, and (2) the effects of these changes in mechanism on the efficiency of the circulation, as shown by the subjective condition of the patients and by changes in the systolic blood pressure, the vital capacity and the limitation of the patient's activity. In general, the routine of treatment has been as follows: 1. The circulation was brought to the highest efficiency possible by rest and, in most cases, thorough digitalization. Two patients who had low apical rates with no pulse deficit, cyanosis or edema, and whose only signs of cardiac insufficiency were dyspnea and limitation of activity, were not given digitalis. In the other cases, digitalis was stopped before the administration of quinidin. 2. A small preliminary dose of quinidin was given to test for possible idiosyncrasy to the drug. No case of hypersensitivity was discovered. 3. The following day, 2 gm. was administered in five doses of 0.4 gm. at two hour intervals. This dosage was adopted in order to maintain a high concentration in the body, and was continued until the cardiac mechanism became normal, or until unfavorable signs appeared, or until it became evident that the cardiac mechanism could not be changed. In one case as much as 19 gm. of the drug was given.

Of the sixteen patients treated, the cardiac mechanism became normal in fourteen (87 per cent.). Certain of these relapsed to auricular fibrillation within a few days, and received a second course of treatment. Nine patients (56 per cent) have remained regular since leaving the hospital, the longest duration being six and one half months. Three patients have died since the treatment was administered. The day of treatment on which the change to normal rhythm occurred varied from the first to the fifth, being in eight instances the first. The amount of the drug varied from

0.4 to 10 gm. All observations on the mechanism were confirmed by frequent electrocardiograms. Two patients were observed to pass through a stage of auricular flutter in the transition from auricular fibrillation to normal mechanism.

Obviously, the fact that auricular fibrillation can be terminated by quinidin is of little significance unless it can be shown that the patient's health is improved. Eight patients have experienced distinct relief with the onset of normal rhythm, and seven of these have been able to live on a considerably higher plane of activity. The remaining patient is still in the hospital under observation. The average systolic blood pressure during fibrillation, as determined by the method of James and Hart, was found to be low, usually 100 mm. of mercury or less. The onset of normal rhythm was accompanied in most cases by a rise in systolic pressure of from 30 to 40 mm. In the presence of fibrillation, the vital capacity was found to be only 50 per cent. of the calculated normal in most of the cases. In one case, however, the vital capacity was not reduced. The mean vital capacity after the restoration of normal mechanism was 80 per cent. of the normal. The efficiency of the circulation in thirteen of these patients was further studied by the determination of the degree of oxygen saturation of the arterial and venous blood. This work was reported at the annual meeting of this society in May, 1922, by Dr. Harold J. Stewart. None of our patients have shown signs of intoxication with quidinin. There have been two deaths, the association of which with quinidin therapy it is difficult to avoid. These cases are apparently examples of embolism from an intra-auricular thrombus. One of these patients who died with symptoms of uremia was found at necropsy to have a mural thrombus and extensive infarction of both kidneys. Both patients had rheumatic heart disease and fibrillation of many years' duration. The death of the third patient is not considered to be related to the quinidin therapy.

Q-T Interval in Human Electrocardiogram in Absence of Cardiac Disease

Dr. Edward P. Carter and E. Cowles Andrus, Baltimore: Experimentally, numerous observations have been made on the effect of changes in the electrolytic content of the perfusing fluid on the various phases of the galvanometric record. With a view to correlating these observations with conditions that obtain in the human subject, we have made certain studies on clinical conditions involving demonstrable changes in the serum electrolytes.

As the nature of the problem under investigation depended entirely on the admission of suitable cases to the wards of the hospital, it has been possible to investigate only a limited number of individuals. These have included infantile tetany, six cases, and adult tetany, three cases. A series of six cases of infantile tetany was carefully studied on the basis of accurate measurements of the galvanometric records, with a view to correlating particularly the lengthened Q-T interval seen in experimental calcium lack with the clinical condition known to be associated with a deficiency of serum calcium. Galvanometric records were taken soon after admission, and the serum calcium was determined at the same time. The infants then received calcium by mouth, and subsequent determinations of the serum calcium were made. Galvanometric records were again taken and measured after a reasonable period of calcium therapy.

In calculating the normal relation of the length of ventricular systole to the cardiac cycle, we used the formula of Bazett, who has stated that, in the adult electrocardiogram, $(Q\text{-}T)\ R\text{-}T = K \sqrt{R\text{-}R}$, the value of K being 0.36 for the female and 0.40 for the male. Recognizing the possible inaccuracy of this formula as applied to the infant's heart, we have also reduced their figures to a percentage basis. In the cases of infantile tetany, the Q-T interval was constantly prolonged relatively to Bazett's formula. This disparity decreased as the serum calcium rose. Similarly, the Q-T interval occupied a smaller percentage of the cardiac cycle as the calcium concentration in the serum increased.

Three observations were made on adults: A. C., woman, aged 35, showing typical carpal spasm and low blood calcium following overdosage with sodium bicarbonate; G. S., man, aged 40, with pyloric obstruction and gastric tetany, and A. K., woman, aged 35, having symptoms of tetany and a low blood calcium. In each of these cases the Q-T interval was prolonged more than 30 per cent. above Bazett's formula. Further, a limited number of observations on the effect of the ingestion of potassium chlorid by normal individuals have shown certain apparently definite variations of the galvanometric record analogous to the experimental results seen with an increase in the potassium content of a perfusing fluid. Finally, we studied in a similar way a series of twenty cases of diabetes in an attempt to correlate, if possible, the lengthened Q-T interval frequently found in this condition with the percentage of sugar present in the blood. We are forced to conclude that there is no relationship between the amount of hyperglycemia and the Q-T interval.

The Effect of Sodium Salicylate on the Development of Arthritis in Rabbits Inoculated with Streptococcus Viridans

Drs. Ralph H. Boots and Homer F. Swift, New York: The object of the series of experiments was to determine whether sodium salicylate administered to rabbits by stomach tube in doses comparable to those given patients with acute rheumatic fever would prevent arthritis, when the animals were inoculated with cultures of *Streptococcus viridans*. In view of the widespread opinion that acute rheumatic fever is due to infection with green streptococci, and with the definite clinical evidence that the arthritis in patients with acute rheumatic fever disappears under therapeutic doses of salicylates, it seemed probable that if the arthritis induced in rabbits by intravenous inoculation of green streptococci were of the same nature as is the arthritis of acute rheumatic fever, they might respond in a similar manner to that of patients. Healthy adult rabbits were divided into groups of from three to six; each group containing the same number were used in each experiment; one group received sodium salicylate by stomach tube in daily doses of from 0.2 to 0.3 gm. per kilogram of body weight. The control group received no drug. Various strains of green streptococci previously recovered from patients with acute rheumatic fever or streptococcus endocarditis were used for intravenous inoculations; some were known usually to produce arthritis in inoculated animals; others were less constant in this respect. Thus, organisms possessing various grades of virulence and arthrotropic capacity were used. All organisms were grown in broth, centrifugalized and resuspended in Ringer's solution. After inoculation the animals were inspected daily for the appearance of signs of arthritis; and, postmortem, all of the joints were examined for evidence of inflammation. Films were made of the fluid from all the joints and cultures from all turbid fluids. Fifty rabbits were inoculated in six experiments; twenty-five treated and twenty-five controls. Twenty-three animals in each group developed arthritis; it is evident, therefore, that the salicylates do not prevent arthritis in rabbits so inoculated. But an analysis of the character of the joint fluids brings out some interesting differences. If the fluid be classified according to gross and microscopic appearance three types are found: (*a*) Gross: Fluid clear. Microscopic: Polymorphonuclear and mononuclear cells moderately increased. (*b*) Gross: Fluid turbid. Microscopic: Polymorphonuclear and mononuclear cells much increased. (*c*) Gross: Fluid purulent. Microscopic: Polymorphonuclear and mononuclear markedly increased. The salicylated rabbits showed more exudates of Type *a* and relatively fewer of Types *b* and *c*. This was true not only in the average of all of the experiments, but also in the majority of the individual experiments. It seemed, therefore, that although the rabbits developed arthritis, the salicylated animals had a less severe inflammation of the joints than did the controls.

Experiences with the Low Salt Diet in Hypertension

Dr. James P. O'Hare, Boston: A series of eighteen cases of vascular hypertension in which the effect of an extremely low salt intake was studied showed only two cases in which this treatment might have caused a sufficient reduction in pressure to compensate for the difficulty in carrying out the treatment. It is virtually impossible to carry it out successfully except in the hospital.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Surgery, Philadelphia

May, 1922, **75**, No. 5

*Anomalous Abdominal Membranes. Their Influence on Digestive Tract. A. S. Taylor, New York.—p. 513.
Epithelioma of Genito-Urinary Organs. A. C. Broders, Rochester, Minn.—p. 574.
Case of Carcinomatous Papilloma of Renal Pelvis. L. H. Landon and N. M. Alter, Pittsburgh.—p. 605.
*Hernia of Bladder. J. N. Baker, Montgomery, Ala.—p. 615.
*Gas Cysts of Intestines. J. L. Bubis and C. E. Swanbeck, Cleveland.—p. 620.
Two Cases of Traumatic Diaphragmatic Hernia. C. B. Keenan, Montreal, Can.—p. 625.

Anomalous Abdominal Membranes. — The membranes encountered by Taylor were: (1) hepatoduodenal and hepatoduodenocolic; (2) duodenojejunal; (3) pericolic. Taylor asserts that anomalous membranes are present in from 15 to 20 per cent. of new-born infants. They result from atypical peritoneal fusion during fetal life. Many of them are probably modified by later pathologic changes due to continued traction, irritation, or low grade inflammation. They cause mechanical disturbances, fixation, angulation, compression and torsion of the digestive tract resulting in partial, continuous and often increasing obstruction. This, in turn, frequently causes dilation proximal to the obstruction. Symptoms result when the obstruction becomes greater than the peristaltic efficiency can easily overcome. The treatment is (*a*) prolonged medical and (*b*) surgical. Best incision is "transverse right rectus," as it gives best exposure of the whole field, and postoperative adhesions are in least troublesome situation. (*c*) Postoperative. Abdominal massage. Medical supervision of diet and general hygiene, etc. The results are very satisfactory, as a whole.

Hernia of Bladder. — The case of bladder herniation eported by Baker complicated an acute intestinal strangulaion at the inguinal opening.

Gas Cysts of Intestine.—An ulcer at the base of the appendix is believed by Bubis and Swanbeck to have been the portal through which the gas entered the layers of the cecum nd the ascending colon in their case.

Archives of Ophthalmology, New Rochelle, N. Y.

May, 1922, **51**, No. 3

Present Trend in Glaucoma Operations: Iris-Prolapse Technic. H. Herbert, Brighton, Eng.—p. 203.
Optic Nerve and Accessory Sinuses. J. Van Der Hoeve, Leiden, Holland.—p. 210.
Persistent Accommodative Spasm Due to Latent Hyperphoria. F. W. Marlow, Syracuse, N. Y.—p. 223.
Case of Metastatic Carcinoma of Choroid. J. A. MacMillan, Montreal.—p. 227.
Intermittent Ophthalmomalacia. S. O. Fields, Norfolk, Va.—p. 233.
Significance of Molluscum Contagiosum as an Etiologic Factor of Conjunctival and Corneal Disease. A. Elsching.—p. 237.
Primary Intraneural Tumors (Gliomas) of Optic Nerve. F. H. Verhoeff, Boston.—p. 239.
Sympathetic Ophthalmia: Report of Two Cases Cured. D. T. Vail, Cincinnati.—p. 255.
Use of Gullstrand Slit Lamp. H. S. Gradle, Chicago.—p. 264.

California State Journal of Medicine, San Francisco

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Problems of Industrial Medicine in California. G. W. Goodale, San Francisco.—p. 149.
Popularization of Medical Knowledge. H. I. Leviton, Los Angles.—p. 152.
Treatment of Oak Dermatitis Caused by Rhus Diversiloba. H. E. Alderson, Sar Francisco.—p. 153.
Outbreak of Epidemic Jaundice in Nevada City, California. A. H. Tickell, Nevada City.—p. 154.

Treatment of Oak Dermatitis.—Alderson uses an alcoholic solution of the toxin of the poison oak plant (*Rhus diversiloba*). A given weight of fresh crushed leaves of rhus diversiloba is covered with absolute alcohol, extracted, filred and precipitated, and the precipitate dried at low temperature. A given weight of the toxin is dissolved in absolute alcohol and sterile water added. An arbitrary standard is set for the weight of the toxin, volume of absolute alcohol and the volume of sterile water. Of several hundred patients injected only a few have felt faint or nauseated, and in each instance this was due principally to psychologic factors. It is not claimed that this treatment is invariably successful, but in most cases the results by this method are superior to those seen after any other plan of therapy. From 0.5 to 1.5 c.c. are given intragluteally and the dose is repeated again in twenty-four hours, and again twenty-four hours later if improvement in the subjective and objective symptoms is not very definite. Usually within forty-eight hours there is great improvement and it is seldom that a third injection is found necessary. At the same time the following solution is given by mouth until finished: oak toxin solution, 4 gm.; aromatic elixir, 90 c.c. Begin with 10 drops in water three times daily, increasing by one drop each dose until 20 drops are being taken. Then take one teaspoonful once daily. By this method tolerance for the poison may be established. It is recommended that this solution be taken once a year.

Canadian Medical Association Journal, Toronto

May, 1922, **12**, No. 5

*Carcinoma of Rectum. Two Cases. A. T. Bazin, Montreal.—p. 281.
Aortic Dilatation and Aneurysm. W. Wilson, Vancouver, B. C.—p. 283.
Pathology and Treatment of Chronic Catarrhal Deafness. P. G. Goldsmith, Toronto.—p. 293.
Notes on Newer Pathology of Syphilis. J. J. Mackenzie, Toronto.—p. 300.
Symptoms of Recovery. E. Moorhead, Winnipeg.—p. 302.
Treatment of So-Called Sciatica. J. A. Nutter, Montreal.—p. 306.
Tetanus. H. H. Hepburn.—p. 312.
Relationship Between Suprarenals and Thyroid. F. A. C. Scrimger, Montreal.—p. 316.
Differential Diagnosis of Diseases of Thyroid. J. Phillips, Cleveland.—p. 318.
Tuberculosis: Physical Signs. W. J. Dobbie, Weston.—p. 327.
Two Cases of Rheumatoid Arthritis. A. M. Forbes, Montreal.—p. 331.
Ulcerative Colitis Due to Bacillus Dysenteriae, Simulating Pernicious Anemia. H. M. Young.—p. 332.
Intermittent Hydronephrosis Due to Kinking of Right Ureter by an Accessory Renal Artery. W. W. Beatty.—p. 333.
Purpura Hemorrhagica Complicated by Gangrene of Glans Penis and Lung Abscess. H. C. Cassidy.—p. 334.
Suppurative Parotitis. G. W. Aitken.—p. 335.
Syphilitic Aortitis and Endocarditis. J. C. Lindsay.—p. 335.
Diagnosis Uncertain, Help Wanted. H. Club.—p. 336.

Carcinoma of Rectum.—Bazin cites two cases, one occurring in a man aged 34. He urges making a careful examination in all cases of abdominal pain with vomiting and obstipation, and in cases of rectal bleeding and painful defecation in order that the carcinoma, if present, may be detected early and thus increase the possibility of effecting a cure.

Illinois Medical Journal, Oak Park

May, 1922, **41**, No. 5

Aids to Diagnosis in Medicine. H. E. Tuley, Louisville, Ky.—p. 333.
Newer Methods of Cesarean Section. J. B. De Lee, Chicago.—p. 341.
*Moonshine Psychosis. B. Lemchen, Chicago.—p. 345.
Clinical Diagnosis of Spinal Cord Tumors. J. E. Royer, Chicago.—p. 347.
When Is Simple Mastoid Operation Indicated in Treatment of Acute Mastoiditis? C. F. Yerger, Chicago.—p. 350.
Graphic Explanation of Wassermann Reaction. F. Herb, Chicago.—p. 354.
Modified Technic for Control of Tonsillar Hemorrhage. H. M. Thometz, Chicago.—p. 356.
Obstetric Problems of Country Doctor. G. M. Baker, Altamont, Ill.—p. 357.
Treatment of Nonactive Clinical Tuberculosis. N. C. Iknayan, Charleston, Ill.—p. 361.
Hypothyroidism and General Practitioner. J. H. Hutton, Chicago.—p. 363.
Epigastric Hernia. R. J. E. Oden, Chicago.—p. 367.
Psychiatry and Physician. C. H. Anderson, Anna, Ill.—p. 369
*Case of Lysol Poisoning O. B. Ormsby, Murphysboro, Ill.—p. 371.
Rural Surgery Under Difficulties. J. W. Bowling, Shawneetown, Ill.—p. 372.
Types of Severe Anemia. A. Stengel, Philadelphia.—p. 374.

Poisoning by Liquor Cresolis Compositus.—Ormsby relates the case of a man, about 25, who swallowed about 2 ounces of liquor cresolis compositus. The patient was apparently delirious, raving and struggling with anyone who attempted to restrain him. The stomach was washed out a number of times with a weak solution of sodium bicarbonate and alcohol, finally finishing up with about one-half pint of milk, which was allowed to remain in the stomach. The following day the patient was rational, and seemed fairly comfortable. The urine was black. There was a most profuse flow of mucus secretion from the chest, the patient spat up about 1 pint in each six hours. The black urine persisted for forty-eight hours. At no time was there even a suggestion of cardiac failure, and at no time was any stimulant used. The patient made an uninterrupted and rapid recovery, being discharged eight days after the dose.

Iowa State Medical Society Journal, Des Moines

May, 1922, **12**, No. 5

Do We Progress? W. A. Rohlf, Waverly.—p. 169.
Relation That Exists Between Hypertension, Myocarditis and Nephritis. H. A. Christian, Boston.—p. 171.
Luminal in Treatment of Epilepsy. M. N. Voldeng, Woodward.—p. 175.
Conservative Surgery of Female Pelvic Organs. A. G. Shellito, Independence.—p. 179.
Combined Anesthesia. C. Ryan, Des Moines.—p. 181.
Educational Phase of Public Health. J. F. Throckmorton.—p. 184.
Tumors Involving Oral Cavity, Upper Respiratory Passages and Ears and Some Observations Following Use of Radium. M. Armstrong, Iowa City.—p. 187.

Journal of Experimental Medicine, Baltimore

May, 1922, **35**, No. 5

*Cutaneous Nematode Infection in Monkeys. H. F. Swift, R. H. Boots and C. P. Miller, Jr., New York.—p. 599.
Virulence and Mutation of Bacillus of Rabbit Septicemia. P. H. De Kruif, New York.—p. 621.
Collodion Sacs for Aerobic and Anaerobic Bacterial Cultivation. F. L. Gates, New York.—p. 635.
Heat and Growth Inhibiting Action of Serum. A. Carrel and A. H. Ebeling, New York.—p. 647.
*Cicatrization of Wounds. XIII. Temperature Coefficient. A. H. Ebeling, New York.—p. 657.
Action of Antigen on Fibroblasts in Vitro. A. Fischer, New York.—p. 661.
Petrolatum Tube and Syringe Method of Micro Gas Analysis of Bacterial Cultures. J. H. Brown, Princeton, N. J.—p. 667.
Studies on Pneumococcus. I. Acid Death Point of Pneumococcus. F. T. Lord and R. N. Nye, Boston.—p. 685.
Id. II. Dissolution of Pneumococci at Varying Hydrogen Ion Concentrations. Effect of Temperature, Previous Killing of Organisms, and Fresh Human Serum on Phenomenon. Behavior of Other Organisms. F. T. Lord and R. N. Nye, Boston.—p. 689.
Id. III. Dissolution of Pneumococci in Pneumonic Cellular Material at Varying Hydrogen Ion Concentrations. Resistance of Certain Other Organisms to Dissolution. F. T. Lord and R. N. Nye, Boston.—p. 699.
Id. IV. Effect of Bile at Varying Hydrogen Ion Concentrations on Dissolution of Pneumococci. F. T. Lord and R. N. Nye, Boston.—p. 703.
Surface Tension of Serum. II. Action of Time on Surface Tension of Serum Solutions. P. Lecomte Du Nouy, New York.—p. 707.
Pathology of Dermatitis Caused by Megalopyge Opercularis, Texan Caterpillar. N. C. Foot, Boston.—p. 737.

Cutaneous Nematode Infection.—A number of monkeys (*Macacus rhesus*) were found by Swift et al. to be infected with a nematode which gave rise to several types of skin lesions, subcutaneous nodules, edema about the joints, and elongated serpiginous blisters of the palms and soles. In the subcutaneous nodules were found larval forms of the nematode and possibly adult male forms. This is believed to be the first description of a nematode that lays its eggs in the epidermis. The provisional name given the parasite is *Trichosoma cutaneum*, 1922.

Effect of Heat on Wound Healing.—For a rise of temperature of 10 C., the rate of cicatrization was increased about twofold. Ebeling asserts that this result could be expected, since wound healing is closely related to the phenomenon of growth and regeneration. It is classical that changes in temperature affect the metabolism and the development of certain organisms in the same manner as a chemical reaction. In spite of the complexity of the factors which bring about the cicatrization of a wound, it appears that the velocity of the phenomenon depends on the rate at which certain chemical changes take place.

Journal of Industrial Hygiene, Boston

May, 1922, **4**, No. 1

Physician in Industry. C. E. Ford, New York.—p. 1.
Lead Studies: 1. Estimation of Minute Amounts of Lead in Biologic Material. L. T. Fairhall.—p. 9.
Skin Diseases Commonly Seen by Industrial Physician. E. L. Oliver, Boston.—p. 21.
Experimental Observations on Relation Between Atmospheric Conditions and Production of Fatigue in Mine Laborers. A. J. Orenstein and H. J. Ireland, Johannesburg, S. Africa.—p. 30.

Journal of Infectious Diseases, Chicago

May, 1922, **30**, No. 5

Formol and Wassermann Reactions. M. Armangue and P. Gonzales, Barcelona, Spain.—p. 443.
*Differentiation and Identification of Sporulating Anaerobes. I. C. Hall, Berkeley, Calif.—p. 445.
*Presence of B. Lactimorbi in Throats of Cats. R. G. Perkins and J. K. Shen, Cleveland.—p. 505.
Preparation of Toxin-Antitoxin Mixture. P. G. Heineman and C. R. Hixson, Woodworth, Wis.—p. 508.
*Epizootic Among Guinea-Pigs Due to Paratyphoid B Bacillus. K. M. Howell and O. T. Schultz, Chicago.—p. 516.
Effect of Peptone on Toxigenic Property of B. Diphtheriae No. 8. H. L. Wilcox, New York.—p. 536.
*Action of Neo-Arsphenamin and Neosalvarsan on Phagocytic Activity of Leukocytes. R. Tunnicliff, Chicago.—p. 545.
Conductivity of Bacterial Cells. R. G. Green and W. P. Larson, Minneapolis.—p. 550.

Identification of Sporulating Anaerobes.—A critical study of the taxonomy of the obligate anaerobes based on a collection of carefully and repeatedly purified strains, secured from various sources, is presented by Hall. Emphasis is laid on certain purity as an underlying principle in the classification of the anaerobes. Various criteria for identification are discussed in the order of their proper utilization, with respect to their significance, technic and limitations as follows: Morphology, action on proteins, and action on carbohydrates. These points are utilized in setting up a differential key that may be used in the identification of the forms most commonly encountered. The last section of the article discusses the details of origin, purification, differentiation and identification of various cultures.

B. Lactimorbi Like Diphtheria Bacillus.—The occurrence of *B. lactimorbi* in the throat of cats is described by Perkins and Shen and the danger of this bacillus being mistaken for *B. diphtheriae* is emphasized.

Tubercle-Like Lesions Caused by Paratyphoid B. Bacillus.—The infectious disease which developed among guinea-pigs and which is reported on by Howell and Schultz was characterized by the occurrence of multiple tubercle-like lesions of the spleen and of the liver. The disease was of the type to which the name pseudotuberculosis has been applied. From the infected animals there was isolated a gram-negative, motile bacillus which had the cultural characteristics of the colontyphoid intermediate group. The bacillus was isolated, usually in pure culture, from the lesions and from the heart blood. Immunologically the organism was distinct from the representatives of the four fixed species of the group. It was agglutinated in low dilutions (1:160) of a serum against the Jordan strain of human paratyphoid B. The epizootic was apparently brought under control by immunization of the guinea-pig stock with a killed polyvalent suspension of the organism.

Action of Neo-Arsphenamin on Phagocytic Activity of Leukocytes.—In proper concentrations, neo-arsphenamin and neosalvarsan, Tunnicliff says, may increase the phagocytic activity of leukocytes, both in vitro and in vivo. In vivo the stimulating effect is rapid and of short duration, occurring, as a rule, within thirty minutes after intravenous injection. Further study is necessary to determine what part, if any, this stimulus of the phagocytic activity of the leukocytes plays in the curative action of neo-arsphenamin and allied products.

Missouri State Medical Association Journal, St. Louis

May, 1922, **19**, No. 5

*Acute Osteomyelitis: Regeneration of Entire Shaft of Humerus. F. G. Nifong, Columbia, Mo.—p. 203.
Atypical Forms of Exophthalmic Goiter (Form Fruste, Interstitial Goiter). A. E. Hertzler, Kansas City, Mo.—p. 207.
Clinical and Chemical Diagnosis of Gastric Ulcer. F. D. Gorham, St. Louis.—p. 209.
Roentgen Ray Diagnosis of Gastric Ulcer. O. A. Ambrose, St. Louis.—p. 212.
Factors in Prognosis of Hypertensive Renal and Vascular Disease. O. P. J. Falk, St. Louis.—p. 214.
Malaria Control. L. D. Fricks.—p. 218.

Headaches of Nasal Origin. C. A. Moore, Springfield, Mo.—p. 220.
Abruptio Placentae (Uteroplacental Apoplexy). L. Dorsett, St. Louis.—p. 223.
Factors Which Influence Results in Rectal Surgery. W. H. Stauffer, St. Louis.—p. 224.

Extensive Destruction of Humerus with Regeneration.—The case reported by Nifong shows the wonderful capacity provided by nature for the building of new bone after an acute infection. There was an extensive destruction en masse, removal of the sequestrum which was the entire shaft of the humerus. Only the articular surfaces of the ends were left with the periosteum or involucrum which was the periosteum and barely palpable plaques of bone with it. From this complete reformation of the humerus took place and Nifong says nothing could demonstrate the importance of the periosteum and its function more clearly than this case. The patient was 12 years of age. No transplant was used. The periosteum was sutured together. Twenty-three months after operation the humerus was restored and motion was not far short of normal.

Michigan State Medical Society Journal, Grand Rapids

May, 1922, **21**, No. 5

Hematuria. R. Rosen, Detroit.—p. 187.
*Phlegmonous Gastritis. C. D. Brooks and W. R. Clinton, Detroit.—p. 193.
Local Anesthesia in Herniotomy. W. T. S. Gregg, Calumet.—p. 194.
Acute Mastoiditis Occurring in Microtia. D. A. Cohoe, Detroit.—p. 196.
Future Public Health Interests and Activities. III. Objectives in Future Public Health. J. Sundwall, Ann Arbor.—p. 197.

Phlegmonous Gastritis.—In the case cited by Brooks and Clinton it is suggested that the gastric pathology was probably due to a septic embolus (following tonsillitis) producing a phlebitis in the left saphenous vein on the twelfth day. On the fifteenth day, a small pulmonary infarct formed. On the twenty-eighth day a large pulmonary embolism caused death.

Nebraska State Medical Journal, Norfolk

May, 1922, **7**, No. 5

Cooperation in Medicine; Spirit of Times. B. B. Davis, Omaha.—p. 149.
Acute Ileus: Differential Diagnosis. D. Macrae, Jr., Council Bluffs, Ia.—p. 154.
Diagnosis of Cancer of Stomach. A. D. Dunn, Omaha.—p. 159.
Radiation Treatment of Uterine Cancer. A. F. Tyler, Omaha.—p. 162.
Syphilis. A. Schalek, Omaha.—p. 165.
Ophthalmologist's Relation to Syphilis. S. R. Gifford, Omaha.—p. 167.
*Case of Botulism from Eating Commercially Canned Pork and Beans. H. E. Harvey, Fairbury, Neb.—p. 170.
*Blastomycosis. J. F. Langdon, Omaha.—p. 172.

Botulism from Eating Canned Pork and Beans.—Twenty-our hours after onset of symptoms indicative of a severe oxemia, Harvey's patient, aged 3½ years, died. The illness began with a slight chill. Later the boy vomited twice and had watery stools. The general examination was negative xcept for an irregular nystagmus, slight twitching of musles and a look of extreme prostration. The next morning, pulse was 140, temperature 102 F., respiration slow and shallow; slight cyanosis present. The pupils did not react. No neck rigidity was present. Cyanosis and prostration ncreased, the former being very marked just before death. Three other members of the family were slightly ill. Quesions revealed the fact that canned pork and beans had ormed a large part of the meals during the two preceding ays. The food had not been cooked, but merely warmed. Cultures from two unopened cans and two of the opened cans showed organisms with cultural and morphologic characterstics of *B. botulinus.*

Blastomycosis Lesion on Site of Trauma.—In the case eported by Langdon the lesion first appeared on the site of n injury to a finger. Four other lesions developed on the and, wrist and elbow. Cultures showed the presence of blastomycetes. The day following the taking of the culture, he patient complained of a sharp pain in the upper right hest. The following day, however, he experienced no furher trouble. A roentgenogram taken at this time showed vidence of an old, healed pulmonary tuberculosis to which Langdon directs special attention because nearly all cases of pulmonary blastomycosis present the clinical picture of tuberculosis and are usually diagnosed as such. The treatment in this case—which was effective—was large doses of potassium iodid.

New Jersey Medical Society Journal, Orange

May, 1922, **19**, No. 5

Agitation for Free Choice of Physician in New York and What It Leads to. E. V. Delphey, New York.—p. 123.
Potter Version: Its Indications and Contra-Indications. W. J. Harman, Trenton, N. J.—p. 128.
Traumatic Hip Case of Industrial Origin. J. N. Bassin, Newark.—p. 130.
Infant Welfare Work. J. H. Marcus.—p. 131.

New York Medical Journal and Medical Record

May 17, 1922, **115**, No. 10

Etiology of Feeblemindedness: Prenatal Enamel Defects. L. P. Clark and C. E. Atwood, New York.—p. 573.
Group of Cases Illustrating Diagnostic Difficulties During an Epidemic of Acute Encephalitis. I. Strauss and J. H. Globus, New York.—p. 580.
Penetrating Injuries of Eye by Steel Particles. F. Allport, Chicago.—p. 589.
Protein Sensitization as Possible Cause of Epilepsy and Cancer. J. F. Ward, Brooklyn.—p. 592.
Summary of a Year's Work (1920) in Urology. N. P. Rathbun and G. Phillips, Brooklyn.—p. 595.
Operating Room. J. F. X. Jones, Philadelphia.—p. 601.
Outpatient Clinic. J. M. Wallfield, Brooklyn.—p. 607.
Tonsils. S. Cohen, Philadelphia.—p. 608.
Experimental Rickets in Rats. V. Korenchevsky, London.—p. 612.
Significant Signs in Acute Surgical Diseases in Children. L. M. Kahn, New York.—p. 614.
Medicolegal Aspect of Morbid Impulses. A. Gordon, Philadelphia.—p. 616.
Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 621.

New York State Journal of Medicine, New York

May, 1922, **22**, No. 5

Panaceas. J. F. Rooney, Albany, N. Y.—p. 201.

Ohio State Medical Journal, Columbus

May, 1922, **18**, No. 5

Prevention of Deformity. C. H. Hyman, Cleveland.—p. 333.
*Argyria. O. P. Kimball, Cleveland.—p. 336.
Value of Spinal Fluid Examination. C. E. Kiely, Cincinnati.—p. 339.
Solving Malnutrition Among School Children E W Schlemmer, Cincinnati—p. 342.
Newer Roentgen-Ray Technic for Treatment of Cancer. J. H. Schroeder, Cincinnati.—p. 345.
*Value of Tests for Renal Function in Clinical Medicine. H. O. Mosenthal, New York.—p. 348.

Argyria.—A man, aged 21, with a duodenal ulcer, was given 10 minims of 10 per cent. silver nitrate solution after each meal for about eight months. Up to this time he had taken a total quantity of 1½ ounces of silver nitrate or approximately 1 ounce of silver. His general appearance was that of a normal, healthy young man, except for a slight but definite discoloration of the sclera and the face, which was most noticeable under the eyes and over the nose, where it was almost a slate color. The mucous membrane of the mouth was pale, and of a bluish tinge, the gum margins being distinctly blue with a definite black stippled line of metallic deposit on the gum margins of several teeth. The tonsils were large and cryptic and showed a more pronounced color than the mucous membrane of the mouth and throat. Although the temperature was 100.4 F., there was no clinical evidence of any pathologic condition in the chest or abdomen. The urine was loaded with albumin and fine granular casts. The blood findings were: red blood cells, 2,900,000; white blood cells, 2,800; hemoglobin, 45 per cent. The blood picture was that of a rapidly produced secondary anemia with definite variation in the size of the red cells although no nucleated cells could be found. In two months the blood picture showed a marked improvement in every respect. The nephritis so clearly manifested at the first examination was exactly like that seen in cases due to lead, mercury, bismuth or any other metallic poisoning. The tonsils were removed and chemical tests showed that the blue-gray color was due to silver deposits. In excised specimens, or at necropsy the presence of silver could be determined by the immediate disappearance of the color on the application of strong potassium cyanid and its reappearance on exposure to hydrogen sulphid gas.

Test for Renal Function.—A method of procedure is outlined by Mosenthal by means of which an estimation of renal function and the suitability of the patient's diet and habits to his needs may be carried out in the ambulant subject. The direct evidence of what diabetic habits are not suited to the case is developed and the required corrections may be made with a minimum of discomfort to the patient and with the most effective results.

Pennsylvania Medical Journal, Harrisburg

May, 1922, **25**, No. 8

Endocrine System: Some Relations to Ophthalmology and Otolaryngology. P. Fridenberg, New York.—p. 523.
Etiologic Relation of Eye to Endocrine Organs. W. Zentmayer, Philadelphia.—p. 527.
Rôle of Thyroid in Otolaryngology. H. A. Schatz, Philadelphia.—p. 529.
Fractures of Shaft of Femur. T. T. Thomas, Philadelphia.—p. 538.
Primary Carcinoma of Lung. F. J. Dever and C. E. Royce, Bethlehem.—p. 545.
Vitreous Loss: Its Effect on End Result of Cataract Extraction: Its Prevention. L. W. Fox, Philadelphia.—p. 550.
Basal Metabolic Rate in Constitution Inferior Children. H. O. Pollock and E. B. McCready, Pittsburgh.—p. 556.
Child's Right to Health. E. A. Glenn, Berwick.—p. 557.
Harelip and Cleft Palate. S. L. McCurdy, Pittsburgh.—p. 560.
Dangers of Electric Motors Within Metabolism Apparatus. F. B. Sanborn.—p. 564.

Philippine Journal of Science, Manila

January, 1922, **20**, No. 1

Two Cases of Ectrosyndactyly. S. E. Yap and E. V. Pineda.—p. 1.
Commercial Acetylsalicylic Acid. M. V. Del Rosario and P. Valenzuela.—p. 15.
Geologic Reconnaissance of Pidatan Oil Field, Cotabato Province, Mindanao. W. D. Smith, Manila.—p. 23.
Recent Improvements in Nipa-Sugar Manufacture. A. H. Wells and G. A. Perkins, Manila.—p. 45.
Drainage Control by Jointing in Angat District, Bulacan Province, Philippine Islands. H. G. Schenck, Manila.—p. 57.
Philippine Serphidae (Proctotrupidae). J. J. Kieffer, Lorraine, France.—p. 65.
Identification of Ambergris. H. I. Cole, Manila.—p. 105.
New Malayan Cixiidae (Homoptera). F. Muir.—p. 111.

Rhode Island Medical Journal, Providence

May, 1922, **5**, No. 5

Medicinal Plants. H. P. Lovewell, Providence.—p. 237.
Clinical Interpretation of Wassermann Reaction. H. C. Solomon.—p. 242.

Southern Medical Journal, Birmingham, Ala.

May, 1922, **15**, No. 5

Difficulties and Errors Before and After Antimalaria Campaigns. C. C. Bass, New Orleans.—p. 339.
Malarial Relapses. H. H. Howard, New York.—p. 343.
Necessity for and Methods of Securing Accurate Malaria Statistics in Demonstration Areas. O. Dowling, New Orleans.—p. 347.
Problems Encountered in Maintaining Urban Malaria Control. C. W. Garrison, Little Rock, Ark.—p. 352.
Direct and Indirect Advantages of Urban Malaria Control to State Health Program. S. W. Welch, Montgomery, Ala.—p. 359.
Rural Malaria Control with County as Unit. E. G. Williams, Richmond, Va.—p. 362.
Importance of and Factors to Be Considered in Selecting New Towns for Malaria Control Demonstrations. J. A. Hayne, Columbia, S. C.—p. 368.
Fish as an Antimosquito Agency. J. A. LePrince, Memphis, Tenn.—p. 371.
Efficient and Economical Use of Oil in Prevention of Malaria. E. B. Johnson, Montgomery, Ala.—p. 374.
*Tolerance of Children for Digitalis. H. McCulloch and W. A. Rupe, St. Louis.—p. 381.
Encephalomeningocele Through Foramen Cecum. W. L. Funkhouser, Atlanta, Ga.—p. 385.
*Rural Administration of Antisyphilitic Treatments. H. R. Hays, Jackson, Miss.—p. 387.
*Unique Case of Chronic Morphinism. S. T. Lipsitz, St. Louis.—p. 389.
Review of 300 Cases of Breast Disease. I. Abell and S. Graves, Louisville, Ky.—p. 390.
Value of Blood Chemistry to Surgeon. W. H. Bailey, Oklahoma City, Okla.—p. 394.
Congenital Hydronephrosis. A. I. Folsom, Dallas, Tex.—p. 399.
Correlation of Roentgen-Ray Interpretations, with Clinical Findings and End Results in Railway Surgery. E. T. Newell, Chattanooga, Tenn.—p. 402.
Malaria and Eye, Nose and Throat Infections. H. B. Searcy, Tuscaloosa, Okla.—p. 406.
*New Treatment for Hay-Fever During Attack. C. M. Miller, Richmond, Va.—p. 408.
Group Medicine. W. P. Harbin, Rome, Ga.—p. 410.
Association vs. Isolation for Young Man in Private Practice. S. R. Roberts, Atlanta, Ga.—p. 411.
Organized or Closed Staff: Advantages and Possibilities. J. B. Franklin, Dallas, Tex.—p. 415.

Tolerance of Children for Digitalis.—McCulloch and Rupe have been administering digitalis to children with heart disease in an effort to determine, first, how much of a standardized preparation of digitalis is necessary to produce a physiologic effect on the heart; second, how closely the clinical improvement in the patient coincides with the appearance of physiologic effects on the heart; third, in what way do children differ from adults in their responses to digitalis. It was found entirely practical to use large doses of digitalis and this method of administration possesses for children all the advantages that it does for adults when compared with the alternative method of using smaller doses given for a long period of time. The total amount of the drug necessary to produce an effect on the heart can be estimated according to the method of Eggleston. It is necessary to know the body weight of the child and the strength of the preparation of digitalis, whether it be dried leaves, tincture or infusion. The authors give 50 per cent. of the estimated dose at midnight, 25 per cent. at 4 a. m., and if no effects have appeared at 8 a. m., give the remaining 25 per cent. This permits more convenient periods during the day to have the child under observation. Vomiting or electrocardiographic changes always occur during the day period of twelve hours. In such cases when it was necessary to give more than the estimated dose—and this was frequently the case—it has been given 12 noon and at 4 p. m. There are two indications for the use of digitalis in children. First, those who are suffering from heart disease and who are in a state of chronic cardiac failure. Second, those who have a regular rapid heart rate when that heart rate cannot be slowed by other measures. Massive doses of digitalis are contraindicated in two groups of children with heart disease: First, those who have an acute infectious or toxic myocarditis; second, those who are suffering from acute cardiac failure with hearts that are overloaded.

Rural Administration of Neo-Arsphenamin and Mercury.—A few ampules containing 15 c.c. of sterile, distilled water, together with two Luer syringes, one 10 c.c. and one 2 c.c., with needles 20 x ¾ and 20 x 1¾, a 4-ounce bottle of denatured alcohol, 1 ounce of cotton, the neo-arsphenamin and the mercury in oil for hypodermic use, together with a sterno heating unit, Hays says, can be carried in a physician's small satchel. With this equipment neo-arsphenamin can be given a patient just as safely and scientifically as in a hospital.

Unique Case of Chronic Morphinism in Child.—A woman, aged 49, had been a morphin addict for twenty years. The average daily quantity she had taken had been from 4 to 8 grains. Her general condition had been fairly good. Fourteen years previously, when she was pregnant, she was taking morphin daily. When the child was born the mother was told that in order that the infant might live it would be necessary to give her small doses of morphin. This practice was continued daily from the time of birth and the girl had had morphin in ascending doses until the time of admission when she was 14 years of age. She had not missed a day since she was born and was then getting from 4 to 6 grains each day by mouth. It was first given her in "small amounts" measured on a knife blade and mixed with milk. The child was breast-fed for about one month. The girl was tall, thin and pale. She showed no definite signs of physical or mental degeneracy or of organic disease. Her intelligence was deficient mainly because of insufficient schooling. On account of constant illness associated with her morphinsim she was out of school all but one year. The girl complained of severe pain radiating upward to the abdomen and of general weakness. This was most severe when the effects of the morphin would wear off. The bowels were usually constipated. The menstrual flow had not appeared. The girl was somewhat anemic. The chest was flat. She was slow in developing her secondary sexual characteristics. The abdomen was somewhat sunken. The systolic blood pressure was only ninety-five. At the hospital the morphin was gradually reduced and finally discontinued. Substitutes were employed and forced feeding was instituted. The girl left the hospital in an improved condition, apparently cured of the habit.

Nasal Secretion Filtrate Injected Intramuscularly for Hay-Fever.—Some patients seek relief only when an attack is on them and with these the use of pollen extracts is of no benefit. It is with this class of patients that the treatment described by Miller is used and in his hands it has proved most beneficial. Dry cotton swabs are placed in each side of the nose, well up in the region of the middle turbinate and allowed to remain from three to ten minutes or until thoroughly saturated with the secretion present. The swabs are then removed and placed with about 20 c.c. of sterile water in a small Mandel filter. The filter is placed over a small glass beaker and the entire apparatus set aside for filtration. The filtration takes from two to six hours, so the patient is directed to return the following day for injection. A fresh filtrate is made for each injection and the injections are given intramuscularly. For the first injection, the solution that comes through the filter is diluted, one part of filtrate to seven of sterile water and 0.05 c.c. of this dilution is given. For the next injection given, dilution is made from one to six, and 0.75 c.c. is given, and for each succeeding dose, the dilution is decreased by one and the size of the injection increases by 0.25 c.c. Thus when the seventh dose is given, the dilution is only one and the injection 2 c.c. After this, if more is to be given the straight filtrate can be used, but the dosage should be cut back to, say, 0.5 or 0.75 c.c., particularly if there has been much local or systemic reaction to the diluted dosage. Following this, the straight filtrate dosage can be increased according to reaction. The best results have been gotten in patients in whom a reaction occurred after the use of the injection.

Surgery, Gynecology and Obstetrics, Chicago

May, 1922, **34**, No. 5

*Large Epidermal Cholesteatoma of Parietotemporal Region Deforming Left Hemisphere Without Cerebral Symptoms. H. Cushing, Boston.—p. 557.
*Present Status of Operative Obstetrics Referring to Abuse of Cesarean Section. J. O. Polak and A. C. Beck, Brooklyn.—p. 566.
*Traumatology of Carpus. A. H. Bizarro, London.—p. 574.
Modern Treatment (Radiotherapy) of Cancer of Lip. H. K. Pancoast, Philadelphia.—p. 589.
*Radium Treatment of Myoma of Uterus and Myopathic Bleeding. C. J. Miller, New Orleans.—p. 593.
Cranial Nerve Palsies Produced by Tumors in Region of Jugular Foramen. W. O. Ott, Rochester, Minn.—p. 597.
Congenital Megacolon in Adult. W. F. Fowler, S. C. Davison and R. R. Mellon, Rochester, N. Y.—p. 601.
Pathologic Fractures. E. A. Codman, Boston.—p. 611.
*Unusually High Degree of Leukocytosis Following Splenectomy for Banti's Disease. J. E. Thompson and V. H. Keiller, Galveston, Tex.—p. 614.
Penetrating Abdominal Wounds. N. Winslow, Baltimore.—p. 617.
Remaining Breast After Radical Removal of Opposite Side for Carcinoma. H. H. Trout, Roanoke, Va.—p. 630.
*Hyperemesis Gravidarum. C. E. Paddock, Chicago.—p. 633.
Childbirth. C. H. Davis, Milwaukee.—p. 636.
*"Bipp" Method of Treatment. R. Morison.—p. 642.
Moure Operation for Removal of Large Growths and Foreign Bodies from Antrum. V. Dabney, Washington.—p. 667.
*Practical Method of Fixation in Fractures of Mandible. R. H. Ivy, Philadelphia.—p. 670.
*Postoperative Peritoneal Adhesions. C. S. Williamson and F. C. Mann, Rochester, Minn.—p. 674.
Nephrotomy and Decapsulation for Anuria, in Case of Single Kidney; Recovery. S. S. Leopold and M. Behrend, Philadelphia.—p. 677.
Improved Needle Forceps. E. A. Printy, Chicago.—p. 679.

Cholesteatoma of Parietotemporal Region.—Cholesteatomas, r pearly tumors proper, Cushing says, arise from epithelial mplantations which occur in the development of the embryo. 'hey are seen in their most typical form in the leptomenges, more commonly between the cerebellum overlying the ourth ventricle, and in the infundibular region. They also ccur in the cerebellopontile recess, and in the Sylvian cleft. 'hese epithelial implantations may be either epidermoid or ermoid. Hair containing tumors when arising in the leptoeninges may have all the external characteristics of the ypical pearly tumor of Cruveilhier. The epidermal cholesеatomas, relatively common in the petrous and mastoid porions of the temporal bone, are in all probability of the same ature, for precisely similar tumors may be found elsewhere the skull, over frontal, parietal and occipital regions disant from the temporal bone. As the inner table of the skull ecomes absorbed, these tumors, though remaining extradural, ay attain a large size and come to deform the brain greatly. 'hey are capable of recognition by the roentgen ray owing the associated bone defect, and are capable also of comete surgical removal if approached by a flank rather than direct attack in order that the epidermal membrane may be peeled from the dura. This desideratum is hardly possible if the central mass is primarily opened through the defect, thereby permitting the delicate lining membrane of the sac to collapse.

Present Status of Operative Obstetrics.—The present status of operative obstetrics is reviewed by Polak and Beck and the endeavor is made to show that there is a difference between surgical obstetrics and obstetric surgery done for justifiable indications; second, that routine operative intervention, even in the hands of the expert, is not free from danger to both mother and child; and finally that while cesarean section is the easiest and quickest method of delivery, there is a higher morbidity and a higher mortality following abdominal hysterotomy, than follows abdominal section generally in properly selected cases. Two groups of about 1,000 cases each are analyzed and the conclusions are drawn that surgical intervention is being too freely employed to terminate labor, and furthermore that the results for mother and child from such interference (oftentimes unindicated) with the physiologic processes of labor do not justify their employment. The adoption of the principle and practice of aseptic intelligent expectancy in labor, when the factors of labor are known to be normal or to approximate the normal, is still the safest method of delivery not only for the mother but for the fetus. There is a high morbidity even in the clean cesarean section, very much higher in fact than is common in operations for pelvic tumors, such as fibromyoma and ovarian cysts. This is due to the presence of infective bacteria in the cavity of the puerperal uterus, which migrate from the vagina to the interior of the uterus, through the open cervix. Even in expert hands there is a definite maternal risk from cesarean section, greater than is generally known. The mortality ranges from 2.9 to 14 per cent. depending on the time in labor at which operation is done, after rupture of the membranes and on the amount of vaginal invasion present.

Trauma of Carpus.—Bizarro asserts that very often the so-called "sprains," synovitis, arthritis of several kinds, rheumatism, of the wrist, are diagnosed a long time after a possible and almost forgotten trauma. One hundred and twenty-three cases of carpal injuries, sixty-eight being cases of fracture of the scaphoid and the remainder associated carpal lesions, are analyzed.

Radium Therapy of Myoma of Uterus.—A review of 183 cases extending over a period of seven years leads Miller to conclude that a large percentage of the cases of myoma of the uterus formerly subjected to operation can be permanently and safely relieved by radium, and that practically all cases of uncomplicated essential hemorrhage can be cured by radium.

High Leukocytosis in Banti's Disease.—Just before operation the blood cells in the case cited by Thompson and Keiller numbered 3,360,000 erythrocytes and 7,600 leukocytes. About two and one-half weeks after operation the count showed 3,288,000 erythrocytes and 35,400 leukocytes. Two months after operation the blood count was: 2,880,000 erythrocytes and 31,900 leukocytes.

Duodenal Feeding in Hyperemesis Gravidarum.—Three cases are reported by Paddock, the first so far as he knows, to be treated successfully by duodenal feeding. He says that these cases ordinarily would have been terminated by abortion. The women were sick. The bedside picture showed them to be desperately so, emaciated, listless, begging to be relieved of their distress, and the clinical findings showed beginning destructive organic changes. These patients are alive, two of them have had their babies, and the other one is about at term.

Bipp Treatment of Infected Wounds.—Thirty cases are reported by Morison in support of his contention that the "bipp" method of treatment of infected wounds has established the fact that, by the use of suitable antiseptics, such wounds can be closed with impunity and that healing "by first intention" may follow. Abscesses may be opened and, after treatment with antiseptics, closed again.

Fixation in Jaw Fractures.—A method of wiring the upper and lower teeth is described by Ivy which has proven efficient for reduction and retention of over 90 per cent. of fractures of the mandible met with in civil practice. For the occasional case, complicated by marked comminution or loss of bone substance, with destruction of teeth, in which fixation for several months may be required, the cast metal upper and lower splints, connected by removable lock-pins, are advised.

Prevention of Postoperative Peritoneal Adhesions.—Gelatin and gum acacia solution in the ratio of 25 per cent. of each to 50 per cent. of water has been used by Williamson and Mann to prevent the formation of peritoneal adhesions. It has extraordinary adhesive qualities; so much so that at body temperature it will stick to practically everything, including the peritoneal surface. At room temperature it forms a tough membrane not unlike rubber. It is easily sterilized by boiling but does not remain the same after sterilization in the autoclave. At body temperature, it is a semisolid. The gelatin-acacia mixture, placed in the peritoneal cavity, sticks to the site of application, causes absolutely no reaction, dissolves slowly within from 4 to 8 hours, and is absorbed from the general body cavity.

Texas State Journal of Medicine, Fort Worth

May, 1922, **18**, No. 1

Treatment of Cataract. H. Smith, Amritsar, Punjab, India.—p. 11.
Status of Intracapsular Cataract Operations in North America, with Analysis of Procedure and Results. J. O. McReynolds, Dallas.—p. 16.
Precautions Necessary to Avoid Accidents in Intracapsular Extraction. W. A. Fisher, Chicago.—p. 19.
Postoperative Complications in Eye Surgery. L. H. Lanier, Texarkana. —p. 21.
Early Recognition of Glaucoma Simplex. H. C. Haden, Houston.—p. 24.
Intraocular Tension as I Have Seen It. T. F. Roberts, Paris, Texas. —p. 27.
Treatment of Corneal Ulcers. J. H. Burleson, San Antonio.—p. 29.
Ocular Muscles: Plea for More Thorough Study. E. L. Goar and W. Ralston. Houston.—p. 31.
Sphenopalatine Ganglion Neuralgia. H. T. Aynesworth, Waco.—p. 33.
Chronic Maxillary Sinusitis as Source of Focal Infection. T. E. Fuller, Texarkana.—p. 36.
Interesting Phases of Nasal Question. E. H. Cary, Dallas.—p. 38.
Cardiac Disease Complicating Pregnancy and Labor. C. R. Hannah, Dallas.—p. 41.
*Treatment of Menorrhagia with Black Willow Buds. I. L. Van Zandt, Fort Worth.—p. 42.
Two Cases of Glioma of Brain. V. H. Keiller, Galveston.—p. 45.

Black Willow Buds Check Menorrhagia.—Van Zandt has used fluid extract of black willow buds successfully in the treatment of painful priapism, as an anaphrodisiac, to check the bleeding associated with uterine fibroid, in menorrhagia, and in severe epistaxis. He usually orders 30 minims, three times daily. He reports very good results in a number of cases.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 6, 1922, **1**, No. 3201

Treatment of Paralysis in Children. R. Jones.—p. 705.
Influence of Industrial Employment on General Health. Greenwood. —p. 708.
*Value of Vaccines in Treatment of Whooping Cough. D. Paterson and J. M. Smellie.—p. 713.
*Arteriovenous Aneurysm Treated by Ligation of Left Subclavian Artery. C. Noon.—p. 714.
*Use of Van Den Bergh Test in Differentiation of Obstructive from Other Types of Jaundice. J. W. McNee.—p. 716.
*Ethereal Extract of Strawberries for Treatment of Sprue. A. Castellani and K. C. Browning.—p. 718.
*Hydronephrosis Due to Aberrant Renal Artery. E. C. Bevers.—p. 718.
Congenital Absence of Deltoid Muscle. E. J. Tyrrell.—p. 719.
Case of Head Injury. L. G. Jacob.—p. 719.
Pain in Thigh: Cerebral and Pulmonary Hemorrhage: Death. C. J. H. Aitken.—p. 719.
*Simple Test for Sugar. J. Livingston.—p. 719.

Value of Vaccines in Whooping Cough.—The clinical histories of 1,000 cases of whooping cough are analyzed by Paterson and Smellie, especially with reference to the results of vaccine treatment. Sixty-four patients were treated with vaccine. The dosage employed was as follows: initial injection: Bordet's bacillus, 500 million; influenza bacillus (Pfeiffer), 125 million; pneumococci, 25 million. Second injection: Bordet's bacillus, 1,000 million; influenza bacillus, 250 million; pneumococci, 50 million. Third and subsequent injections: Bordet's bacillus, 2,000 million; influenza bacillus, 500 million; pneumococci, 100 million. In fifty-eight cases treated with weekly injections the average duration was seven weeks. Those treated within the first week of the onset showed an average duration of 5.7 weeks. In six cases treated with biweekly injections the average duration was 6.6 weeks. The average duration of the disease in forty-two control cases that were not treated with vaccine was 6.4 weeks. In the vaccine treated cases the average duration of the whoop was 4.8 weeks; in the nonvaccinated cases 4.4 weeks. Even in the vaccinated cases treated in the first or second week, and occasionally before the whoop developed, the shortening of the duration of the disease would appear to be negligible. The authors are of the opinion that the following points in treatment aid in the shortening of the disease and the prevention of complications: Fresh air seemed all important. Those children allowed to run about outside with the usual precautions against exposure did much better than those confined to the house. Even those with a moderate degree of bronchitis benefited greatly with this treatment. To prevent wasting the sequel of anorexia and vomiting the feeds were given in small amounts and at frequent intervals, and when possible immediately following on a paroxysm of coughing and vomiting. Cod liver oil and malt were most useful remedies. Children on this treatment seemed to put on weight, and during the stage of recovery from the disease a preparation of iron was added to the cod liver oil, with great benefit. In cases with bronchitis the following mixture was given with great benefit to a child aged 1 year, and in suitable doses to older children, every four hours: tincture of belladonna, 3 minims; potassium bromid, 3 grains; glycerin, 10 minims; water, add to 1 ounce.

Aneurysm of Subclavian Ligated.—Noon's case was one of arteriovenous aneurysm between the second part of the left subclavian artery and the left subclavian vein. The condition which demanded relief was the extreme swelling of the left upper extremity, which from the size and pain which it caused completely crippled the patient. A severe varicose ulceration of the forearm, associated with the varicose condition of the veins of the arm and forearm, made the possibility of septic thrombosis a very real danger. When the first part of the subclavian artery had been exposed it was found that pressure on the artery at once stopped completely the pulsation in the aneurysm. From the condition of the parts it seemed very inadvisable to attempt a dissection to separate the artery from the vein, and to attempt to expose the abnormal communication between them. It was therefore decided to be content with ligation of the first part of the left subclavian artery. The completion of the operation was followed by recovery.

Van den Bergh Test in Differentiating Types of Jaundice. —The clinical application of Van den Bergh's test in the differentiation of various types of jaundice is dealt with by McNee. The value of this test in the differentiation of obstructive from what may be termed functional and hemolytic jaundice is illustrated by reports of cases. Van den Bergh applied the so-called "diazo reaction," first described by Ehrlich to detect the presence of bilirubin in blood serum. Normal serum contains bilirubin in a dilution of from 1 : 400,000 to 1 : 250,000. Such a dilution in human serum is readily detected by the diazo test. No other substance likely to be present will give the reaction. To 1 c.c. of blood serum, in a small test tube, 0.25 c.c. of freshly prepared diazo reagent is added. The color reaction obtained in from ten to thirty seconds is a bluish violet, of intensity depending on the amount of bilirubin present. A delayed reaction begins only after from one to fifteen minutes, or even longer, and consists in the development of a reddish coloration, which gradually deepens and becomes more violet. (It will be seen later that this reaction is not made use of further, being replaced by the so-called indirect reaction or test—vide infra.) If the reaction is immediate or direct an obstructive jaundice is indicated. Where no direct reaction has been given, but a perfect indirect reaction after alcohol precipitation, then the jaundice can be inferred to be either hemolytic in origin or dependent on some functional derangement of the liver cells without obstruction.

Extract of Strawberries in Sprue Treatment.—The favorable influence of a strawberry diet on sprue has been known for some time. As it is difficult and expensive to get strawberries except in the short season, and, moreover, strawberries forcibly grown out of season do not seem to have the same beneficial effect, Castellani and Browning sought a method by which the active principle or principles could be extracted and stored. Fresh strawberries are crushed with about 5 per cent. of their weight of absolute alcohol and filtered in a powerful filter press. The juice is then extracted for days in a continuous ether extraction apparatus. The ethereal extract is immediately concentrated in a vacuum over phosphorus pentoxid, a small quantity of either starch or lactose being added. The residue is dried as completely as possible in a vacuum over phosphorus pentoxid, as this appears to ensure greater stability. The extract (mixed with a little starch) is of a dark red color, has a granular scaly appearance, is somewhat soft, and thus a very powerful fragrant smell of fresh strawberries. A minute quantity of it has been kept in an amber tube for ten months, and apparently has not lost any of its characteristics, being of the same color, and its fragrant smell being just as strong. In two cases of typical sprue in conjunction with the usual milk diet and alkaline treatment, it was given in 5 grain doses, three or four times a day, and seemed to have a beneficial effect, apparently hastening the improvement in the general condition.

Abnormal Renal Artery Causes Hydronephrosis.—Some doubt has recently been expressed as to how far abnormal renal vessels are responsible for the hydronephrosis with which they are associated. In the case reported by Bevers the hydronephrosis appeared to be directly due to the aberrant vessel, which was passing directly outward and behind the ureter to the extreme lower pole of the kidney, and the symptoms disappeared after division of this vessel.

Heat Test for Sugar in Urine.—Livingston states that a drop of urine containing sugar evaporated on a microscope slide over the flame of a spirit lamp leaves a "tacky" glistening film of syrup. Further heating turns this film a rich golden color. Full heating converts the deposit into burnt sugar or caramel. Urine containing 14 grains to the ounce, according to fermentation test, gave the reaction after dilution with five times its volume of water.

Lancet, London

April 29, 1922, **1**, No. 5148

*Review of Work Done by Glasgow School on Etiology of Rickets. L. Findlay.—p. 825.
Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 831.
*Sleep of Elementary School Children. M. Gross.—p. 836.
*Modification of Cow's Milk in Infant Feeding. E. Pritchard.—p. 838.
*Treatment of Malignant Disease by a Diet Free from fat Soluble Vitamin. A. S. Wyard.—p. 840.
*Unusual Causes of Difficulty of Micturition. W. K. Irwin.—p. 841.
*Use of Phenol Red as an Indicator. H. C. Brown.—p. 842.
*Influenza, Pregnancy and Emphysema. J. D. T. Reckitt.—p. 843.
Case of Post-Diphtheritic Facial Paralysis of Late Onset. E. Thorp.—p. 843.
Wandering Silk Suture Removed from Urethra as Sequel to Cesarean Section. G. Luker.—p. 843.

Etiology of Rickets.—All that experiments and clinical studies have shown, Findlay says, is that in some way confinement and defective hygiene are the most potent causes in the production of rickets, and that the disease is intimately associated with housing conditions. Diet plays a subsidiary part, if any part at all. Findlay emphasizes very strongly that he deprecates the view that rickets may have many causes. The multiplicity of its symptomatology does not by any means support a varied cause. The bone changes, though the most definite, are not the sole manifestations of the disease; the whole economy may suffer in unison. Findlay admits that in assuming defective hygiene to be the cause it is difficult to visualize the modus operandi of the exciting factor. It is quite different from the case of the toxin of a bacterium. Confinement and lack of exercise seemed more definite and more limited factors and might exert their harmful influence by inducing deficient oxygenation. It was the idea that confinement and defective exercise caused the disease that suggested the line of treatment, viz., massage and electricity, which has given Findlay the best clinical results. Is the disease as experimentally induced in animals the same as that which occurs spontaneously in the child? is the question asked by Findlay in concluding this review. Because such and such happens in a growing dog or rat it does not necessarily mean that the same will happen in a growing child. Whatever the condition may be which experimentalists are bringing about by administration of a fat poor and a calcium poor diet, that condition is not identical with human rickets.

Sleep of School Children.—Gross has endeavored to determine, first, the amount of sleep obtained by elementary school children; and, secondly, any relation existing between the amount of sleep and their condition of health. A separate record was made for winter and summer. By summer is meant the period of the year during which the Summer Time Act is in force; the rest of the year is called winter. This study seems to show that only a very small percentage of elementary school children get enough sleep. The percentage of children showing fatigue signs, and also the percentage to be waked in the morning, increases with the age of the children. The question of the effect of the Summer Time Act on children's health appears to involve the tendency to decrease the already insufficient amount they obtain. The ideal procedure in Gross' opinion is to improve parental control and knowledge and continue with summer time. Until this improved control and knowledge is obtained summer time is detrimental to the vast majority of children. Parents should be encouraged to obtain longer sleep for their children the whole year round.

Modification of Cow's Milk for Infant Feeding.—In an attempt to discover a practical means of supplementing cow's milk dilutions with a satisfactory hotchpotch of such accessory factors as may be supposed to be attenuated below the safety line in the preparation of cow's milk modifications, Pritchard has finally come to the conclusion that the addition of a few ounces of broth, made from bones and mixed vegetables, can supply the deficiencies, although this devise lacks accuracy and precision. Such a broth, besides containing gelatin, which is a good acid fixer, animal extractives from the attached meat and bone marrow, also contains a considerable number of vegetable extractives, possibly vitamins, lecithin bodies, organic salts and cholesterol. The formula for broth is: Take 1 pound of bones and chop them up well; add one tablespoonful of vinegar and 1½ pints water; simmer for about eight hours, and then add a handful of mixed vegetables such as cabbage, brussel sprouts, spinach, roots, lentils, etc., with a few sprigs of Irish moss and allow to simmer for one hour longer. Then strain and allow to set into a jelly. The Irish moss is added to provide a source of iodin. The vinegar dissolves out the calcium salts and supplies them to the infant in a highly available condition. The following formula may be employed for modifying cow's milk to breast standard. Milk (of average quality), 10 ounces; cream (33 per cent.), 1 ounce; sugar (milk sugar at first, but later milk sugar, maltose and cane sugar mixed), 1 ounce; broth, 4 ounces; water to make, 1 pint.

Fat Soluble Vitamin Free Diet in Cancer.—Wyard reports on an investigation made into the effect of a diet free from the fat soluble vitamin A on patients suffering from cancerous growths. The fact that such a diet causes grave nutritional defect, and ultimately death, in young rats fed with it, while older animals are affected to a very much less degree or not at all, suggested the possibility that malignant cells in the human body might suffer a similar fate and that a malignant mass, though it would certainly not be destroyed, might yet be so hindered in its growth as materially to prolong life, and the cachexis produced by it diminished or prevented. In no case was any effect found on the growth and evolution of the tumor, which invariably progressed along the usual lines. In no case was any unfavorable change in the general condition of the patient attributable to the diet; and, in many, improvement was definite, at least at first. It is doubtful whether or not the amount of pain suffered by the patient is diminished by the diet. Changes in the blood reported on rats and mice are not due to lack of this vitamin, but to one or both of the others. No bony changes (other than some secondary deposits) were discovered in any of these patients. No ill effects of any kind were observed, and Wyard says it can confidently be stated that although the use of a diet free from the fat soluble vitamin A exerts no apparent specific effect on an adult woman, its use is absolutely safe and fraught with no danger whatever to the patient.

Difficult Micturition Due to Narrowing of Urethra at Vesical Neck.—Three unusual causes of difficulty of micturition due to narrowing of the canal at the vesical neck, which give rise to many of the symptoms of enlarged prostate without any enlargement are reported by Irwin. They were: Small fibrous prostate; congenital valves of the prostatic urethra and spasm of the internal sphincter.

Use of Phenol Red as Indicator.—Brown adds one part of condensed milk to four parts of tap water. To 5 c.c. of this a few drops of phenol red solution are added, and tenth-normal sodium hydroxid solution is added to the diluted milk in bulk and sufficient saturated aqueous solution of phenol red to make the milk a vivid brick-red; provided that care is taken to stop the addition of alkali when the brick-red color is reached corresponding to a p_H of approximately 7.5 the subsequent production of acid or alkali by an organism in this medium will be demonstrated clearly. The medium is then tubed and steamed for 20 minutes on three successive days. Such a medium is said to show changes in reaction in a much more vivid manner than does litmus milk, and the production of an initial acidity, which is followed by alkalinity, as in the case of *B. paratyphosus* B, is well demonstrated.

Emphysema in Influenza.—The emphysema in Reckitt's case involved the eyelids, face, forehead, chest, arms, back of hands, abdomen and back, the peculiar crackling being marked and evident on touch.

May 6, 1922, **1**, No. 5149

Recent Advances in Orthopedic Surgery. E. Evans.—p. 879.
Interpretation of Symptoms in Disease of Central Nervous System. A. Feiling.—p. 881.
*Cardiac Pain. J. Hay.—p. 885.
Some Cutaneous Effects of Dental Sepsis. H. C. Semon.—p. 889.
Velocity of Transmission of Pulse Wave and Elasticity of Arteries. J. C. Bramwell and A. V. Hill.—p. 891.

Cardiac Pain.—Keeping clearly in mind that cardiac pain is an evidence of cardiac exhaustion, whatever the pathologic lesion, will help one in arriving at a correct valuation of the expectation of life, Hay states. Other indications of myocardial fatigue should be sought for; such an indication is breathlessness. The heart fails to supply the central nervous system with an adequate supply of blood, and the result is dyspnea. Sometimes the dyspnea is dominant, sometimes pain—sometimes both are in evidence. Cardiac pain, Hay says, is comparable to other referred pains, and is evidence of stress and an inability on the part of the heart to meet the demands made on it. Of a similar nature is the sense of constriction, which is occasionally the sole manifestation of distress. One other symptom of cardiac distress occasionally exists as the only evidence, or, at any rate, as the dominant symptom, indicating cardiac exhaustion, and that is a feeling of complete lassitude—more particularly noticed in the legs, which feel as if made of lead. It becomes a great effort to walk and move about. This feeling may be the first indication of an attack of auricular fibrillation. If pain is more and more easily induced in spite of rest and care, and if the attacks become more frequent and severe, it is clear that the myocardium is steadily growing less efficient and that death may occur at any time. In the toxic, neurotic, and hysterical cases a favorable prognosis may be given with confidence.

Dental Sepsis Causes Skin Lesions.—Five cases of cutaneous reactions to dental sepsis are reported by Semon. Treatment of the cause gave immediate relief. In every case there was an immense preponderance of *Streptococcus viridans* or *S. Haemolyticus.* The cases were pruritus, erythema multiforme, chronic urticaria with subcutaneous nodules, chronic urticaria and furunculosis.

Archives de Médecine des Enfants, Paris

March, 1922, **25**, No. 3

*Saccharosuria in Cholera Infantum. P. Woringer.—p. 129.
*Tuberculosis of the Heart. B. Korybut-Daszkiewicz.—p. 150.
Mongolian Idiocy; Two Cases. M. de Vaugirard.—p. 158.
*Latent Pott's Disease. H. Barbier and Arbeit.—p. 163.
Osteochondritis Simulating Coxalgia. J. Comby.—p. 166.

Saccharosuria in Cholera Infantum.—Choleriform diarrhea in infants seems to be nearly always accompanied with abnormal permeability of the intestinal walls for saccharose, according to Woringer's experience. He gives the details of eight cases in infants from 2 to 9 months old, who were given albumin milk containing 5 per cent. saccharose. If the child vomited, the bib was weighed afterward. The permeability for saccharose disappears as recovery progresses, but the toxic phenomena may be well established before the intestinal walls show any signs of permeability. For this and for other reasons he declares that this permeability is not the cause of the toxic action.

Tuberculosis of the Heart in Children.—The few cases of this kind on record are summarized in turn, and a new case is described, with a small cavity at the right apex, cheesy degeneration of bronchial glands, and a tuberculous aneurysm at the apex of the heart of the 20 months boy. The rupture of the aneurysm was the immediate cause of death; the heart had never presented any grave symptoms before.

Latent Pott's Disease.—In Barbier and Arbeit's case the 19 months infant was apparently healthy when sudden asphyxia proved fatal. Necropsy revealed a large mediastinal abscess secondary to latent vertebral caries.

Bulletin de l'Académie de Médecine, Paris

April 18, 1922, **87**, No. 16

*Uterine Fibromas with High Blood Pressure. J. Heitz.—p. 422.
Icterohemorrhagic Spirochetosis. Ducamp et al.—p. 427.
Viscosity of Blood in Morphin Intoxication. P. Sollier.—p. 428.

Uterine Fibromas with High Blood Pressure.—Heitz comments on the frequency with which high blood pressure is found accompanying uterine fibromas. He was particularly impressed with the high blood pressure that had developed in 17 cases after hysterectomy; in 11 the operation had been done on account of hemorrhages; in 9 of these the pressure was still extremely high several years later. It is possible that a single cause may be responsible for both the fibroma and the high blood pressure, and that the bleeding from the fibroma is an important safety valve. He cites a couple of cases in which the pressure became very high a few weeks after the hysterectomy, and hemorrhages occurred in the retina or brain. Cerebral hemorrhage occurred in another case four years after the menopause had been induced by radiotherapy. Such cases warn to keep the woman under supervision after the artificial menopause by hysterectomy or radiotherapy. By small repeated venesection, severe kidney, brain or heart complications may be warded off for years.

Paris Médical

April 29, 1922, **12**, No. 17

Hermaphrodism and Its Varieties. A. Mouchet.—p. 345.
*Early Diagnosis of Uterine Cancer. A. Siredey.—p. 351.
*Extragenital Buboes. Massia and J. Lacassagne.—p. 356.

Early Diagnosis of Uterine Cancer.—Siredey remarks that the youth and the good general appearance often seem to render the idea of cancer preposterous, but he has had cases in women of 19 to 25. Bleeding is more irregular than with fibromas. The cancer is liable to bleed at the slightest jar, a drive or douche or exercise, even of the arms. The cervix may seem smooth but less elastic than normal, and it gapes. With cancer of the body of the uterus, almost the only appreciable sign is the increase in the size of the uterus; this is detected best in the standing subject. The speculum shows nothing wrong unless possibly the manipulations start a bloody discharge. The cervix does not share in the enlargement. Negative findings in an excised scrap must not be accepted with blind confidence.

Extragenital Buboes.—In a compilation of 38 cases of simple chancre on the arms, there were 6 with buboes. Palazy has compiled 40 cases of simple chancre on the head. Only 2 instances are known of a suppurating bubo with a chancre on the head. In the therapeutic inoculations of simple chancre, as practiced about 1850 by Auzias-Turenne, Sperino and Boeck, sometimes from 350 to 700 inoculations were made in a few months. No instance of a complicating bubo seems to have been observed, and this suggests that diagnostic autoinoculation need not be rejected for fear of inducing a bubo. It is a mystery why buboes are so rare in women; no extragenital instance is known.

Schweizerische medizinische Wochenschrift, Basel

April 20, 1922, **52**, No. 16

*Cosmetic Operations on the Nose. E. Gallusser.—p. 381.
Plastic Operations on the Face. K. Schlaepfer.—p. 383.
Foreign Body in Infant's Bronchus. H. Stössel.—p. 386.
*Fracture of Radius. L. Conti.—p. 389.

Cosmetic Operations on the Nose.—Gallusser's illustrations show the excellent outcome in a few of the cases in which he has corrected saddle-back nose by introducing intranasally a prop of cartilage taken from the ribs, or he has reduced the size of a disfiguring nose by intranasal resecting of septum and cartilage. This is a more complicated and difficult procedure, but the nose always displays a remarkable tendency to smooth healing.

Fracture of the Radius.—Conti states that in 542 insurance cases of fracture of the lower end of the radius, the left arm was involved alone in 54 per cent.; the right in 40 per cent., and both arms in the others. A subperiosteal fracture was never encountered in persons over 17, but separation of the epiphysis occurred up to the age of 19. There were 24 cases of chauffeur's fracture, and in the whole 542 there were 42 per cent. in which the fracture was connected with the occupation. In 9 per cent. of the total the fracture occurred during gymnasium work. The fractures in the lower third healed on an average in six weeks; between the ages of 10 and 20, in four and a half weeks; in the fifties, in seven weeks, and after 60 in from eight and a half to eighteen weeks. All were cured but 5.5 per cent. of the men and 7 per cent. of the women. These were allowed compensation ranging from 10 to 30 per cent.

April 27, 1922, **52**, No. 17

Differential Diagnosis of Dementia Praecox. E. Fankhauser.—p. 401.
*Means to Accelerate Coagulation of Blood. R. Feissly.—p. 404.
Multiple Thrombosis After Influenza. W. Odermatt.—p. 408.
Colorimeter Test for Cystin. E. Herzfeld.—p. 411.
Necropsy in Case of Gynecomastia. T. Tobler.—p. 412.

Means to Hasten Coagulation of the Blood.—Feissly discusses the action of various thromboplastic preparations and other means to hasten coagulation. He has confirmed recent statements in regard to the regulating action on coagulation of mild roentgen-ray exposures of the spleen, and obtained practically the same effect by raying the jugular veins of the horse, and raying citrated blood. The plasma of citrated blood, deprived of its corpuscles, is not modified by the roentgen rays. He theorizes that these rays destroy the blood platelets, and thus realize an autocytozyme treatment. In treatment of hemophilia, he has finally settled on transfusion of whole citrated blood as the best means at our disposal to tide hemophiliacs through a period of dangerous hemorrhages. The amount required is small: 100 c.c. of blood, citrated at 2.5 per thousand, reduced the coagulating time to normal in fifteen minutes in his cases. This effect had worn off by the third day, but it was easy to repeat the transfusion. Joltrain noted in one case a kind of shock effect at the sixth injection and this shortened still more the coagulation time.

May 4, 1922, **52**, No. 18

*Sphygmobolography. H. Sahli.—p. 425.
*The Capillary Circulation at High Altitudes. P. Liebesny.—p. 431.
The Dulness with Pericarditis with Effusion. Attinger.—p. 435.
*Convulsions in Whooping Cough. W. Hoffmann.—p. 438.

Sphygmobolography.—Sahli has further elaborated his method of dynamic sphygmography, and combined it with work bolography and arteriometry. The record thus obtained on a single strip of paper presents, he asserts, everything that we need to know in estimation and comparison of circulatory disorders. Research on the dynamics of the blood, he adds, is the most backward of all fields of internal medicine, and he deplores the lack of consideration for his many years of efforts to correct the errors and perfect the technic of this physical examination of the circulatory system.

The Capillary Circulation at High Altitudes.—Liebesny discusses the relations between the changes in the capillary circulation and the increase in corpuscles and hemoglobin in the blood in the mountains.

Convulsions in Whooping Cough.—Hoffmann has had nine cases of convulsions in the prevailing epidemic of whooping cough in children. Symptomatic treatment had to be supplemented with heart tonics, especially camphor. He gave a subcutaneous injection of 1 c.c. of 20 per cent. camphorated oil morning and evening. This acts on both the heart and the spasms.

Archivio Italiano di Scienze Med. Coloniali, Tripoli

January-February, 1922, **3**, No. 1-2

*Paralysis Consecutive to Anthrax. R. Onorato.—p. 1.
Symblepharon from Home Bandaging for Catarrhal Conjunctivitis. E. Bartolotta.—p. 12.
Myiasis in Tripolitania. R. Onorato.—p. 14.

Postanthrax Paralysis.—Onorato here reports a second case of paralysis of the legs developing ten days after apparent recovery from a large malignant pustule on the hand which had subsided under intravenous serotherapy. No improvement was realized from electric treatment, and the bladder and anus became paralyzed likewise. The serotherapy was cautiously resumed by the subcutaneous route, and the sphincter functioning returned by the next day. By the third day the man could use his legs although they felt weak for six weeks longer.

Policlinico, Rome

April 17, 1922, **29**, No. 16

Experiences with Serotherapy. G. Berghinz.—p. 505.
*Bacteriologic Enrichment of Urine. G. Fragale.—p. 511.
Surgery of Large Intestine. S. Grasso.—p. 516.
Immunity to Influenza. D. Casiere.—p. 519.
Prophylaxis of Vulvovaginitis in Children. G. Massimi.—p. 520.
Hygienic Shaving Brush. A. Campani.—p. 520.

Enrichment of the Urine.—Fragale uses white of egg or blood serum, adding them in large amounts to the urine, and then precipitates the albumin by heating. This carries the tubercle bacilli down with it, and the supernatant fluid is decanted. The sediment is then dissolved with sodium hydroxid and the bacilli are then centrifuged out. About 2 or 3 c.c. of albumin to 100 c.c. of urine is a convenient proportion. The sediment is dissolved with 0.5 per cent. alcoholic solution of sodium hydroxid, five or six times the volume. The method can be applied without heating by precipitating the albumin with potassium ferrocyanid or Esbach's reagent. Another enrichment procedure is to apply to the urine Ficker's ferric sulphate test for typhoid bacilli in water.

April 15, 1922, **29**, Surgical Section No. 4

*Chronic Inversion of Uterus. A. Angeli.—p. 189.
*Effect of Thymectomy. G. Baggio.—p. 197.
Exudation Around Appendix and Cecum from Surgical Standpoint. O. Cignozzi.—p. 219.
Endothelial Tumors of Maxillary Sinus. R. Mosti.—p. 234.

Chronic Inversion of Uterus.—Angeli was unable to apply any of the usual technics in the extreme case of chronic inversion described. Through a transverse incision in the inverted fundus he detached the peritoneum from the uterus, and pushed in gauze to keep the bowel out of the way. Then he slit the uterus its entire length on both sides, thus forming two flaps. The uterine arteries and the pedicles of the adnexa were ligated on each side and the peritoneal funnel detached. He then sutured the peritoneum, pulling out the gauze by its long string. The pelvis was thus roofed over, and the uterus was then easily removed. There was very little hemorrhage, and this two-flap method gave ample access to the parts.

Effects of Thymectomy.—Baggio tabulates the effect of thymectomy in rabbits on the pancreas, genitals, thyroid, suprarenals, pituitary, general condition and weight. The findings, as in similar research by others, are conflicting; the only constant effect seemed to be an increase in size of the suprarenals, but it was slight.

Riforma Medica, Naples,

March 27, 1922, **38**, No. 13

*Fracture of Neck of Femur. D. Taddei.—p. 289.
Rat Bite Fever. G. M. Fasiani.—p. 293.
Tuberculosis and the Endocrine Glands. D. Zibordi.—p. 295.
*Bladder Calculi in Children. O. Nuzzi.—p. 298.
Monilia Bronchitis. I. Jacono.—p. 303.

Fracture of Neck of Femur.—The subject of this bedside lecture was a woman of 72, the outward rotation confirming the fracture of the neck, although the trauma had been insignificant. Early massage and getting the patient up soon form the preferable treatment for these fractures in the elderly. Four or five days is as long as they should be allowed to stay in bed. They should then be got up in an easy chair, and in ten or twelve days, at latest, they should be encouraged to take a few steps with the aid of a crutch. This treatment helps to avoid the complications almost inevitable otherwise in the elderly. In younger subjects, treatment need not be so nihilistic. Good results may be obtained with an extensive plaster cast, but Taddei prefers Delbet's fixation with a screw and bone peg, driven axially into the neck, without opening up the joint. This is not so simple as it seems, for the screw must fit into the exact center of the femur head. This requires calculations and a special instrument.

Calculi in the Bladder in Children.—Nuzzi has operated in 15 cases of this kind in the last three years. Immobilization for vertebral or hip joint disease promotes the formation of calculi. One boy of 9 had to have the hip cast removed to allow suprapubic removal of a calculus. Most of the children were 6 or 7 years old, and the lithiasis was suggested by incontinence day and night, frequent or interrupted micturition, hematuria, pain in the end of the penis, frequent erections, straining, and involuntary manipulation of the penis. These symptoms are rarely associated. The children's straining in two cases had induced prolapse of the rectum, but this subsided after removal of the bladder stone. If the child can urinate better reclining than erect, and not at all when lying prone, a calculus blocking the outlet is probable. An illustration showing eleven calculi fastened on a card is compared with the roentgenogram of the same card. He urges the suprapubic incision rather than to take the chances of injuring the narrow passages by lithotrity in a child. Healing was perfect in 6 of the 13 cases in which he sutured the bladder at once. In 3 cases there was a briefly transient small fistula.

Rivista di Clinica Pediatrica, Florence

February, 1922, **20**, No. 2

*Atresia of the Intestines. L. Sironi.—p. 65.
Present Status of Schick Reaction and Immunization Against Diphtheria. A. F. Canelli.—p. 80.

Congenital Intestinal Atresia.—Sironi summarizes what is known to date in regard to stenosis and atresia of the bowel in the new-born. He adds to the hundred cases on record one in which the vomiting of bile by the 5 days infant was explained by valvular stenosis and atresia at the junction of the duodenum and jejunum and again lower down in the jejunum. The child died the day after the entero-anastomosis. Only two were saved of all the children given operative treatment.

Archivos Españoles de Tisiología, Barcelona

January, 1922, **2**, No. 4

Heliotherapy in Tuberculosis. Rollier (Leysin).—p. 1.
*Heliotherapy at Leysin. E. Balasch.—p. 33.
The Scientific Basis of Heliotherapy. A. Rosselet.—p. 35.
Roentgen Ray Therapy of Surgical Tuberculosis. Amstad.—p. 39.
*Heliotherapy in Nontuberculous Affections. Amstad.—p. 54.
Roentgen Control of Heliotherapy. Schmid.—p. 65.
Heliotherapy and the Skin. Leuba.—p. 84.

Heliotherapy at Leysin.—Balasch describes his impressions of Rollier's thirty-four hospitals at Leysin, with their 1,500 beds, saying that nothing can take the place of a personal visit for those specially interested in heliotherapy. All the articles in this number are from the Leysin school.

Heliotherapy in Nontuberculous Affections.—Amstad enumerates as indications for heliotherapy the convalescence from acute and febrile diseases, and general debility in young and old, but the persisting cause must be removed for it to be effectual, especially chronic dyspepsia. Benefit has been realized in rachitis, osteomalacia, rheumatism, amyloidosis, wounds (the infected in particular), and after operative treatment of osteomyelitis. He regrets that physicians so seldom utilize heliotherapy in their practice with these different affections. "The predominant importance of general treatment and the due appreciation of the *vis medicatrix naturae* have not yet won their proper place in medical practice."

Archivos Latino-Amer. de Pediatría, Buenos Aires

March, 1922, **16**, No. 3

*Tetanic Meningitis. Mamerto Acuña and F. Bazan.—p. 161.
Meningeal Mask of Pneumonia. Escardó y Anaya.—p. 168.
Amebic Liver Abscess in Infant. A. Carrau.—p. 172.
Habitual Vomiting in Boy. S. Satanowsky and M. T. Cafferata.—p. 176.
*Rupture of Tentorium. L. Velasco Blanco.—p. 179.
*Orthopedic Treatment of Talipes Varus. Rauenbusch.—p. 182.
*Anemia in Children. L. K. Wimmer.—p. 187.
Treatment of Gonococcus Arthritis. C. Pillado Matheu.—p. 191.
Tardy Recurring Tetanus. Mario Valabrega.—p. 198.

Meningitis of Tetanus Type.—The clinical picture from the tuberculous meningitis in the girl of 10 closely resembled tetanus. The child had been sick only two weeks, and the diagnosis at first wavered between tuberculous meningitis, strychnin poisoning and tetanus, although the loss of consciousness seemed to exclude tetanus. In the three cases of "tetanic meningitis" compiled from the literature, all in adults, syphilis and alcoholism had evidently cooperated.

Rupture of Tentorium.—Velasco confirms the diagnostic importance of jaundice in the new-born as a sign of hemorrhage. Lumbar puncture of new-born infants in Zarate's service has revealed the unsuspected frequency of intracranial hemorrhage in children delivered with forceps or in asphyxia.

Congenital Talipes Varus.—Rauenbusch deplores that physiologic modeling of the foot by orthopedic measures is so seldom applied. Surgical measures should be reserved for the exceptional cases. He has had orthopedic measures succeed even with adults of 30 and over.

Anemia in Children.—Wimmer insists that the pediatrist has to be a sociologist first and foremost. "The child requires childhood, that is, playthings and playmates as well as hygiene and a suitable diet." The general practitioner is too apt to forget this when examining a child with anemia.

Crónica Médica, Lima, Peru

January, 1922, **39**, No. 703

*Hydatid Cyst in Lung. A. Corvetto.—p. 3.
*Eye Affections. E. Campodónico and E. Ciotola.—p. 9.
Integral Autoserotherapy. E. Escomel.—p. 13.

Hydatid Cyst in Lung.—The woman of 40 seemed to have pulmonary tuberculosis as expectoration was profuse, with fever, emaciation and hemoptysis, until she finally coughed up pieces of hydatid cyst membrane, and recovered completely. In 12 other lung cases known in Lima, 2 were cured by operative measures, 7 coughed up the cyst membrane and recovered, and 3 died. There are no symptoms peculiar to this lesion of the lung, but radioscopy is usually decisive. Lung symptoms should not be ascribed to tuberculosis as a matter of course until after hydatid cyst has been excluded.

Disease of the Eyes.—Conjunctivitis formed 30 per cent. of the ocular affections studied, and 45 per cent. in this group were the work of the gonococcus; of the Koch-Weeks bacillus in 37 per cent.; the Morax-Axenfeld in 15 per cent., and the pneumococcus in 1.2 per cent. Infants under 6 months of age formed 25 per cent. of the whole. Trachoma was found in 14 cases, sarcoma of the orbit in 2, and an epithelioma, a fibroma and a granuloma in one case each.

Revista Española de Medicina y Cirugía, Barcelona

March, 1922, **5**, No. 45

*Feebleminded and Delinquent Children. J. Alzina y Melis.—p. 121.
Mercurial Treatment of Syphilis. J. Callico.—p. 126.
Scientific Dietetics. A. Arteaga Pereira.—p. 134. Cont'n.

Feebleminded and Delinquent Children.—The actual title of Alzina's article is "The Curious Aspects of the Care of Feebleminded and Delinquent Children in Belgium." He was impressed by the fact that training for a trade does not form part of the course at five of the Belgian institutions for the feebleminded he visited. Only at Gheel is work regarded from the dual educational and professional standpoint. Gheel is now organizing a special training school for the abnormal. He adds that those who have merely read descriptions of Gheel can have only a faint conception of the marvellous efficiency of this system of care of the feebleminded and insane. They live the common life in the farm homes, eating and working with the farmer's family. A school colony is to be opened this year at Waterloo, with work as the basis of the training. At Moll there is an observation station for abnormal boys. They are submitted for a month or two to what Rouvroy, the director, calls pedagogic observation, not dry mental tests. The juvenile court system in Belgium dates from 1912, and a medicopsychologic examination always precedes the judge's provision for the delinquent minor.

Archiv für Gynäkologie, Berlin

Feb. 16, 1922, **115**, No. 3

*Results of Treatment of Genital Cancer. A. Giesecke.—p. 435.
*Bilateral Removal of Adnexa. O. Beuttner.—p. 461.
*Prolapse of Female Genitalia. E. E. Pribram.—p. 479.
*Fat in Prevention of Adhesions. E. Löhnberg.—p. 497.
*Instrumental Compression of Aorta. L. Nürnberger.—p. 562.
Malignant Chorio-Epithelioma. T. Nagy.—p. 585.
Epinephrin Action on Surviving Uterus. M. Turolt.—p. 600.
Pathologic Anatomy of Gonococcus Ophthalmia. W. Lahm.—p. 611.
Fetal Malformation of Pelvis. G. B. Gruber.—p. 615.
*The Weissbach Stone Child. E. Vogt.—p. 624.

Ultimate Results of Treatment of Genital Cancer.—Giesecke analyzes the 798 carcinoma cases in Stoeckel's service in a recent ten years. His figures show 26.6 per cent. cured for five years to date of the 350 cervix cancers, and 47.62 per cent. of the twenty-one corpus cancers, but only one of the twenty-three vagina carcinomas.

Bilateral Removal of the Adnexa.—Beuttner advocates transverse wedge excision of the fundus of the uterus preliminary to removal of the diseased adnexa on both sides. His twelve illustrations show the technic and the advantages of this.

Prolapse of Female Genital Organs.—Pribram tabulates the treatment and outcome in a recent series of 786 cases of prolapse of the female genital organs. He adds that the treatment should not end with the operation, but the general health and the flabby tissues should be strengthened. Prophylaxis is the best treatment, beginning in youth, to keep the muscles toned up.

Fluid Fat to Prevent Adhesions.—Löhnberg reports encouraging results in long series of experiments on rabbits. Lesions were induced in the peritoneum sure to entail adhesions if left alone, but no adhesions developed when an ether extract of rabbit fat was injected in prophylaxis. He thinks there can be no doubt that human fat can be utilized in the same way in clinical cases. His experimental research has demonstrated that homogenous fat is harmless, used in this way, and that human fat was borne well by the animals. Conditions in the human peritoneum seem to be even more favorable than in the rabbit. Ether extraction seems to yield the most harmless preparation of fat for the purpose, although he has had no clinical experience with it.

Instrumental Compression of the Aorta.—Nürnberger's experiments with aorta clamps has proved that animals bear with remarkably little disturbance the upset in the circulation caused by isolated compression of the abdominal aorta.

A Stone Child.—Vogt gives illustrations of a petrified fetus from a tubal pregnancy at term, the lithokelyphos carried for thirty-five years.

Archiv für klinische Chirurgie, Berlin

March 8, 1922, **119**, No. 2

*Indentation of Stomach. H. Smidt.—p. 225.
*Resection of Stomach. H. Lorenz and H. Schur.—p. 239.
The Catgut Question. J. Fürle.—p. 277.
Retrograde Incarceration. B. Breitner.—p. 302.
*Gas Cysts on the Intestines. R. Wanach.—p. 309.
*Cranioplastic Operations. M. Saito.—p. 321.
*Softening of Epiphyses. E. Liek.—p. 329.
Surgical Complications of Typhus. R. Herzenberg.—p. 347.
Bilateral Fracture of Neck of Femur. A. Hübner.—p. 390.
Means to Locate Foreign Bodies. A. Berdjajeff.—p. 398.
Acute Osteomyelitis of the Patella. Rosenbach.—p. 403.
Paraurethral Inflammatory Tumor. Schultze.—p. 406.

Indentation of Left Outline of Stomach.—Smidt compared the roentgen-ray findings with the operative findings in 262 cases of gastric or duodenal ulcer, gallstones or gastroptosis. Indentation of the greater curvature was noted in about 20 per cent. of a total of 351 cases during the period. It was found indiscriminately with all kinds of pathologic conditions, and even in 4 of 37 cases with normal stomachs. It varied from time to time, and seems to be an expression of a generally increased tonus.

Resection of the Antrum in Treatment of Peptic Ulcer.—Lorenz and Schur present evidence that the antrum controls secretion in the stomach. They have recently reexamined 70 of the 208 persons treated by resection of the antrum for gastric ulcer. The details of 55 of these cases are given. None of the 43 whose antrum had been entirely removed have had any return of ulcer symptoms, but 7 of the 12 who had part of the antrum left still have more or less ulcer symptoms. However, Mandl, Frisch and Denk have published instances of peptic ulcer developing after antrectomy. There is evidently a special predisposition to ulcer in such cases, and for this as well as for other reasons, resection of the antrum should be preferred to gastro-enterostomy in all cases, they remark in conclusion.

Gas Cysts in the Intestines.—A woman of 48 was cured of gastric disturbance by a gastro-enterostomy, leaving the hard ulcer encircling the pylorus. At the operation the peritoneal cavity and bowel were found studded with gas cysts. Wanach discusses pneumatosis cystoides in general, emphasizing its usual spontaneous subsidence. His case brings to seventy-six the number on record. Only three are known with peritonitis from perforation. The course ranged from four weeks to ten years in the known cases, but the pneumatosis does not induce symptoms as a rule. There is nothing like it, he reiterates, in the rest of pathology, and its etiology is still a mystery.

Plastic Operation on Skull.—Saito commends for general adoption the technic he has successfully applied in two cases. He closed the gap in the skull with a flap from the scapula. This curves to fit well and has periosteum on both sides, while it is easier to obtain than a flap from the tibia, and the resection leaves no functional disturbance.

Softening of the Epiphyses.—Liek calls attention to the close analogy between the Legg-Calvé-Perthes, Schlatter and Köhler affections, and the fact they affect only boys, as a rule, during periods of active growth. The bilateral, multiple occurrence points to a constitutional factor, and he ascribes it to some functional derangement of the epiphyses which, in turn, he traces to the internal secretions. The epiphysis is not sound, to start with. When slight changes exist, there are merely "growing pains." When pronounced, there is softening of the epiphysis. Mechanical influences are an important factor, but the morbid changes in the epiphysis had preceded them. The fact that only boys seem to be affected suggests some secondary sexual characteristic element. Operative measures are futile and do only harm. As the growth progresses, the pathologic condition gradually rights itself.

Archiv für Verdauungs-Krankheiten, etc., Berlin

March, 1922, **29**, No. 5-6

Action of .Various Salts and Other Substances on Liver After Their Introduction into Duodenum. M. Einhorn (New York).—p. 243.
Present Status of Gastric Ulcer. A. Schüle.—p. 268.
*Protein Therapy of Ulcer. Gottfried Holler.—p. 275. Conc'n.
*Duodenal Ulcer. G. Musa.—p. 302.
*Test Glycemia in Diabetes. R. Offenbacher and A. Hahn.—p. 318.
*Gastric Secretory Deficiency. J. Alsberg.—p. 328.
*Cardiovascular plus Digestive Disturbances. A. Dienstfertig.—p. 346

Protein Therapy of Gastric and Duodenal Ulcer.—The previous instalment of Holler's article was reviewed in these columns, May 13, 1922, p. 1498. He now has a record of 120 cases treated in this way, and 11 typical cases are summarized here. He is convinced that the tonus in the autonomic nervous system is dependent on the condition of the nervous and the metabolic processes at the moment. The nervous element imprints the chronic character on it.

Duodenal Ulcer.—Musa comments on the rarity of induration and malignant degeneration of duodenal ulcers; in other respects they resemble gastric ulcer so closely that a single cause seems to be responsible for both. In examining 155 adult cadavers in the last two years, evidences of duodenal ulcer were found in 5.4 per cent. There were active ulcers in 20 and healed ulcers in 32. The male cadavers outnumbered the female, 32 to 19. In one case a chronic ulcer had perforated although it had never induced appreciable symptoms at any time before. There were in addition duodenal ulcers in 3 child cadavers. In the total 52 duodenal ulcer cases, death had been due to perforation in 10 per cent. There were multiple ulcers in only 2 of the 52 cases and in 3 of the 73 gastric ulcer cases.

Functional Tests in Diabetes.—This communication from Strauss' service emphasizes that a single record of the sugar content of the blood gives no reliable information as to the normal or abnormal character of the carbohydrate metabolism. This can be estimated with precision from the behavior of the sugar content of the blood during the first three hours or more after ingestion, fasting, of 50 gm. of glucose in 300 c.c. of tea. With true diabetes, the glycemia does not rise to its peak until the second or third hour, and sugar always appeared in the urine. The details of nine cases of diabetes, free from glycosuria at the time, are tabulated. From 0.125 the glycemia ran up to 3.36 in the second hour in one case, and the reaction was evident for three hours. If the glycemia after the peak in the second hour returns promptly to normal, then the disturbances can be ascribed to neurasthenia or endocrine factors. If it lasts longer than this, then a true disturbance of the intermediate sugar metabolism seems certain.

Achlorhydria and Anacidity.—Alsberg states that a constitutional anomaly, a substandard condition of the secreting parenchyma of the stomach, was evident in 40 per cent. of seventy men with the diagnosis of gastric achylia or anacidity. Achylia represents the condition when there is no hydrochloric acid and no ferments. When there are ferments, but little or no hydrochloric acid, the condition should be called achlorhydria or anacidity, and this may be secondary to gallstones, infectious diseases, etc., but in the majority of cases no exogenous factor can be discovered. A constitutional anomaly must be assumed in this group. The subject frequently seems to be normal otherwise, but it often accompanies neurasthenia, anemic conditions with lymphocytosis, and also gastric ulcer.

The Stomach Disturbances with Cardiovascular Disease.—Dienstfertig's tables reproduce the findings in regard to gastric acidity and the blood pressure in 113 cases of heart and vascular disease with gastric derangement but without organic lesions in the stomach.

Deutsches Archiv für klinische Medizin, Leipzig

April 18, 1922, **139**, No. 1-2

*Salt and Blood Pressure in Pneumonia. R. Prigge.—p. 1.
*Infectious Abortion in Cattle. M. Klimmer and H. Haupt.—p. 33.
*Nitrogen Wear and Tear. S. Lauter.—p. 46.
*Percussion and Auscultation Records. P. Martini.—p. 65.
Uricacidemia in Gout. S. J. Thannhauser and M. Weinschenk.—p. 100.
Primary Streptococcus Viridans Meningitis. Patzig.—p. 111.
*Coagulation of the Blood. P. Holzer and E. Schilling.—p. 114.

Hypertonic Saline to Raise Blood Pressure in Pneumonia.—Prigge injected by the vein from 20 up to 38 gm. of sodium chlorid in pneumonia, usually 25 gm. in 100 gm. of water—seeking thus to make up the deficit in sodium chlorid which seems to be one of the features of pneumonia. The salt disappeared rapidly from the blood, just as in the three healthy controls, but it was retained and was not cast off in the urine in a day or two, as occurs in the healthy. When the injection was made slowly, there were no subjective sensations, except a feeling of warmth and occasionally slight headache, but always intense thirst. There was never the slightest chill or rise in temperature or in the number of leukocytes, and nothing to indicate irritation of the kidney, except slight brief hemoglobinuria in two cases. On the other hand, the blood pressure always rose immediately by 15 to 35 mm. mercury. This he regards as extremely important from the therapeutic standpoint. The effect was manifest for six or seven hours but not into the next day. The eleven pneumonia patients treated in this way all showed rapid improvement for several hours as the low blood pressure was thus forced up.

Infectious Abortion.—Klimmer and Haupt review the recent literature discussing whether Bang's *Corynebacterium abortus-infectiosi* is pathogenic for man. They say that infectious abortion has become so common in cattle of late that the bacterium is probably extensively present in raw milk and its products. They urge special examination of all cases of human abortion, and ask to have specimens of the fresh blood of women who have aborted, and of the blood of the fetus or stillborn child sent to them for study (Hygienische Institut, Circusstr. 40, Dresden), especially from rural districts. Inoculation of guinea-pigs might be supplemented with serologic tests. They comment on the many points of analogy with Malta fever.

Nitrogen Metabolism in Children and Pregnant Women.—Lauter gages the nitrogen metabolism by the amount of nitrogen that is eliminated on an abundant nitrogen-free diet, and hence is of purely endogenous origin. He tabulates this *abnützungsquote* in a number of children and pregnant women.

Percussion and Auscultation.—Martini describes methods for objective records of the findings of percussion and auscultation, and the laws regulating them.

Coagulation of the Blood.—Holzer and Schilling present evidence that the elements responsible for coagulation of the blood may have their action checked by changes in the relative proportions of the ions in the blood. This is responsible for the retarding and reducing of coagulation in certain diseases, and perhaps also in certain predisposed persons.

Deutsche medizinische Wochenschrift, Berlin

March 17, 1922, **48**, No. 11

*Roentgen Irradiation of Sarcomas. L. Seitz and H. Wintz.—p. 345.
Basis of Dosage in Artificial Heliotherapy. P. Keller.—p. 346.
Spectral Analysis and Microscopy in Relation to the Utilization of Ultraviolet Rays. E. Richter.—p. 348.
*Criterions Applicable to Roentgen Apparatus. Levy-Dorn.—p. 348.
*Modification of Weber-Rammstedt Operation. Gohrbandt.—p. 351.
Vein-to-Vein Transfusion in Surgical Cases. Hempel.—p. 352. Conc'n.
Sequels of Puerperal Mastitis. L. Nürnberger.—p. 354.
Technic of Intravenous Injections of Oil. Lenzmann.—p. 356.
Seborrheic Eczema and Psoriasis. H. Sieben.—p. 357.
Retention of Urine Without Demonstrable Cause. Stutzin.—p. 357.
Hypnotizing a Subject Against His Will. Costa.—p. 358.
Prophylic Alcohol as a Disinfectant. J. Christiansen.—p. 358.
General Paresis. R. Henneberg.—p. 359.
Dermatologic Technic. M. Joseph.—p. 361.

Roentgen-Ray Treatment of Sarcomas of the Genito-Urinary Organs.—Seitz and Wintz, directors of the University Women's Hospitals in Frankfort-on-the-Main and Erlangen, respectively, state that, in view of the difficulty of differential diagnosis between myoma and myosarcoma, they regard it as very important that we have in roentgen rays a means of establishing a delicate differential diagnosis in most cases. On irradiating an ordinary myoma, the effect is first seen in the suppression of ovarian activity. After two or three months the menses no longer occur and there is a reflex effect on the myoma. In the course of the next few months the tumor begins slowly to retrogress. After from twelve to eighteen months, it has almost disappeared. But irradiating a sarcoma or a myosarcoma, employing from 60 to 70 per cent. of an erythema dose, destroys the sarcoma cell. After two or three weeks, and occasionally immediately after the irradiation, a marked shrinking and rapid diminution of the tumor is noted. Thus, in ordinary, typical cases, a differential diagnosis as between myoma and sarcoma may be established by the varying behavior of the tumor—whether it shrinks rapidly or slowly. This presupposes, however, that a uterine tumor which, on account of its softness, its rapid growth and other clinical signs, is suspected of being malignant is given not a so-called castration dose of 34 per cent. of the erythema dosage, but the full sarcoma dose of from 60 to 70 per cent. Their experiences of the last four or five years have proved that it is possible to cure uterine sarcomas by the application of roentgen rays. Of four patients, aged from 14 to 21, three were still living after three and a half years and two after nearly five years. Veit's statistics showed 20 per cent. of the patients alive three to five years after the operation. Operative results are not nearly so good. Of 35 patients with sarcomas of the genito-urinary organs, whose cases extend back from two to five years, they have been able to effect a lasting cure in 74 per cent. Of 97 patients with sarcomas located outside of the genito-urinary organs they were able to save 33 per cent. (from two to three years having elapsed since treatment).

The Criterions Applicable to a Roentgen Apparatus to Be Used for Therapeutic Purposes.—Levy-Dorn of Berlin discusses the difficulties that confront the prospective buyer of a roentgen apparatus. What are the main points to be considered? The apparatus must enable us to make use of any of the methods now in vogue. It must therefore furnish the necessary hard and soft rays and must have a sufficient capacity as regards quantity of rays producible so that the sittings need not be prolonged unduly. The apparatus must be durable; its action must be uniform, and it must be easy to regulate. Protective devices for personnel and patients must be adequate, and economy of operation must be considered.

Wedge Resection Instead of Simple Incision in Operative Treatment of Congenital Hypertrophy of the Pylorus.—Gohrbandt reports six cases of pylorospasm in which Hildebrand's modification of the Weber-Rammstedt operation was followed, with the result that the wound healed without the slightest complication. He found from the literature that in 425 cases in which operation was by the Weber-Rammstedt method the mortality was 12.7 per cent. He reports the necropsy findings in an infant of 7 weeks. In the five days that had elapsed since the operation the cut surfaces had become adherent. Although the operation had been properly performed, the incision gaping wide and the mucosa separated from the muscularis in correct form, yet at necropsy it was only with difficulty that any sign of an incision could be discovered. He found by experimentation on dogs, in whom artificial pylorospasm had been produced, that usually in five days from the operation the cut surfaces adhered so tightly that even the strongest peristaltic movements could not separate them. Hildebrand resects a wedge, the point of the wedge toward the mucosa. This requires no more time and does not make the operation more complicated. If the right place is chosen, where there are no large blood vessels, hemorrhage need not be more profuse though the wound surfaces are larger. The main advantage is that it prevents too early adherence of the edges of the wound.

Klinische Wochenschrift, Berlin

Feb. 11, 1922, **1**, No. 7

The Tetany Syndrome and Its Pathogenesis. E. Frank.—p. 305.
Myo-Electric Researches on Hypnotic Catalepsy. E. Rehn.—p. 309.
*Pregnancy and Menstruation Glycosuria. H. Küstner.—p. 312.
Inflammatory Eye Affections of the New-Born Since the War. R. Salomon.—p. 313.
Results of Pneumothorax Treatment in Tuberculosis. Fraenkel.—p. 315.
Traumatic Lesions of the Talus. F. Lotsch.—p. 318.
Operative Treatment of Fractures (Lane). F. Selberg.—p. 320.
Dependence of the Action of Quinin Alkaloids on Bacteria on Alkalinity. L. Michaelis.—p. 321.
Influence of Chlorophyl Preparations on Human Metabolism. H. Koenigsfeld.—p. 322.
Movement of Air in Alveolar Passages of Lungs. Dreser.—p. 322.
Tuberculin Test in Relation to Scrofula. Landenberger.—p. 322.
The Fixation Bandage in Bone Fractures. F. Loeffler.—p. 325.
The Physician as a Teacher of Hygiene. Effler.—p. 327.
Present Status of Micromethods in Diagnosis. R. Freise.—p. 332.

The Glycosuria Test of Early Pregnancy.—Küstner's research has apparently established that test alimentary glycosuria occurs not only in the pregnant but also under certain other conditions. It seems to be connected with some change in the functioning of the ovaries, as it was encountered only in the few days before menstruation and early in pregnancy. This suggests, he says, that the corpus luteum has some influence on carbohydrate metabolism, in that it makes the kidneys permeable for sugar. He urges research to determine whether the kidneys become permeable for sugar in animals during the first days and weeks after fecundation. Also whether feeding nongravid animals with ovarian substance would increase or reduce the tolerance for sugar. Also the response to test ingestion of sugar in women whose ovaries have been removed or their functioning modified by the roentgen rays. Among the suggestive cases reported is one in which the pregnancy had been interrupted at the third month. The alimentary glycosuria continued for three days but on the fourth day the response was negative. He makes the test by injecting 0.5 mg. epinephrin and giving 10 gm. glucose by the mouth, and then examining the blood and the urine for sugar every half or three quarters of an hour. (Compare with recent abstracts in The Journal on pages 1768 and 1855.)

Zeitschrift für Tuberkulose, Berlin

March, 1922, **36**, No. 1

Tuberculosis in Relation to Housing at Bonn. A. Beekmann.—p. 1.
Chemotherapy in Tuberculosis. W. Müller.—p. 26.
Neurotomy of Superior Laryngeal Nerve in Treatment of Laryngeal Tuberculosis. W. Teller.—p. 35.
Eight Years of Experiences with the Friedmann Remedy. P. Kleeman.—p. 37.

Medizinische Klinik, Berlin

April 9, 1922, **18**, No. 15

*Arsphenamin Questions. J. Citron.—p. 459.
*Calcium Nitrid Poisoning. E. Hesse.—p. 461.
*The Abdominal Vagus Reflex. F. Glaser.—p. 462.
Gas Bacillus Infection of Liver After Shot Wound. Marx.—p. 464.
*Protein Therapy plus Serotherapy. P. Schmidt and Walter.—p. 467.
Subacute Phases of Coxa Deformans. L. Schmidt and Weisz.—p. 469.
Treatment of Tuberculosis of the Skin. J. Schweig.—p. 470.
Diagnosis of Scabies. E. Bäumer.—p. 471.
*Protein Versus Immune Therapy. Hoefer and Herzfeld.—p. 473.
*The d'Herelle Phenomenon with Streptococci. Piorkowski.—p. 474.
Recent Progress in Urology. R. Paschkis.—p. 478.

Arsphenamin Questions.—Citron enumerates among the causes of by-effects from arsphenamin treatment, besides those for which the quality of the drug and the dose or technic are responsible, the patient's constitution, permanent or transient, thymic-lymphatic status, vagotonia, latent or active microbism, lesions in liver, kidneys, etc., the localization of the syphilis, and the stage of the allergy. Acute yellow atrophy in syphilis was known before arsphenamin was invented, and in Lebert's three cases, in 1854, not even mercury had been given. All are agreed that acute yellow atrophy of the liver has become unusually common during the last five years, both with and without syphilis, but there is no evidence that arsphenamin is responsible for it. His impression is that the syphilis is responsible for the jaundice and the encephalitis, but the arsphenamin may be the last straw that brings it on.

Fertilizer Lesions.—Hesse reports experimental research with calcium nitrid which is being used more and more extensively as a fertilizer. It is liable to cause a dermatitis, to injure the respiratory apparatus and to induce an affection resembling the hyperemia of amyl nitrite, plus malaise and acceleration of the pulse. The attack lasts only a few hours and leaves no traces. Its special feature is that it develops only when alcohol is taken, and the attack can be brought on by giving the essential element of the calcium nitrid, cyanamid, with alcohol. No antidote is known. Prophylaxis is the main thing in factories, good ventilation, keeping down dust by adding oil, and protecting with a mask against inhalation, but, above all, by refraining from alcohol.

The Abdominal Vagus Reflex.—Glaser describes research on Widal's hemoclastic crisis, the leukopenia that follows drinking a glass of milk, fasting. He explains the phenomenon in a different way from Widal, ascribing it to the action of retained bile acids, and the leukopenia that follows to the altered distribution of the leukocytes, owing to dilatation or contraction of the vessels under the influence of the retained bile acids. He calls this test alimentary leukopenia, "the abdominal vagus reflex," and states that it occurs as a physiologic phenomenon in children up to puberty; it occurs also in vagotonia; with derangement of the liver and consequent retention of bile acids; it occurs further with anaphylaxis, urticaria, and anaphylactoid purpura and thrombopenia; it occurs also in the pregnant, and possibly also in diabetes, and with symptoms indicating pressure on the brain. In the course of his research he discovered an instructive vagotonic reaction. This is the opposite response of the blood vessels and blood count in the healthy and in the "vagotonikers" when one leg is dipped in hot water or in cold water. The alimentary leukopenia is due to reflex stimulation of the vagus and consecutive dilatation of the vessels in the skin.

Protein Therapy plus Serotherapy in Gonorrhea.—Schmidt is an ophthalmologist, and he here reports a combination of protein therapy and means to induce a serous discharge at the height of the febrile reaction, plus reinjection of the serous fluid. He calls this triple method, the *heilfieber-serum-stauung* plus vaccination with autogenous secretions, and has found it amazingly effectual, he says, in eye affections. Walter describes its application in fifty-three cases of gonococcus urethritis with a cure in 41 per cent. of the cases, including old chronic rebellious cases. Inducing the exudation of serous fluid at the height of the febrile reaction to the parenteral injection is regarded as the main element in the treatment. The drug found best adapted to induce this *serumaustritt* was ethyl-morphin hydrochlorid; 10 c.c. of a 10 per cent. solution was injected into the urethra six or eight hours after the subcutaneous or intramuscular injection of 5 c.c. of milk, boiled for four minutes in the water bath. The solution is held in the urethra for ten minutes. In recent cases the secretion was injected subcutaneously beforehand, as a vaccine, to induce production of antibodies; this was not necessary in the old cases. In Walter's fifty-three cases no benefit was apparent in any case within a week after infection, while from the eighth week onward success was realized in 100 per cent. of the cases.

Experimental Protein Therapy.—No reenforcing of the action of tetanus antitoxin could be discovered in the tests on mice when the immune therapy was supplemented with protein therapy. The latter alone could not compete at all with the effect of the specific antitoxin.

The d'Herelle Phenomenon.—Piorkowski comments on the frequent transformation of hemolytic streptococci in the tonsils into the viridans form. He found that cultures of streptococci are liable to develop the d'Herelle bacteriophagum transparent spots on a glucose-egg white-bouillon culture medium. The number and size of the spots throw light on the prognosis, the outlook being more favorable the more intense the process. He injected 1 c.c. of the bacteriophagum fluid, the *aufhellungsflüssigkeit,* into animals with streptococcus sepsis and three weeks later the blood was free from streptococci while the control animals still had them. He ascribes the bacteriophagia to a ferment action, the ferment formed by the body as a reaction to the invasion.

April 16, 1922, **18**, No. 16

The Prevailing Influenza. H. Curschmann.—p. 491.
Treatment of Abortion. F. Engelmann.—p. 493.
*Arteriosclerosis. W. Frey.—p. 495.
Pseudo-Entropium of the New-Born. Elschnig.—p. 498.
*Tuberculous Articular Rheumatism. H. Gorke.—p. 499.
Agglutination of Tubercle Bacilli. E. Christensen.—p. 502.
*Own Urine Test for Active Tuberculosis. Heimberger.—p. 504.
Tardy Relapses of Malaria. K. Brandenburg.—p. 508.
Present Status of Treatment of Acquired Deformities in Children. S. Peltesohn.—p. 509.

Arteriosclerosis.—Frey recalls that hyperemia in an organ follows increased functional use and is not primary, and that lactic acid and phosphoric acid tend to induce contraction of muscle. Carbon dioxid also has a vasoconstricting or vasodilating action according to its concentration. Arteriosclerosis is generally regarded as connected with the wearing out of organs, but this wearing out may be from chemical and toxic influences as well as from mechanical factors. The intermediate metabolism is responsible further for the reflex hypertonia so common with arteriosclerosis. These and other facts which he cites help to explain the nervous phenomena in the vascular system in arteriosclerosis, and the connection between much functional use of an organ and the arteriosclerosis and hypertonia: The formation of lactic acid and phosphoric acid and of nitrogenous waste are the driving factors. Repose of the organ reduces its metabolism and the production of these products, and the reflex does not occur, but too much repose leads to atrophy. A milk-vegetable diet keeps down production of acids; some advocate alkali in treatment. Rumpf ascribes the benefit from potassium iodid to its action as an alkali. The reflex hypertonia indicates irritability of the nervous system, and small doses of bromids are of good effect. By physical and other measures the circulation through organs may be improved; venesection may have a similar action, and administration of theobromin.

Tuberculous Articular Rheumatism.—The man of 47 had also multiple tuberculous abscesses in the subcutaneous cellular tissue.

The Own Urine Test for Tuberculosis.—Heimberger reports that the findings with Wildbolz's urine test corroborated the clinical course in his twenty-five cases. He is convinced that an active process can be excluded when the outcome is negative, even with a positive tuberculin reaction.

Münchener medizinische Wochenschrift, Munich

March 17, 1922, **69**, No. 11

Tuberculosis and Constitution. F. Müller.—p. 379.
Anthropometry. R. Martin.—p. 383.
Carbon Dioxid Freezing of Sciatic and Saphenous Nerves to Arrest Pain of Angiospastic Origin in the Legs. A. Läwen.—p. 389.
*The Constitution and the Endocrine System. O. Wuth.—p. 392.
Roentgen-Ray Diagnosis of Disease in Genito-Urinary Organs. Janssen.—p. 394.
Treatment of Peritonsillitis. H. Dahmann.—p. 396.
Wavy Skin Incision; Its Indications. A. Ritschl.—p. 397.
Apparatus for Mobilization of Foot and Toes. Hohmann.—p. 397.
Perineal Cramp. K. L. Elsner.—p. 399.
Fixation of Head Aids in Prophylaxis of Nausea on Irritation of Vestibule. Fischer and Wodak.—p. 400.
Treatment of Oxyuriasis. W. T. Schmidt.—p. 400.
"Tuberculous" Versus "Phthisic." F. Marchand.—p. 401.
Blood Examination by General Practitioner. Morawitz.—p. 402.

The Constitution and the Endocrine System.—Wuth thinks we have in thyrogenic psychic disturbances a group of affections in which there is abundant evidence for believing that the psychic habitus is influenced by somatic anomalies. For example, we find associated with a pathologic decrease in the activity of the thyroid gland a corresponding apathy, a diminution of mental alertness, mental energy or psychomotility. Charcot referred significantly to the "winter sleep of the psyche." Kocher coined for cretins the expression "plant men." In thyroid disturbances characterized by a hyperfunctioning of this organ we have increased excitability and emotional instability. Other psychic changes may be associated with disturbances of the pituitary gland or the generative glands and may manifest themselves by a phlegmatic temperament. While it is true that many questions bearing on the endocrine system and its effects on the body are not cleared up as yet, we can nevertheless say with a considerable degree of certainty that all the aforementioned psychic anomalies have this in common that the organs giving rise to the psychic change belong to the endocrine system. This conception is supported by therapeutic experience and to a certain extent by animal experimentation.

March 24, 1922, **69**, No. 12

Endocarditis Chronica (Lenta). H. Curschmann.—p. 419.
Relations Between Tetany and Rachitis. Freudenberg and György.—p. 422.
Roentgen Treatment in Menopause Disturbances. Groedel.—p. 423.
Technic and Limitations of Laparoscopy. R. Korbsch.—p. 426.
Mixtures of Mercury and Arsphenamin. S. Rothman.—p. 427.
Errors in Dosimetry in Deep Roentgen Therapy. Schempp.—p. 429.
Keratosis Tonsillaris. E. Gäbert.—p. 431.
Age plus Thickness of Fat in Abdominal Wall the Sole Criterion of State of Nutrition. K. Käding.—p. 433.
Superiority of Sodium Hypochlorite for Homogenization of Sputum. Edith Rosenkranz.—p. 434.
Idiosyncrasy for Cow's Milk. E. Neter.—p. 435.
Use in Medicine of Domestic Flora. A. von Schrenck.—p. 435.
Koplik Spots in Influenza. B. Asal-Falk.—p. 437.
Roser-Nélaton Line with Nontraumatic Hip Disease. Kind and Weskott.—p. 437.

*Wearing of Urinal in Combating Enuresis. Plato.—p. 438.
Restoration of Blood Volume and Cardiac Stimulation, Following Hemorrhages. Wieting.—p. 439.

Urinal in Treatment of Enuresis.—Merely for the convenience of the household, Plato ordered the children to wear a urinal day and night, but was surprised to find that it had an unmistakable therapeutic action. When the children found that their infirmity did not attract the attention of others, and that they could join in games, attend the theater, etc., the calming effect, the undisturbed sleep, and other obvious factors cooperated so that in a few months the urinal could be discarded completely. This required six weeks, eight weeks and four months in his three cases, and three to five months in thirteen of fifteen boys in an orphan asylum. In only two instances was the enuresis refractory.

Wiener klinische Wochenschrift, Vienna

March 9, 1922, **35,** No. 10

Decomposition of Biliary Pigments by Anaërobic Intestinal Bacteria Causing Putrefaction. F. Passini.—p. 217.
Vasomotor Disturbances in Cerebral Hemiplegias. Kahler.—p. 219.
Hemolytic Characteristics of Drugs as Indication of Power to Form Infiltrates. K. Peyrer.—p. 222.
Temporary Natural Resistance to Syphilis. R. Brandt.—p. 223.
Treatment of Blepharospasm. N. Blatt.—p. 225.

March 16, 1922, **35,** No. 11

Chronic Bacillary Dysentery and Colitis. Kling.—p. 239. Conc'n No. 12, p. 271.
Psychophysical Problem in Sexual Pathology. O. Schwarz.—p. 243.
A Case of Balantidiasis Coli. R. Kolisch.—p. 246.
Involvement of Larynx in Acute Articular Rheumatism. Hutter.—p. 247.
"Intradermal Reaction in Lupus." Kusan.—p. 248. Reply. Busacca.—p. 250.

Zeitschrift für Kinderheilkunde, Berlin

April 12, 1922, **32,** No. 3-4

*The Stigmas of Premature Birth. J. Rosenstern.—p. 129.
*Vascular Changes in Infantile Scurvy. T. Ide.—p. 165.
Growth of Previously Undernourished Children. Goldstein.—p. 178.
Feeding Problems with Congenital Syphilis. E. Stransky.—p. 199.
*Calcium in Spasmophilia. T. Geussenhainer.—p. 215.
*Research on Equilibration in Children. E. Schur.—p. 227.
*Endogenous Infection of Duodenum. K. Scheer.—p. 240.
*Influence of Saline Injections. L. Stoltenberg.—p. 246.

Stigmas of Premature Birth.—Rosenstern refers to certain abnormal proportions and other stigmas which become apparent in the prematurely born and gradually disappear in the course of a few years. The head grows large and the brain grows still larger, so that the pressure is increased, and there is a tendency to spasms, a frog type of face, and often an exceptional size of the genitals in the male infants. The illustrations showing these stigmas impress one with the importance of what these children lost by their premature birth, probably maternal hormones.

Vascular Changes in Infantile Scurvy.—Ide found endarteritis of the medium arteries in three of four infants with Barlow's disease in Pirquet's service in Vienna. One of the children had symmetrical gangrene of both feet.

Calcium Content of Blood in Spasmophilia.—Geussenhainer reports research on the isolated frog heart with serum from infants and other children. The calcium content of the blood could be estimated by the effect on the frog heart. The influence of calcium given by the mouth was plainly evident in the behavior of the frog heart, but this lasted only as long as the calcium was being given. By the next day not a trace of it was apparent. He accepts this as evidence that calcium treatment in spasmophilia has no causal efficacy; the effect is transient. He states in conclusion that his research has shown a previously unsuspected change in the composition of the blood from calcium treatment. It has also rendered dubious whether the poverty of the blood in calcium can be regarded as responsible for the tetany, either alone or quantitatively.

The Static Organ in Children.—Schur investigated the vestibular apparatus in large numbers of healthy children, testing them with the revolving chair and with heat and cold applied to the ear.

Endogenous Infection of the Duodenum.—Scheer comments on the necessity for resting and sparing the small intestine with endogenous infection of this upper portion of the bowel. Food has to be cut off, while other food disturbances may be directly injured with this. Hence the importance of differentiating these conditions. The duodenal tube is too complicated for general use, and Scheer says that his 150 tests on ninety-five infants have demonstrated that when colon bacilli get up as far as the small intestine, they do not stop here but keep on up into the stomach. The colon bacillus is sensitive to acid, and the infant stomach is hyperacid in severe dyspepsia. But if the stomach is aspirated in half an hour or an hour after feeding, the acid content is low. With normal acidity and no colon bacilli, we can be sure there are no colon bacilli in the duodenum, and the assumption of endogenous infection can be dropped. If colon bacilli are found, we can be sure that they are in the duodenum likewise. If the acidity is very high, the examination should be repeated at an earlier phase of digestion. Repeated application of the procedure allows oversight of the progress of the enteritis.

Influence of Saline Injections in Children.—Stoltenberg refers to the influence on the temperature and on the chlorin and nitrogen content of the blood. His findings differ from Scheer's in certain respects.

Zeitschrift für urologische Chirurgie, Berlin

April 11, 1922, **9,** No. 1

*The Uranin Test of Kidney Function. E. Roedelius.—p. 1.
*Kidney Cancer in Children. R. Peicic.—p. 9.
*Treatment of Tuberculous Seminal Vesicles. T. Hryntschak.—p. 17.
Cystoradioscopy. D. Eisenstädter.—p. 38.

The Uranin Test of Kidney Function.—Roedelius relates that in Kümmell's service at Hamburg it was found that after ingestion of 1 gm. of fluorescein sodium (uranin), it appeared in the urine in ten minutes and had disappeared by the end of the fortieth hour in normal persons, and in those with digestive disturbances but with functionally capable kidneys. With suspected disease of one kidney, the test is decisive only when it is negative. Persistence of the stain in the urine after the fortieth hour testifies to pathologic conditions, as also when the urine does not show the stain in ten minutes or soon thereafter. The test is most instructive with prostate disease and its consequences. If the ureters have to be catheterized, the indigocarmin technic is preferable. But otherwise, and when it is desirable to repeat the test often, this simple uranin procedure is very useful. The longest delay in the elimination of the stain, 158 hours, was in a case of cancer of the prostate. With enlargement of the prostate, a normal response was obtained only in one of the numerous cases tested. The elimination continued to the forty-second to the sixtieth hour in all the other prostate, bladder and urethra stenosis cases. In one case of pyelonephritis and cystitis, the elimination kept up for eight days.

Kidney Cancer in Children.—In Peicic's case the tumor in the girl of 11 was a tubular adenocarcinoma originating in the excretory portion of the fetal kidney. The tumor measured 14 cm. in diameter and the weakly child has developed into a robust girl since the nephrectomy.

Tuberculous Seminal Vesicles.—Hryntschak says he does not advocate operative treatment of tuberculous seminal vesicles so long as they are not palpable. But if they are palpable, the absolute inefficacy of all other measures justifies surgical intervention, especially by Voelcker's simple technic. He reports six cases in which he applied it. The general health improved remarkably. The tuberculous epididymis was removed beforehand, but the testicle was left when possible; this is the only genital organ that seems capable of healing a tuberculous process. To remove a tuberculous epididymis and leave tuberculous seminal vesicles seems futile.

Zentralblatt für Gynäkologie, Leipzig

Feb. 11, 1922, **46,** No. 6

Case of Primary Carcinoma of the Tube. I. Amreich.—p. 209.
Treatment of Puerperal Fever. Hiess and Hirschenhauser.—p. 214.
Reduction of Mortality of the Freund-Wertheim Carcinoma Operation. P. von Kubinyi.—p. 222.
Trichomonas Vaginalis and the Glycogen Content of the Vagina in Relation to Vaginitis and Leukorrhea. A. Loeser.—p. 226.

Test of Virulence of Streptococci by Sigwart's Method. Neuer.—p. 229.
Uterus Torn Out During Delivery. M. Behrend.—p. 234.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 18, 1922, **1**, No. 11

*Articles Copied from Medical Journals. G. Van Rijnberk.—p. 1058.
*Tuberculous Iridocyclitis. A. J. de Favauge-Bruyel.—p. 1061.
Organ of Equilibration. F. H. Quix.—p. 1071.
Simple Colorimeter. J. de Haan.—p. 1076.
Vaccination Against Diphtheria. L. A. Wesly.—p. 1082.
Localization of Function in the Kidney. J. Goudsmit.—p. 1084. Conc'n No. 12, p. 1183.
Impressions of Graduate Course at Leysin. De Bloeme.—p. 1114.

Medical Journals and the Lay Press.—The Leyden branch of the Netherlands Medical Association recently was much exercised over a complaint that a certain person recognized himself in a published description of a case that appeared in a daily paper, having been copied from the *Nederlandsch Tijdschrift,* the organ of the association. The editor of the *Tijdschrift* comments that he blue-pencils many a report sent in, for fear of that very occurrence, but, at the same time, if no report could be published that might not be recognized by the patient or his family, nothing but ancient history could be published. The writer of the report in question says that he left out all particulars that could be omitted. The editorial adds, "The physician reports the case to his professional mates for their instruction and in the interests of other sick persons. If a lay paper republishes it and harm results, then the lay editor is responsible for this and no one else." The *Tijdschrift* and the Rotterdam branch of the association have already protested against the republication in the lay press of articles from medical journals, citing some of the numerous objections against this.

Tuberculous Iridocyclitis.—Bruyel's patient was a youth of 16 whose vision had been declining of late and nodules had been developing in the face, back and legs; bilateral iridocyclitis was accompanied with Boeck's miliary lupoid skin affection. This is the third case of this combination he has encountered, and he knows of eight similar cases on record. His other patients were men of 18 and 48. In two other cases the bilateral chronic iridocyclitis was also accompanied with a skin affection. In all these cases the skin disease was of a tuberculid nature. One of his own patients presented pseudoleukemia besides. In a sixth personally observed case, iridocyclitis accompanied pulmonary tuberculosis. The skin should be examined in cases of tuberculous eye disease. No dependence can be placed on a negative tuberculin test in these cases.

March 25, 1922, **1**, No. 12

A Stimulating Hygiene Exposition. P. Muntendam.—p. 1154.
*Progress in Tropical Medicine Since 1913. W. T. de Vogel.—p. 1157.
Lymphatic Blood Picture with Acute Infection. I. Snapper, R. Rijkens and A. J. L. Terwen.—p. 1168.
Malaria in Holland. L. A. Faber.—p. 1172.
Rosenow and Focal Infection. E. Bergsma.—p. 1210.

Recent Progress in Tropical Medicine.—This is the presidential address delivered at the opening of the Fourth Congress of the Far Eastern Association of Tropical Medicine last August in Java.

April 1, 1922, **1**, No. 13

Extracts from Old Herbals. G. van Rijnberk.—p. 1254.
*Congenital Marble Skin. C. H. J. van Lohuizen.—p. 1259.
*Movements of the Uterus. I. A. Wijsenbeek.—p. 1263.
The Dangers of Homosexuality. E. van Dieren.—p. 1270.
*Plague in the Seventeenth Century. J. J. van Loghem.—p. 1275.
Historical Magic Remedies: The Hippomanes. M. A. van Andel.—p. 1280.
Three Surgeons Who Were Also Sheriff and Bailiff. Bakker.—p. 1284.
Unicorns. J. B. F. van Gils.—p. 1287.

Congenital Marble Skin.—The universal telangiectasis covered the entire body of the child except part of the face, palms and soles. The color was the bluish red of a nevus. The family and the child were normal otherwise in every respect, and no cause could be discovered for this congenital marbling of the skin. It is shown in a colored plate. No record of an analogous case has been found.

Movements of the Uterus.—This communication from the pharmacology laboratory of the University of Amsterdam reports study of the movements of the rabbit uterus through a transparent celluloid window made in the abdomen. Nothing was seen of the swinging movements which occur in the surviving uterus experiments. The development and movements of the gravid uterus and the effect of drugs on the uterus were instructively studied in this way.

Plague in the Seventeenth Century.—Although the connection of rats with the plague was not known at that time, van Loghem has found many references to the fact that rats were house companions and very numerous. This tends to confirm the identity of "black death" and modern bubonic plague.

April 8, 1922, **1**, No. 14

*Corneal Abscess. H. J. Flieringa.—p. 1408.
*Persisting Psychosis After Influenza. H. Schade.—p. 1416.
*Oatmeal Days in Diabetes. A. Foyer.—p. 1420.
*Indicator for Oxygen. M. van Riemsdijk.—p. 1423.
Tuberculous Salpingitis. J. A. van Dongen.—p. 1428.
Acute Cerebral Tremor. A. Willemse.—p. 1433.
Present Status of Obstetric Paralysis. R. J. Harrenstein.—p. 1435.
*The Woman's Hospital in New York. E. Bergsma.—p. 1462.

Ring Abscess in the Cornea.—Flieringa reports research on rabbits which throws light on the factors responsible for a ring abscess in the cornea. It is always a serious affection.

Postinfluenzal Mental Disturbance.—In Schade's three cases the loss of memory and inability to concentrate the attention have persisted unmodified to date, two years in two of the cases. The patients were previously normal and the families are healthy.

Diabetes.—Foyer emphasizes that the blood sugar must be kept under supervision, especially before attempting an operation on a diabetic. "With high sugar content in the blood and low glycosuria, to give oatmeal is like taking in the Trojan horse."

Ideal Indicator for Oxygen.—Van Riemsdijk announces that the simple indicator he uses is decolored by the absence of oxygen, and it thus is extremely valuable for the control of absorption of oxygen in cultivating anaërobes. Methylene blue answers the purpose, but this takes too long. Glucose in an alkaline solution is a very sensitive and reliable indicator; it reveals even 0.4 of a millimeter of oxygen. The proportions have to be exactly correct: 3 c.c. of 10 per cent. glucose filtered, plus one drop of normal sodium hydroxid solution, and one drop of methylene blue solution (50 mg. in 30 c.c. of distilled water). Double strips of absorbent gauze are dipped in this fluid and spread against the wall of the test tube which is then placed open in the jar that is to be made free from oxygen. The indicator gauze is decolored in sixty minutes at 37 C. In the total absence of oxygen, decoloration occurs in twenty minutes. If there is any leak of oxygen into the jar, the color returns to the gauze. The indicator thus allows constant control, and the cultivation of anaërobes is thus immeasurably facilitated. An ordinary short, wide preserve jar gives ample surface area for absorption, and the cover fits air tight. For a jar containing 400 c.c. he uses 10 c.c. of 20 per cent. potassium hydroxid plus 3 c.c. of a 44 per cent. solution of pyrogallic acid.

Visit to the Woman's Hospital in New York.—Bergsma says that the gas test shown him in this hospital to test the permeability of the tubes in cases of sterility was new to him. It has been applied in the hospital in 200 cases, with operative control in fifty. When both tubes are obstructed the response is decisive. (The technic was described on page 1791.)

Hygiea, Stockholm

March 16, 1922, **84**, No. 5

*Disease of the Patella. S. Johansson.—p. 161.
*Gas Interchanges in the Lungs. T. Thunberg.—p. 167.
Acute Arsenic Poisoning in Six Children. J. S. Hesser.—p. 176.

April 15, 1922, **84**, No. 7

The Blood Pressure Question. E. Zander.—p. 257.

Disease of the Patella.—Johansson describes with illustrations a typical condition of the apex of the patella found in boys between 10 and 15. It is evidently of the same nature as the Osgood-Schlatter disease of the tuberosity of the tibia.

Is There a Genetic Connection Between the Oxygen Inhaled and the Acid in the Carbon Dioxid Exhaled?—Thunberg enumerates and compares the various theories on this subject

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THE TREATMENT OF TETANUS *

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During the interval between March 22, 1916, and Dec. 7, 1921, forty-nine patients with tetanus were admitted to the Los Angeles County Hospital. During this interval there were 74,393 total admissions, or one admission for tetanus to 1,518 admissions for all other causes. Twenty-six deaths occurred, or a mortality of 53 per cent. An analysis has been made of the records of these forty-nine patients in the hope that certain deductions may be made as to existing methods of treatment.

PROPHYLAXIS

The prophylaxis of the disease has been so well established that but little discussion is necessary to convince one of its value. Probably, however, considering the population as a whole, not more than 1 per cent. of those who receive puncture wounds of the type considered most liable to tetanus infection receive such treatment by physicians, for the reason that they are not consulted. A large majority of people believe their own simple methods of wound treatment efficient and sufficient. On the other hand, physicians are sometimes guilty of neglect, although few of the patients whose records have been studied in this series were seen by physicians prior to the onset of the disease. As a result, there was no record of prophylactic injection in any case, despite the fact that, in a few instances seen by physicians, the character of the injury should have aroused suspicion of the possible consequences.

I am indebted to the Surgeon General of the United States Army for data dealing with the prophylaxis of wounds received in action among our soldiers during the World War. The instructions called for the injection of antitetanic serum as soon as possible after all war wounds. The usual dose was 1,500 units. This was repeated within ten days. The instructions also called for a repetition of the dose, for patients on whom subsequent operation was done, care being taken to prevent an anaphylactic reaction. That these measures were effective is shown by the results obtained for, among 224,089 war wounds, only thirty-six patients developed tetanus, or one to each 6,224 wounds. This is in marked contrast to the disease incidence during the Civil War, before the introduction of antitetanic serum. Sanford [1] has stated that 505 patients developed tetanus among 246,172 wounded during the Civil War, or one to each 487 wounds. Bazy [2] observed 200 wounded from the same sector during the World War. One hundred received tetanus antitoxin, and only one developed tetanus (the day after injection), while among 100 who, for one reason or another, did not receive antitoxin, eighteen developed tetanus.

The British war statistics, as given by Sir David Bruce,[3] are convincing. He has shown that among 2,032,142 wounded, tetanus developed in 2,385, or an incidence of 1.17 per thousand. He [4] has emphasized the fact that before the routine use of antitoxin the incidence of tetanus among the wounded was from 15 to 32 per thousand, while after its routine use the incidence never rose above 2 or 3 per thousand.

THE PROPHYLACTIC DOSE

The British in the earlier days of the World War used 500 units of antitoxin as the prophylactic dose. In June, 1917, it was ordered that four such inoculations should be given at intervals of seven days. In August, 1918, this order was changed, and one dose of 1,500 units was given. The War Office Committee for the study of tetanus has stated it was not conclusive that the larger dose more adequately protected, the smaller dose having appeared to be as efficacious. In the United States the prevailing custom has been to administer a prophylactic dose of 1,500 units, which is about the quantity sufficient to protect against 2,000 times the minimal fatal dose of toxin for a person weighing 150 pounds (68 kg.). Practically all of the antitoxic effect is eliminated in eight or ten days after the injection. Since this interval is about the usual incubation period, if a lacerated wound contains dead spaces, a foreign body or necrotic tissue, it will be wise to repeat the dose every eight or ten days, since in such instances tetanus may not develop for a number of weeks after the injury. The British statistics show that more than two million prophylactic injections of tetanus antitoxin were given during the war and that only eleven instances of anaphylactic shock occurred, in all of which the patients recovered. Tulloch [5] believes that the presence of pyogenic organisms in wounds is a predisposing factor of great importance, since symbiosis of bacilli or spores is necessary before tetanus toxin can be produced. This has not appeared to be true in a number of the patients in the series here reported, for clean healed wounds of a few days' duration have been followed by tetanus.

The prophylactic injection, in addition to its importance in lowering the disease incidence, deserves con-

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* Read before the Section on Practice of Medicine at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Sanford: Bull. Internat. A. M. Museum **7**: 365, 1918.

[2] Bazy: Bull. et mém. Soc. de chir. de Paris **42**: 2919, 1916.

[3] Bruce, D.: J. Hyg. **19**: 1 (July) 1920.

[4] Bruce: Brit. M. J. **1**: 118 (Jan. 27) 1917.

[5] Tulloch, W. J.: Proc. Roy. Soc. London **40**: 529, 1917-1919; Brit. M. J. **1**: 164 (June 1) 1918.

sideration for its influence on the incubation period, which in turn affects the mortality. The British statistics show that among those patients who received a prophylactic dose of 500 units, and who subsequently developed tetanus, the average incubation period was 45.5 days; while among those who did not receive the prophylactic dose, the average incubation period was 10.9 days. The prophylactic dose lowered the mortality, which was 53.3 per cent. among those who had not had it, to 22.5 per cent. among those who developed tetanus after receiving it. It should be the rule to give a prophylactic dose of antitoxin whenever a wound, even though healed, is to be reopened. This refers particularly to operations on compound fractures and exploration for foreign bodies, or for the removal of dense cicatrices.

THE TYPE OF WOUND AND ITS PRIMARY SURGICAL TREATMENT

The anaerobic conditions favorable to the growth of tetanus bacilli are augmented in contused lacerated wounds in which destruction of tissue and blood supply has occurred. A considerable proportion of wounds capable of carrying tetanus infection are not of such an extensive character. Tetanus bacilli occur normally in the intestinal tracts of many horses, cattle and other animals, such as dogs and cats, which take up with their food a considerable quantity of soil dirt. It has been stated by Ashhurst[6] that tetanus bacilli are found in 5 per cent. of human intestinal tracts. Two of the patients in the present series developed tetanus from infected bedsores which presumably came in contact with dejecta, while another instance followed operation for gangrenous appendicitis. The catgut used was not entirely excluded as a source of infection in this patient, although the statement was made at the hospital where the operation was performed that "the suture material was boiled for twenty minutes." Tetanus also occurred in another patient of this series nine weeks after an operation for hernia. No other point of entrance of the infection could be found. In Table 1 will be found a description of the types of injury responsible for the infection in forty-nine cases.

TABLE 1.—TYPES OF INJURY RESPONSIBLE FOR TETANUS IN FORTY-NINE CASES

Injury	Number of Cases
Punctured nail wound of foot	9
Contusion of finger	8
Lacerated wound of foot	6
Sliver in foot	2
Bedsore on buttocks	2
Sliver in buttock	1
Sliver in hand	1
Sliver in leg	1
Lacerated wound of leg	1
Stubbed toe injury	1
Abrasion of heel from new shoe	1
Infected wound abdomen following gangrenous appendicitis	1
Hernia operation, wound clean	1
Curettage for incomplete abortion	1
Laceration of perineum and multiple fractures	1
Compound fracture of tibia and fibula	1
Abrasion of back due to rock missile	1
Scratch on hand	1
Rabbit bite of wrist	1
Infected sore of scalp	1
Multiple lacerations following automobile accident	1
Infected umbilicus (infant 11 days old)	1
Unknown	5
Total	49

The largest number of cases, 46.6 per cent., followed injury of the feet and legs, while 24.3 per cent. followed injury of the upper extremity.

For simple injuries, the application of 3 per cent. iodin in alcohol with protection of the wound by a sterile bandage will ordinarily suffice. If, however, tissue laceration has occurred, primary excision and primary, or delayed primary, suture should be done. Sir David Bruce has stated that this method of wound treatment during the war took surgeons a long time to learn, but would probably have led to extinction of tetanus if the war had lasted longer. He has shown that, for war wounds, certain types of which certainly do not differ essentially from lacerated wounds seen in civil life, before primary incision and excision was practiced the incidence of tetanus was 103 per hundred thousand; by February, 1918, the incidence had dropped to 24; by May, 1918, to 12, and by June, 1918, to 8 per hundred thousand. The cautery should not be used, since it produces necrotic tissue, a condition favorable to the growth of the tetanus bacillus or spores. Three of our cases resulted from retained slivers or splinters of wood. Ordinarily these injuries receive but scant attention, although their importance as foreign body wounds favorable for the development of the infection deserve more consideration. Lacy and Murdock[7] have recently reported an instance of infection following a large, open, scrotal wound from which the testicle was removed for tuberculous orchitis and epididymitis. The wound was probably contaminated by anal discharges, since *B. coli* and *B. welchii* were present. Tetanus bacilli were isolated from the spinal fluid of this patient, which brings up the point that spores or bacilli may be engulfed by phagocytes and transported to distant parts of the body, there to originate other foci for the development of toxin.

TABLE 2.—INCUBATION PERIOD

Incubation Period	No. of Cases	Incubation Period	No. of Cases
3 days	1	10 days	4
4 days	4	11 days	6
5 days	1	12 days	1
6 days	2	14 days	6
7 days	2	From 20 to 23 days	3
8 days	1	27 days	1
9 days	4	63 days	1

The report of the committee for the study of tetanus of the British war office, cited by Bruce, showed that "it appeared safer to abstain from surgical interference with a wound after tetanus had appeared." It does not appear from their figures that interference was as dangerous as believed, since in such cases the mortality (24.3 per cent.) was apparently not increased.

THE INCUBATION PERIOD AND ITS RELATION TO MORTALITY

Among thirty-seven patients of this series, for whom the incubation period could be traced with reasonable accuracy, the shortest period was three days, while the longest period was sixty-three days. As will be seen in Table 2, the largest number of patients developed the disease in from ten to fourteen days after their injury.

Excluding the one patient with the sixty-three day incubation period, the average interval between injury and the onset of the disease for thirty-six patients was 10.8 days. The British statistics during the World War showed that the greatest number developed the disease on the tenth day after the wound.

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[6] Ashhurst, A. P. C.: Report on Tetanus, Arch. Surg. **1:** 407 (Nov.) 1920.

[7] Lacy, G. R., and Murdock, C.: J. Lab. & Clin. Med. **7:** 100 (Nov.) 1921.

It has long been recognized that the shorter the incubation period the higher was the mortality. Of eight patients in this series who developed the disease up to and including the sixth day after injury, six died, giving a mortality rate of 75 per cent. Among twenty-four patients whose incubation period was from seven to and including fourteen days, twelve died and twelve recovered, a mortality rate of 50 per cent.; while among five patients whose incubation period was twenty days or longer three recovered and two died, a mortality rate of 40 per cent. The British statistics show that among 128 patients whose incubation period was seven days or under, the mortality was 58.6 per cent., while among 429 patients whose incubation period was thirty-five days or longer the mortality was 15.4 per cent. The statistics also show that among 400 wounds of the upper extremity which were followed by tetanus, the mortality was 39.5 per cent., while among 480 wounds of the lower extremity the mortality from tetanus was 36.1 per cent.

THE MORTALITY FROM TETANUS

The death rate before the introduction of tetanus antitoxin was about 85 per cent. The British war statistics have shown that among 1,437 patients treated in England, 501, or 34.8 per cent., died. These patients had comparatively long incubation periods, owing to the earlier prophylactic injection. Those who did not receive the prophylactic injection or whose incubation was shorter (averaging from twelve to thirteen days) were treated in the hospitals in France. Among 715 such patients, 510 died, a mortality rate of 71.2 per cent. The British total figures show that 2,152 soldiers developed tetanus during the World War, with 1,011 deaths, or 47 per cent.

Many factors enter into a study of the mortality rates reported from different hospitals. For example, Gessner,[8] who studied 368 case reports from the New Orleans Charity Hospital for the period 1906-1918, has expressed the pessimistic opinion that since the mortality was 70.7 per cent. "we must admit that we have progressed but little in the treatment of the disease." Such a conclusion seems hardly justified, for it may be pointed out that a high mortality of 71 per cent. among 121 patients who did not receive more than 10,000 units of antitoxin would not be unusual, in view of the method and size of the dose administered. His own figures show that among twenty-three patients who received more than 10,000 units of antitoxin the mortality was 56.5 per cent. It should be recalled that, in any series of instances of this disease (the acute cases of short incubation), the patients may die before there is time to administer antitoxin in sufficiently large doses to save life. In other words, the longer such patients live, the greater the probability that they will receive large and more adequate dosage. Again, it should be recalled that the virulence of the infecting strain may vary with different years. For example, among seven patients of our series, admitted in 1916, the mortality was 71 per cent., while among seven patients admitted during 1917 the mortality was 14.3 per cent. Again, among nine patients treated during the year 1920, the mortality was 44.4 per cent., while among ten patients treated during 1921 the mortality was 70 per cent.

The interval elapsing between the onset of symptoms and the time treatment is begun will likewise greatly influence mortality. It has been stated by Ashhurst that the amount of antitoxin required to prevent death increases in geometric progression with the lapse of time. If sufficient time has elapsed to allow toxin fixation in the nerve cells of the cord, the mortality will be greatly increased. The small amount of toxin necessary to kill, together with the time factor and inadequate antitoxin dosage, accounts for the high mortality of the disease. Twelve of the patients in the present series were not admitted to the hospital for treatment until after a lapse of three days or longer following the onset of symptoms.

SYMPTOMS

Trismus may be considered the most important early symptom. Neck stiffness and general muscular rigidity of the trunk muscles were also common. The deep, and in many patients the superficial reflexes were increased. In some patients, stiffness of the legs was mentioned as a symptom of early onset. In children, general convulsions occurred early in the disease. Pain was common as a result of movement affecting the rigid lumbar muscles or the diaphragmatic or intercostal movements in breathing. Opisthotonos was common.

The facial expression of those patients whose jaws were fixed was typical of the sardonic grin. Consciousness was generally not disturbed. Fever was not present as a rule early in the disease, but the pulse and respiration rates were increased. Localized clonic contractions of the muscles of the extremities also occurred as a frequent symptom. The pupils, as a rule, were equal, and reacted to light. Kernig's sign could not be estimated because of the general lumbar rigidity. Ankle clonus and a positive Babinski reflex may be present. The leukocytes were moderately increased, the average count approximately from 12,000 to 15,000, with a moderate polynucleosis (from 70 to 78 per cent.). The highest leukocyte count encountered on entrance was 17,600. The highest polymorphonuclear increase encountered was 93 per cent. The spinal fluid was usually under increased pressure, with a normal cell count and negative globulin test. After the injection of antitoxin intraspinally, the cell count was greatly increased and globulin was present, owing to the meningeal irritation produced by the serum.

Trismus as an initial symptom deserves special consideration from a prognostic point of view, since by it the physician may gage relatively the amount of toxin absorbed by the cells of the central nervous system. It has been observed repeatedly that among patients in whom the trismus progressed rapidly after the onset and was complete within twenty-four hours, the mortality was high, approximately from 60 to 70 per cent.; whereas among those who developed tardy and incomplete trismus the mortality was lower, probably not more than 30 per cent.

So-called chronic tetanus is not uncommon. In this form, trismus may be absent, but the muscles about a wound may show tonic or clonic contractions. The pulse rate will be increased, but, in the absence of secondary infection, fever may not be present. Such evidences may not occur for several weeks or months after an operation or injury, and seem to be more common when associated with low grade bone infections.

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[8] Gessner, H. B.: The Therapeutics of Tetanus, J. A. M. A. 71: 867 (Sept. 14) 1918.

TREATMENT

The toxin produced by the tetanus bacillus is one of the most powerful of known poisons. It has been estimated that 1/300 grain of the dried toxin will be fatal for man. It is about twenty times more poisonous than dried cobra venom. The toxin reaches the central nervous system by way of the axis cylinders of the peripheral nerves, either by means of centripetal protoplasmic currents or by way of the lymph channels of the epineuria or perineuria. Robertson[9] believes that the lymph channels are important as a means of transportation of the toxin which gains access to the spinal cord through the motor roots, from which it spreads to the sensory side. Richardson has obtained tetanus bacilli in pure culture from lymph glands adjacent to the focus of infection. As a rule, it has not proved profitable to search for tetanus bacilli in wound secretions or adjacent glands. A better plan is animal inoculation of suspected material from wounds, or anaerobic culture by the Buchner or Wright method. The toxin present in the blood stream is probably small in amount and is not responsible for the symptoms, which occur only when access has been obtained to the cells of the central nervous system. Unfortunately, the nerve cells apparently have greater affinity for tetanus toxin than for antitoxin, a serious handicap in the treatment of the disease.

TABLE 3.—MORTALITY ACCORDING TO TOTAL DOSAGE

Total Dosage in Thousand Units	Number of Patients	Mortality, Per Cent.
From 10 to 15......	7	42.8
From 15 to 25......	8	62.5
From 25 to 40......	8	75.0
From 40 to 60......	11	54.5
From 60 to 100......	7	42.8
From 100 to 200......	3	33.3
From 250 to 350......	4	25.0

The plan of treatment usually followed in this country has been based on the experimental work of Park and Nicoll,[10] who advocated early administration of from 3,000 to 5,000 units intraspinally, repeated in twenty-four hours, and from 10,000 to 15,000 units intravenously. Three or four days later, in order to continue the antitoxin effect for four or five days longer, a subcutaneous injection of from 10,000 to 15,000 units was advised. These authors have expressed the opinion that no advantage was gained in giving larger doses. Nicoll,[11] in reporting twenty cases of tetanus with a mortality of only 20 per cent., stated that 40,000 units was the usual total dosage given. Emphasis should be placed on the benefit following intraspinal treatment. Sherrington's experiments have likewise shown that, in animals, the lowest mortality followed subdural and bulbar injections.

We have believed that some patients of the series here reported were saved by much larger doses of antitoxin than those advocated by Park and Nicoll. In Table 3 will be seen the mortality according to the total dosage used. Forty-four of the forty-nine patients received intraspinal and intravenous injections as well as injections into the tissues about the wound, when such was present.

In the interpretation of these figures it should be borne in mind that the incubation period or the elapsed time before treatment was begun was not considered. It should be emphasized also that the tendency to give continued large dosage was more evident the longer the patient lived. This has been modified by more experience since it has been realized that there was probably little advantage in continuing large daily doses after the third or fourth day of treatment. Improvement, in fact, may not be evident until six or seven days after treatment has been begun. Failure to appreciate this fact has led many physicians to adopt other methods, such as the injection of phenol (carbolic acid) or magnesium sulphate, and when the patient has recovered, to ascribe the cure to the latter drugs. Experience has shown that such methods are of little value in the treatment of the disease. It has been interesting to note in the British war statistics given by Bruce that, of 214 patients who received 100,000 antitoxin units (fifty-six received more than 200,000 units), the mortality was but 11.4 per cent. Here, again, it should be recalled that many of the very acutely ill patients died before they received large doses.

From a survey of the literature, an analysis of the records of the patients of this series and personal experience, it is believed that the following plan of treatment as carried out in the hospital offers the best chance of recovery to patients with this disease:

1. Fluids should be given by mouth or rectum in sufficient amount to prevent dehydration. The amounts given and the quantities of urine passed should be recorded. If edema of the lungs occurs, the amount of fluid intake should be restricted to 500 c.c. daily. The urine should be examined daily.

2. Since metabolism is greatly increased because of the muscular spasms, it is necessary to secure quiet and relaxation in order to prevent exhaustion. For this purpose, phenobarbital (luminal) in 3 to 5 grain doses may be given by mouth or rectum if necessary every three to six hours. Chlorbutanol, from 15 to 30 grains in diluted alcohol or whisky, may also be used every three to six hours. Morphin, ¼ grain, with atropin, 1/100 grain, may be necessary, but should be used cautiously if the patient is under the effect of other drugs.

3. As early as possible after the onset of symptoms, the following plan of administration of antitoxin is recommended. Since little time is lost by the procedure, 1 c.c. of antitoxin is injected subcutaneously to desensitize the patient. If no anaphylactic symptoms, such as dyspnea, cyanosis or rapid, feeble pulse occur, 20,000 units of antitoxin are given intravenously thirty minutes later. The gravity method is preferred, a large glass syringe barrel being used as the container, to which is attached about 15 inches of rubber tubing for the needle connection. The rubber tubing should not be new because of poisonous symptoms which sometimes occur as the result of soluble toxic substances present in new rubber. If new rubber tubing is to be used, it should be thoroughly washed for half an hour in a 5 per cent. sodium hydroxid solution before boiling. The needle should be of 19-18 gage and about 1½ inches long. It should be threaded its entire length into the vein in order to avoid accidental removal during injection. The antitoxin should be diluted with an equal volume of warm physiologic sodium chlorid solution and should be maintained at as near body temperature as possible. The first 10 c.c. should be allowed to flow in slowly at a rate of about 1 c.c. a minute. If symptoms of anaphylaxis occur, one should discontinue the injection and try again in three hours, since the patient has probably been desensitized by the amount of serum previously received.

4. After the intravenous dose, 20,000 units should be given intraspinally (10,000 units for children). The lumbar puncture should be done in the ordinary way, 0.5 per cent. procain or 1.5 per cent. solution of apothesin being employed. If the

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[9] Robertson, H. E.: Am. J. M. Sc. **152:** 31 (July) 1916.

[10] Park, W. H., and Nicoll, Matthias, Jr.: Experiments on the Curative Value of the Intraspinal Administration of Tetanus Antitoxin, J. A. M. A. **63:** 235 (July 18) 1914.

[11] Nicoll, Matthias, Jr.: Intraspinal Administration of Antitoxin in Tetanus, J. A. M. A. **64:** 1982 (June 12) 1915.

patient is in opisthotonos, one should not attempt to perform the lumbar puncture without general anesthesia because of the danger of breaking the needle. From 10 to 25 c.c. of spinal fluid is allowed to escape through the needle. A portion is sent to the laboratory for Wassermann report and microscopic examination, including cell count. The antitoxin, which need not be diluted but which should be warmed to body temperature, should be allowed to flow in by gravity, a container similar to that described for intravenous injection being used.

5. Necrotic tissue should be cleaned out of any existing wound and the wound treated surgically. If an unhealed wound exists, it should be incised under local anesthesia, explored for foreign bodies, and curetted. Five thousand units of antitoxin are then injected into the tissues about the wound. The wound should be left open and a sterile dry dressing applied.

6. During the second day, and on the third day, 20,000 units are given intravenously, and 20,000 units intraspinally.

7. In order to continue the antitoxic effect, a subcutaneous or intramuscular injection of 10,000 units should be given on the eighth or ninth day.

8. The total dosage used for adults will approximate 125,000 units. Relatively, children will require larger dosage than adults, it being a question of neutralization of toxin and not of body weight.

ANAPHYLAXIS AND OTHER SEQUELAE

It is believed that the danger of serum sickness and anaphylactic shock has been overestimated. The British war statistics showed that 2 per cent. of the patients given intraspinal injections of antitoxin, 6 per cent. of those given intravenous injections, 1.2 per cent. of those given intramuscular injections and 0.2 per cent. of those given subcutaneous injections developed anaphylactic shock. Because of this experience, the British committee for the study of tetanus did not recommend the intravenous method of injection.

Only one instance of shock followed the intravenous injection of antitoxin in the series of forty-nine patients here reported. No mention was made in the record of prior desensitization or other precautions, such as the slow injection of the first 10 c.c., so that comment is difficult. The patient promptly recovered from shock on the injection of 10 minims of epinephrin chlorid solution. From experience during the war service in which thousands of injections of antiserum were given intravenously in the treatment of pneumonia and meningitis, it is believed that the danger of anaphylactic shock in tetanus following intravenous injection of antitoxin is not to be compared with the danger of withholding from patients the benefits possible from its use. Should symptoms of shock occur, an injection of atropin, from $1/100$ to $1/75$ grain, or 15 minims of epinephrin chlorid solution (1:1,000) usually quickly relieves the condition. So-called thermal reactions following the intravenous injection of any serum may occur immediately or within an hour. Such reaction is manifested by a chill and fever, which lasts usually for two or three hours.

Serum rashes may be expected about the eighth or tenth day in approximately 40 to 50 per cent. of those who have received antitoxin. The rash takes the form of an erythematous urticaria. It usually quickly subsides on the intravenous injection of calcium lactate, $3/4$ grain. This may be repeated every six to eight hours, if necessary.

An occasional instance of acute so-called serous meningitis as a manifestation of anaphylactic reaction may follow the injection intravenously of any alien serum. Berghausen[12] has recently reported such an incident. It occurred in two patients of this series. Recovery usually promptly occurs when the cerebrospinal pressure is relieved by lumbar puncture.

CONCLUSIONS

1. The most important factor in the treatment of tetanus is its prevention. It should be the universal rule to give a prophylactic dose of 1,500 units of antitoxin to all patients who have received lacerated or penetrating wounds. If the wound contains necrotic tissue or a suspected foreign body, the dose should be repeated in ten days and subsequently if operation on the wound is contemplated.

2. Treatment of all extensive lacerated wounds surgically by primary excision and primary or delayed suture will greatly reduce the incidence of the disease.

3. The incubation period of the disease is usually about ten days, but may be as short as three days. So-called tardy tetanus may occur months after an injury, if the wound is subsequently reopened.

4. The shorter the incubation period before symptoms, the greater will be the probable mortality. But little difference occurs in mortality whether the wound focus involves the lower or the upper extremity.

5. The type of infection appears to vary in virulence in different years. In four different years between 1916 and 1921, the mortality varied from 14.3 to 71 per cent. in a comparable number of patients each year, and with the same general plan of treatment.

6. When symptoms of the disease have appeared, the attempt should be made to saturate the patient with antitoxin before fixation of toxin has occurred in the nerve cells of the spinal cord. This can best be accomplished by intraspinal and intravenous injections during the first three days of treatment; the total dosage, of which half should be given intraspinally, should approximate 125,000 units.

ABSTRACT OF DISCUSSION

Dr. Abraham Zingher, New York: Dr. Park asked me to draw your attention to the fact that experimentally in guinea-pigs the intraspinal injection of tetanus antitoxin has proved superior to intravenous injection; and the intravenous injection is far superior to the intramuscular injection. For that reason he recommends that a combined intraspinal and intravenous injection be given to flush out any toxin which may be lodged there, or in the tissues themselves. He recommends from three to four injections, one injection to be given every four hours; and with the first lumbar puncture he recommends an intraspinal injection of about 12,000 units of tetanus antitoxin. Those are the main points to which he wanted me to draw your attention. The tetanus antitoxin is sometimes viscid and must be diluted with salt solution so as to diffuse more readily into the spinal canal. I want to call attention to the various forms of tetanus which may occur. You are familiar with the acute form. The irregular and neurologic form may resemble hydrophobia or trismus. Unilateral tetanus of one arm or one leg, or chronic insidious tetanus, may puzzle one in the diagnosis. However, these forms are rather rare, and the prognosis is, as a rule, good.

Dr. Richard H. Miller, Boston: At the Massachusetts General Hospital there have been 116 cases in the last fifty years. The mortality has fallen steadily year by year. The total mortality was 70 per cent. Since 1896 we have had ninety-six cases with a mortality of 67.7 per cent.; since 1910, forty-five cases with a mortality of 57.8 per cent.; since 1916, twenty-five cases, with a mortality of 52 per cent. Of our last five cases, recovery occurred in three. We have had ten cases in which the incubation period was less than ten days. The patients recovered. There is no way of explaining this, except that the infecting organism happened to be of a nonvirulent strain. There is not much difference between Dr. Stone's method of treatment and our own, except that we administer more antitoxin intravenously and less intraspinally. It is our custom, on the entrance of a patient, to give 10,000 units intraspinally and follow this with an intravenous dose of from 30,000 to 40,000 units. We repeat the intraspinal injection every day for three days and the intravenous dose twice a day for four or more days. In the average case in an adult we give at least 200,000 units in all. We also inject a small amount around the wound at the time of entrance. As to the treatment of the wound: It seems to us, as Dr. Stone has said, that it should be cleaned thoroughly and every bit of necrotic tissue removed. He applies a bandage, but we do not. I think that once in a while, if all the necrotic tissues are not removed, a tight bandage may produce a certain degree of anaerobiosis. We leave the wound open to the air and lightly covered with gauze impregnated with hydrogen peroxid.

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[12] Berghausen, Oscar: Serous Meningitis Following Injection of Antitetanic Serum, J. A. M. A. **73**: 1841 (Dec. 13) 1919.

We, too, have used phenobarbital (luminal), and I am convinced that it is doing a certain amount of good. The problem we have to solve is how to get the antitoxin in contact with the toxin already in the tissues of the central nervous system. Almost everybody agrees that the intraspinal method is the one method which should be used. Theoretically, it is hard to explain. The toxin ascends to the central nervous system, the axis cylinder and the perineural lymphatics and becomes impregnated in the cells. If antitoxin is given intraspinally, it comes in contact with the meninges, and, according to English observers, it is absorbed therefrom and enters the circulation. Our problem is to discover the way in which we can make the antitoxin reach the affected parts of the central nervous system in the same way that the toxin does. I have had only one case of anaphylaxis, and that was not marked and ceased when we stopped the injection.

Dr. Alexander Lambert, New York: I was assistant to Dr. Park from 1895 to 1902, and had charge of his tetanus work. I saw between eighty and ninety cases of tetanus in civil life. Dr. Stone did not stress the necessity of getting these patients to quiet down so that the tetanus antitoxin could take effect. I think the phenobarbital had something to do with that. The idea of stuffing the ears with cotton is good. The first muscle in the body affected by the trismus is the rectus abdominis, and in my experience it is the last to let up. Unless you are looking for this rectus abdominis rigidity you will be deceived, and you will lose many precious hours.

Dr. A. A. Herold, Shreveport, La.: I have had fully as good results by eliminating intraspinal treatment. How can the tetanus antitoxin reach the central nervous system when the tetanus toxin is bound up in the axis cylinders? The more rational plan is to give immense doses intravenously and subcutaneously. The intraspinal treatment does harm by putting poison in the intra-arachnoid spaces. My only excuse for the intraspinal treatment is to get relief of pressure, and in that way enable the intravenous treatment to reach the poisoned cells, and then if it is a severe case to try the intraspinal injection of magnesium sulphate, as advocated by Meltzer. In the very virulent cases one cannot expect results, no matter what treatment one employs. To my mind, giving tetanus antitoxin intraspinally is as bad treatment as giving castor oil hypodermically.

Dr. W. T. Coughlin, St. Louis: I have some very unpleasant recollections about tetanus. We gained some unpleasant notoriety in this city twenty years ago through the contamination of the antidiphtheritic serum, and in those cases no germs were introduced. When the patient comes to the surgeon, as a rule, the patient has had as much tetanus antitoxin as he is going to get, especially if he is treated by a surgeon. The wound is excised and then the only possibility of the introduction of further poison is from that which may be present in the track between the wound and the central nervous system. If that is true, then it behooves us to get the antitoxin into the patient's system as soon as possible. In the last three years, at the city hospitals, we have been giving large doses, and I do not think we ought to be afraid to give large doses. I have not seen anything happen which I could in any way attribute to the size of the dose which the patient received. We have had much better success since we began to use the large doses. A child of 15 years is given 50,000 units in four different ways, intraspinally, subcutaneously, intramuscularly and intravenously. Usually, that daily dosage is divided into about four doses so that a dose is given every six hours; first, intraspinally, and then intravenously. On the second day it is increased by half until the dose climbs up pretty high, and I think that this ought to be continued until the patient is dead or well. In the cases in which we have been able to use the most serum, the results have been most gratifying; but I do not see why we should wait three or four days if the patient is not worse; if he is not any better, we ought to give larger doses of antitoxin. There is a difference in virulence of the organism and in the personnel of those attending the patient, and in their manner of dealing with the patient, which must be considered. I would not insist on giving antitoxin intraspinally. I think it will get to the central nervous system through the blood channels just as well as by injecting it into the subdural space.

Dr. Mary Freeman, Perrine, Fla.: I have had three cases of tetanus. The first I saw on the eighth day. A boy ran a sliver into his toe. I was called to treat him for throat trouble, and found rigidity of the jaw. I was unable to get his mouth open. I sent him to the hospital 17 miles away, but he died the following day. The second case was a child of 3 who had spells. I suspected tetanus and on inquiry learned that he had stepped on a nail two days before. I took him immediately to a hospital 20 miles away. He recovered. His little sister stepped on a nail two days later. They brought her in on the fifth day. She was very nervous. The question arose whether it was tetanus. I found the knee jerk exaggerated in the knee on the same side as the foot into which she had run the nail. She recovered.

Dr. Willard J. Stone, Pasadena, Calif.: In connection with chronic tetanus, which is not uncommon, and which is characterized by twitching of the muscles, usually of the extremities, it is worth while to remember at this time, when we are seeing patients with encephalitis, that myoclonic twitchings of the muscles of the abdomen or limbs and extremities may occur in these cases. Many of those patients are conscious just as the tetanus patients are conscious, and it may require great discretion to make the proper diagnosis and inaugurate the proper treatment. In connection with the dosage of antitoxin for children, as compared with adults, it is not a question of body weight but of neutralization of the toxin. Consequently, children should have relatively larger doses of the antitoxin than adults. In connection with the intraspinal treatment, Dr. Park's experimental work showed, I think, quite conclusively, that animals recovered much more promptly after intraspinal injection than by any other method. At the beginning of the war the British War Office appointed a commission for the study of tetanus. Professor Cherrington, a well known physiologist of Oxford, was a member of the commission. He completely confirmed the work of Dr. Park. After saturating the patient with antitoxin, there seems to be little advantage in carrying on the treatment with large doses after the fourth day. We should urge a prophylactic injection of tetanus antitoxin for every wound, however trivial, which comes in contact with street dirt.

Another Natural Enemy of the Mosquito.—Two Lyons scientists, Riel and Bonamour, have recently rediscovered that a certain insect of the reduvioidea type feeds avidly on mosquitoes, darting to capture them on walls and ceilings. The insect, *Emesodema domestica*, is common in southern France, and the scientists are warning people not to kill them as they will aid in extermination of mosquitoes. Scopoli in 1788 mentioned that these insects fed on mosquitoes. The common name for the bug in France is the *ploière*.

RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN

IN THE PUBLIC SCHOOLS OF NEW YORK CITY (MANHATTAN AND THE BRONX) *

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In a previous communication [1] in The Journal, we reported the results of the Schick tests which had been made between February and June, 1921, in forty-four public schools in the boroughs of Manhattan and the Bronx. A total of more than 52,000 schoolchildren had been tested, and those giving positive reactions injected with two doses, each 1.5 c.c. of toxin-antitoxin.[2]

The results of the Schick test are interesting in showing great variations in susceptibility to diphtheria among the children of different schools. We found that the children from the homes of the more well-to-do gave a much greater percentage of susceptible individuals than the children from the homes of the poorer classes of the population. In the schools located in the better sections of the city and attended largely by children of the first group, the positive reactors ranged as high as from 50 to 70 per cent.; while in other schools located in the more crowded sections only from 16 to 25 per cent. gave a positive Schick reaction. Segregation and relative isolation of the children of the more well-to-do, crowding and frequent exposure to infection with the diphtheria bacillus of the children of the poorer classes offered the most probable explanation for these variations in susceptibility.

The hereditary family factor and the racial factor, although less important, also seem to have a bearing on the results. Thus, we found that a group of children belonging to one family often gave entirely different Schick reactions from a group of children belonging to another family but living under the same conditions and surroundings. In some of these families the tendency to a negative Schick reaction showed itself quite early in life. It was seen in the younger children as soon as they became 2 or 3 years of age, while all the older children in the same families already gave a negative reaction. On the other hand, there were families in which all the children, including the older ones, showed a well pronounced positive reaction.

The racial influence was seen in the relatively high proportion of positive Schick reactions among the colored children and the unusually low proportion of positive reactions among the children of Italian parents.

It will be interesting now to see what contrast is found between the children of the more well-to-do and those of the poorer classes in their production of an active antitoxic immunity in response to the injections of toxin-antitoxin.

MIXTURES OF TOXIN-ANTITOXIN

From the very beginning of this work, Dr. Park and I have realized that the composition and the character of the toxin-antitoxin mixture play an important part in the efficiency of the immunity response. Two standards can be established for these mixtures: (*a*) a standard of safety, and (*b*) a standard of efficiency.

The standard of safety is complied with when 5 c.c. of a mixture of toxin-antitoxin injected into a guinea-pig produces a pronounced local induration and late paralysis in the animal, but not acute death from diphtheria toxemia. Such a mixture was used as a rule in our work in the public schools. In some of the schools, however, we used a slightly more toxic mixture, which produced paralysis in the guinea-pig in doses of 3 c.c., 2 c.c. and even 1 c.c. Under no condition, however, was a mixture given which produced acute death of the guinea-pig in doses of even 5 c.c.

The standard of efficiency is one which is much more difficult to establish. We learned in our earliest work that mixtures of toxin-antitoxin that were overneutralized or just neutral were not as effective in producing active immunity as the slightly toxic mixtures. The margin of toxicity in a mixture that would be still safe for use in human beings remained to be investigated. A second problem that called for study was the question whether a mixture made of a more potent toxin and containing from five to six L + doses of toxin to each cubic centimeter was more effective in its immunizing properties than the one containing three L + doses of toxin to each cubic centimeter, the two mixtures having the same free margin of toxicity. The mixture with 3 L + doses and 3.5 units of antitoxin has been used extensively up to the present time. Dr. Banzhaf of the Research Laboratory prepared at the suggestion of Dr. Park several mixtures of toxin-antitoxin of slightly varying toxicity, containing from three to five L + doses of toxin to each cubic centimeter. These mixtures were used in the different schools. For a better understanding of the results obtained in the schools, Table 1 is presented.

Table 1 gives the mixtures used, the number of L + doses per cubic centimeter, and the toxicity as shown in the guinea-pig test. The schools in which each mixture was used are indicated, and comment is made whether each mixture was injected as originally prepared or whether it had to be adjusted subsequently. Some of the mixtures were either overneutralized or too toxic, and consequently more toxin or more antitoxin had to be added.

Mixtures 23, 24, 35 and 36 contained in each cubic centimeter three L + doses of toxin and 3½ units of antitoxin. Mixtures 37 and 38 contained in each cubic centimeter five L + doses of toxin and about 6 units of antitoxin. Notwithstanding the different proportions, it will be seen that there was quite a strong similarity in the toxicity of the different mixtures, as shown in their paralyzing effect on the guinea-pig. Mixtures 36 and 38 were slightly more toxic than the others.

In our previous work in various institutions we had found that certain mixtures were very effective in producing an active antitoxin immunity in a high percentage of injected individuals. Such mixtures were in all tests quite similar in toxicity and L + strength to other mixtures, which gave a much poorer immunity response. Many confusing questions arose as to the reasons for these variations in immunizing efficiency of different mixtures of toxin-antitoxin. The experience, therefore, gained in the active immunization of the large number of public school children will be of value in interpreting and answering some of these very interesting and important questions.

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* Read before the Section on Diseases of Children at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Zingher, Abraham: Diphtheria Prevention Work in the Public Schools of New York City, J. A. M. A. **77**: 835 (Sept. 10) 1921.

[2] The Schick work in the schools was carried out under the general direction of Dr. William H. Park and in cooperation with Drs. J. S. Baker, Jacob Sobel and J. L. Blumenthal of the Bureau of Child Hygiene, and Dr. Louis I. Harris of the Bureau of Preventable Diseases of the Department of Health. Dr. I. H. Goldberger, of the Bureau of Educational Hygiene of the Department of Education, was largely instrumental in obtaining permission for us to do the work in the different schools. I also wish to acknowledge the valuable assistance of my co-workers, Drs. I. O. Bloom, Anna Weintraub, Thomas E. Cooney. M. Harrison, S. Schwadron, Mr. William Abrams and Miss Leah Alper.

NUMBER OF DOSES AND AMOUNT OF TOXIN-ANTITOXIN

The children received, as a rule, two doses, each 1.5 c.c., at intervals of seven days. We wished to see whether two doses of 1.5 c.c. would be the equivalent of three doses of 1 c.c. formerly given. If one injection of toxin-antitoxin could be eliminated, the work in the schools would be greatly facilitated. The results given in the following tables show, however, that two doses of 1.5 c.c. are not as effective as three doses of 1 c.c. Three doses, therefore, should be the minimum number of injections in actively immunizing an individual with toxin-antitoxin.

TABLE 1.—RESULTS OF TESTS IN GUINEA-PIGS WITH MIXTURES OF TOXIN-ANTITOXIN

Mixture T-A	Composition of Mixture	Date of Test	Amount Injected, C.c.	Result in Guinea-Pig	Public Schools in Which Mixture Was Used	Comment
23	In each c.c., 3 L+ doses toxin and 3½ units antitoxin	1/14/21	2.0	Induration; paralysis in 20 days	101, 57, 43M, 186, 132	Mixture originally prepared was too toxic; additional amounts of antitoxin had to be added 3 times to reduce the toxicity to a safe point
		1/14/21	3.0	Induration; paralysis in 18 days		
		1/10/21	5.0	Induration; paralysis in 21 days		
24	In each c.c., 3 L+ doses toxin and 3½ units antitoxin	1/20/21	2.0	Induration; paralysis in 19 days	90	Mixture used as originally prepared; no further addition of toxin or of antitoxin needed
		1/20/21	3.0	Induration; paralysis in 18 days		
		1/20/21	4.0	Induration; paralysis in 20 days		
		3/ 1/20	5.0	Induration; paralysis in 20 days		
		5/ 6/20	5.0	Induration; paralysis in 21 days		
		8/ 7/20	5.0	Induration; paralysis in 21 days		
35	In each c.c., 3 L+ doses toxin and 3½ units antitoxin	1/14/21	2.0	Induration; paralysis in 19 days	168, 20, 169, 43Br., 46, 15, 157	Mixture originally prepared was slightly overneutralized; small amount of toxin had to be added to bring it up to suitable toxicity (12/15/20)
		1/14/21	3.0	Induration; paralysis in 19 days		
		1/14/21	4.0	Induration; paralysis in 19 days		
		1/14/21	5.0	Induration; paralysis in 18 days		
36	In each c.c., 3 L+ doses toxin and 3½ units antitoxin	3/17/21	1.0	Induration; paralysis in 21 days	102, 172, 78, 83, 39G., 39B., 64, 40, 171, 61, 84, 85, 96, 89, 62	Mixture originally prepared was overneutralized; additional amounts of toxin added at 3 different times between 2/1 and 3/8/21
		5/29/21	3.0	Induration; paralysis in 18 days		
		3/10/21	5.0	Died in 22 days		
37	In each c.c., 5 L+ doses toxin and 6 units antitoxin	3/10/21	5.0	Induration; paralysis in 19 days	103	Mixture originally prepared was too toxic; more antitoxin added 3/10/21
		3/10/21	5.0	Induration; paralysis in 21 days		
38	In each c.c., 5 L+ doses toxin and 6 units antitoxin	4/ 4/21	0.5	Induration; paralysis in 20 days	19, 188G., 188B., 159, 29, 42Br., 54Br., 54M., 77, 52Br., 5, 158, 11Br., 68	Mixture originally prepared was too toxic; additional antitoxin added 3/30 and 4/2/21, then refiltered through Berkefeld filter
		4/ 4/21	2.0	Induration; paralysis in 20 days		

THE NECESSITY OF A CONTROL IN THE SCHICK TEST

We were greatly impressed in this work by the fact that the children who had the most pronounced local and constitutional symptoms after injections of toxin-antitoxin were the ones who had given a positive-combined Schick reaction. The number of children showing such severe reactions would have been multiplied several times if we had not previously carefully excluded those who had a negative pseudoreaction. We were able to do this by giving each schoolchild a control test with heated toxin. In some of the schools, fully 25 to 30 per cent. of the children gave a negative pseudoreaction. Many of these would have been considered positive or doubtful without a control test, and would have shown the usual severe local and constitutional symptoms after the injections of toxin-antitoxin.

Children under the age of 5 years seldom have pronounced negative pseudoreactions, but those of school age and especially the elder among these children frequently do so. A negative pseudoreaction can be interpreted occasionally with fair accuracy without a control test. There will always remain some doubt, however, in the mind of the observer as to the absolute certainty of the interpretation of such a reaction unless he makes a control and is able to compare the reactions on the two forearms.

The necessity of careful and accurate dilution of the unheated bulk toxin for the Schick test and of the heated toxin for the control test has been emphasized in a previous publication.[3]

TRANSIENT AND PERSISTENT PSEUDOREACTIONS

We had noted in our work that a few of the schoolchildren who had given a simple positive Schick test showed a moderately pronounced local reaction after the injections of toxin-antitoxin. The question, therefore, presented itself whether these children might have had a pseudo-element combined with their positive reactions that was transient, disappeared after forty-eight hours and was not noted in the final reading, which was made from the fourth to the seventh day after the test. A detailed study of the Schick test and of the control test was therefore undertaken in one of the schools. Comparisons were made between the various reactions of the Schick test and the severity of the local and constitutional symptoms following the injections of toxin-antitoxin.

The Schick test with the unheated toxin was made on the right forearm, and the control test with the heated toxin on the left forearm. Observations of the reactions were made at the end of twenty-four hours and again at the end of five days to see how many children had a transient and how many a more persistent pseudo-element in their reactions.

In the preliminary Schick test readings at the end of twenty-four hours the reactions were interpreted temporarily as follows: (*a*) A slight or moderate redness on the right or test forearm, with no redness on the control forearm, was considered a positive reaction; (*b*) no redness on either forearm, a negative reaction; (*c*) an area of redness on both forearms, which was equal in size and similar in appearance, was considered a negative pseudoreaction; (*d*) an area of redness on both forearms, but unequal in size, the one on the right side being larger, said to be a positive combined reaction.

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[3] Zingher, Abraham: The Schick Test: Standardization of Diphtheria Toxin for the Test and of Heated Diphtheria Toxin for the Control; Methods of Diluting the Toxin, J. A. M. A. **78**: 490-493 (Feb. 18) 1922.

In the final reading of the Schick tests at the end of five days, the reactions were read as follows: positive, if there were a definite, well-pronounced red area on the right or test forearm and no redness or pigmentation on the left or control forearm; negative pseudo, if here were a fading brownish or reddish brown area of igmentation, not sharply circumscribed as a rule, but qual in size and similar in appearance on the two orearms; positive combined, if there were a typical ositive reaction on the right or test forearm, and a aded pseudo-like reaction on the left or control orearm.

TABLE 2.—EARLY AND LATE SCHICK TEST READINGS AT PUBLIC SCHOOL 19, MANHATTAN

	Schick Test Readings at				
	24 Hours	5 Days	Number	Total	Per Cent. of Total Tested
Group 1. Immunes:					
A. With no pseudoreaction	Negative	Negative	57	57	14.4
B. With transient pseudoreaction...............	Negative pseudo	Negative	73	75	19.0
	Positive combined	Negative	2		
C. With persistent pseudoreaction...............	Negative pseudo	Negative pseudo	129	138	34.9
	Positive combined	Negative pseudo	9		
Group 2. Nonimmunes:					
A. With no pseudoreaction	Positive	Positive	67	80	20.0
	Negative	Positive	13		
B. With transient pseudoreaction...............	Negative pseudo	Positive	16	35	8.9
	Positive combined	Positive	19		
C. With persistent pseudoreaction...............	Negative pseudo	Positive combined	6	11	2.8
	Positive combined	Positive combined	5		
Total tested...				396	

Table 2 shows the foregoing children divided into vo groups. In Group 1, immunes, under A, it will be en that fifty-seven out of 396 children, or 14.4 per nt., had a negative Schick reaction at the end of venty-four hours, which persisted as negative on the fth day.

B. Seventy-five children, or 19 per cent., had a eudo-element in their reactions which was noticeable the twenty-four hour reading, but had disappeared mpletely on the fifth day, so that the reactions were ad as simple negative.

C. One hundred and thirty-eight children, or 34.9 r cent., had a pseudoreaction at the end of twentyur hours, which persisted on the fifth day, the reacns being read as negative pseudo.

In Group 2, nonimmunes, the table shows under A, ghty children, or 20 per cent., who had either a sitive or a negative reaction at the end of twentyur hours, which appeared positive on the fifth day. is important to note in this group that in twelve of children the positive reaction had not yet appeared the end of twenty-four hours. These slowly develing positive Schick reactions are an additional indiion not to make a final reading of the tests before fourth or fifth day.

B. Thirty-five children, or 8.9 per cent., had a nsient pseudo-element in their reactions, which was iceable at the end of twenty-four hours, but disapred on the fifth day, so that the reactions were read positive.

Eleven children, or 2.8 per cent., had a pseudoction at the end of twenty-four hours, which persisted on the fifth day, the reactions being read as positive combined.

It should be stated that the transient pseudoreactions, which were seen at the end of twenty-four hours, but had faded completely on the fifth day, appeared at the earlier reading only as slight areas of redness with little if any induration. Such transient pseudoreactions indicate a slight or moderate susceptibility to the proteins of the toxin-antitoxin mixture, while the persistent pseudoreactions indicate a much more marked susceptibility to these proteins. These facts are brought out in Table 3.

Table 3 shows the results of a study made on four groups of children of the relation of toxin-antitoxin injections and the pseudo-element in the Schick test. The groups consisted of: (*a*) children showing no pseudo-element; (*b*) a transient pseudo-element; (*c*) a persistent pseudo-element, and (*d*) a group in which no preliminary twenty-four hour reading was made.

The local reaction at the site of the injection of toxin-antitoxin was classified according to its intensity as slight, moderate or marked. A reaction was considered slight, if it showed only a small area of redness and slight infiltration varying in size from a fifty cent piece to a silver dollar; moderate, if it showed a larger area of redness with more induration and tenderness, and marked, if it showed an extensive and diffuse area of redness and infiltration involving one half or more of the arm with slight swelling and tenderness of the axillary glands. The children having marked reactions complained, as a rule, of pain and soreness in the arm.

TABLE 3.—REACTIONS AFTER INJECTIONS OF DIPHTHERIA TOXIN-ANTITOXIN AT PUBLIC SCHOOL 19, MANHATTAN

Schick Test Reading at		Reactions After Toxin-Antitoxin				Per Cent.		
24 Hours	5 Days	Slight	Moderate	Marked	Total	Slight	Moderate	Marked
Group 1. With No Pseudoreaction								
Positive	Positive	61	6	0	67			
Negative	Positive	12	1	0	13			
Total............		73	7	0	80	93.6	6.4	0
Total per cent. moderate and marked reactions after toxin-antitoxin injections							6.4	
Group 2. With Transient Pseudoreaction								
Negative pseudo	Positive	11	4	1	16			
Positive combined	Positive	11	8	0	19			
Total............		22	12	1	35	62.8	34.2	3.0
Total per cent. moderate and marked reactions after toxin-antitoxin injections							37.2	
Group 3. With Persistent Pseudoreaction								
Negative pseudo	Positive combined	1	3	2	6			
Positive combined	Positive combined	0	1	4	5			
Total............		1	4	6	11	9.2	36.3	54.5
Total per cent. moderate and marked reactions after toxin-antitoxin injections							90.8	
Group 4. With No 24 Hour Reading								
(a) Not read	Positive	28	0	0	28	100.0		
(b) Not read	Positive combined	0	4	2	6	.....	66.6	33.3
Total per cent. moderate and marked reactions in positive combined after toxin-antitoxin injections							100.0	

It is interesting to note in Group 1, in which the pseudo-element was lacking in the Schick reaction, that seventy-three out of eighty, or 93.6 per cent., had a slight toxin-antitoxin reaction, only seven, or 6.4 per cent., a moderate reaction, and none a severe reaction.

In Group 2, in which there was a transient pseudo-element in the Schick reaction, 34.2 per cent. gave a moderate and 3 per cent. a marked toxin-antitoxin reaction, a total of 37.2 per cent.

In Group 3, in which there was a persistent pseudo-element in the Schick reaction, fully 36.3 per cent. gave moderate, and 54.5 per cent. marked toxin-antitoxin reactions, a total of 90.8 per cent. Only one child in this group had a slight toxin-antitoxin reaction.

In Group 4, no preliminary reading of the Schick reactions was made at the end of twenty-four hours, and only a final reading on the fifth day. All the twenty-eight children whose tests were read simply as positive gave only a slight reaction, while each of the six children whose tests were read as positive combined gave moderate or marked reactions to the injections of toxin-antitoxin.

The following conclusions can be drawn from the results given in the two tables:

1. A final reading of the Schick tests should not be made before the fourth or fifth day. The reactions will then be read with much greater accuracy. The slowly appearing positive reactions will be clearly seen; the negative pseudoreactions will have faded to a large extent, and the small number of positive combined reactions will be more clearly differentiated from the negative pseudoreactions.

2. Many of the children showing negative pseudoreactions who might be considered as having a positive or doubtful Schick reaction without a control test and injected with toxin-antitoxin will be eliminated from receiving the injections if a control test is made at the same time as the Schick test.

3. For all practical purposes, the single final reading of the Schick test after the fourth day is sufficient to indicate (*a*) those children who will have only a slight reaction (positive Schick reactors) or (*b*) those who will have a more pronounced reaction (positive combined Schick reactors) after the injection of toxin-antitoxin.

4. For the accurate reading of the reactions, it is necessary that the control test be considered as an integral part of the Schick test, without which the test is incomplete. This is especially true for Schick tests made in children over 5 years of age.

SCHICK RETESTS TO DETERMINE EFFICIENCY OF TOXIN-ANTITOXIN IMMUNIZATION

The children of twenty-two schools in which Mixtures 23, 35, 36 and 37 were used were retested in the spring from two to three months after the injections of toxin-antitoxin. The children of Public School 90, in which we gave three doses of Mixture 24, were retested after five months. The remaining nine schools in which Mixture 36 was used, and all the schools immunized with Mixture 38, were retested in the fall from four to seven months after the immunizing injections.

Mixture 38 was used for reinjecting all the children who had not become immune in the twenty-three schools retested in May and June. Fifteen of these schools were retested a second time in the fall at intervals of from seven to nine and one-half months after the first series of toxin-antitoxin injections.

RESULTS OF FIRST SCHICK RETEST

Tables 4 and 5 give the immunity results obtained in the different schools. The tables also show the number of children originally tested in each school and the percentage of positive Schick reactors.

Table 4 shows the public schools retested in the spring from two to three months after the injections of toxin-antitoxin.

Table 5 gives the schools retested in the fall. Group 7 in this table is an exception, in that it was originally tested in December, 1920, and retested after five months in May, 1921.

TABLE 4.—RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN: FIRST SERIES OF SCHICK RETESTS AFTER FROM TWO TO THREE MONTHS

		Original Schick Test		First Schick Test		
Public School	Location	Total Tested	Per Cent. Positive	Months After Tox.-Ant.	Total Re-tested	Per Cent. Negative
Group 1. Toxin-Antitoxin Mixture 23; Two Doses, 1.5 C.c. Each						
101	111th Street and Lexington Ave.	968	**29.7**	3.0	152	**79.6**
57	115th Street and Third Avenue	1,368	**25.9**	3.0	254	**64.5**
43 M.	129th Street and Amsterdam Ave.	763	**37.6**	3.0	183	**43.8**
186	145th Street and Broadway	824	**55.8**	3.0	291	**29.9**
132	182d Street and Wadsworth Ave.	708	**50.2**	2.5	213	**27.7**
Group 2. Toxin-Antitoxin Mixture 35; Two Doses, 1.5 C.c. Each						
168	104th Street and Second Avenue	1,569	**17.7**	2.5	213	**52.7**
20	Rivington and Eldridge Streets	1,540	**20.8**	2.5	217	**52.0**
43 Br.	135th Street and Brown Place	1,966	**26.5**	2.5	397	**35.2**
15	Fourth Street and Avenue D	1,192	**29.0**	2.5	266	**30.0**
169	169th Street and Audubon Avenue	825	**45.9**	2.5	269	**25.2**
46	156th Street and St. Nicholas Ave.	900	**55.3**	2.5	302	**25.0**
157	126th Street and St. Nicholas Ave.	961	**38.3**	2.5	253	**21.3**
Group 3. Toxin-Antitoxin Mixture 36; Two Doses, 1.5 C.c. Each						
102	113th Street and Second Avenue	1,687	**17.5**	2.5	187	**63.6**
172	108th Street and Second Avenue	1,540	**16.4**	2.5	197	**52.8**
78	119th Street and Pleasant Ave.	1,987	**22.1**	2.5	249	**49.4**
83	109th Street and Third Avenue	2,349	**13.6**	2.5	204	**42.6**
39 G.	125th Street and Second Avenue	931	**26.1**	2.5	167	**40.7**
39 B.	126th Street and Second Avenue	847	**18.5**	2.5	111	**37.8**
64	9th Street and Avenue B	1,035	**19.0**	2.5	115	**32.0**
40 Br.	Prospect Ave..and Jennings Street	1,895	**41.8**	2.5	591	**27.4**
171*	103d Street and Madison Avenue	1,866	**22.2**	2.5	290	**24.5**
Group 4. Toxin-Antitoxin Mixture 37; Two Doses, 1.5 C.c. Each						
103	119th Street and Madison Avenue	1,363	**28.4**	2.5	298	**50.0**

* In this school, 79 per cent. of children tested were over 10 years of age. This accounts for the low percentage of positive Schick reactions in the original test.

A detailed study of these two tables shows the following points of interest:

1. The same mixture of toxin-antitoxin showed a marked variation in its immunizing powers in the different schools in which it was used. This variation ranged from 20 to 60 or 70 per cent. of successfully immunized children.

We were at first considerably surprised by the great difference in the immunity response noted in different schools with the same mixture of toxin-antitoxin. Since each mixture showed such variations within its group of schools, we finally concluded that the difference could not be ascribed to the individual mixture, but had to be attributed rather to variations in the groups of injected children. We were led to this conclusion by a closer study of the individual schools in each group. We compared the immunity results

btained with the percentage of susceptible children
ound at the original test in the same school, and were
npressed by a remarkable relation between the figures
n the two percentage columns. Table 4 shows espe-
ially well the *inverse ratio* between the percentage
f susceptible children in a school and the per-
entage of children who became immune after the first
eries of toxin-antitoxin injections. The higher the
ercentage of positive Schick reactions in a school, the
oorer, as a rule, was the response to the injections of
xin-antitoxin, and the lower the percentage of nega-
ive Schick retests. The lower the percentage of
ositive reactions in a school the better the response to
e toxin-antitoxin injections and the higher the per-
entage of negative Schick retests.

One conclusion seems to be justified from these
sults. The schools in which a large proportion of the
ildren are "naturally" immune, schools located in the
owded sections of the city, have in their positively
acting children individuals who have already been
posed by frequent contact to infection with the diph-
eria bacillus. Although these children have not yet
quired a "natural" antitoxic immunity, yet their cells
e already been partly stimulated by these exposures.
en the injections of toxin-antitoxin are given, these
dren respond quite readily to the immunizing
ulse and produce a sufficient amount of antitoxin to
v a negative Schick retest. On the other hand, in
ols in which there is only a small proportion of "naturally" immune and a correspondingly high proportion of susceptible children, schools attended in cities like New York by the children of the more well-to-do classes, there will be found a large group of positively reacting children who have been very little exposed by contact and crowding to infection with the diphtheria bacillus. The cells of such children have not yet received a sufficient primary stimulation. When injected with toxin-antitoxin, these children do not respond readily to the immunizing impulse, and only a small proportion produce a sufficient amount of antitoxin to give a negative Schick retest.

BLE 5.—RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN: FIRST SERIES OF SCHICK RETESTS AFTER FROM FOUR TO SEVEN MONTHS

ublic chool	Location	Original Schick Test		First Schick Retest		
		Total Tested	Per Cent. Positive	Months After Tox.-Ant.	Total Re-tested	Per Cent. Negative
	Group 5. Toxin-Antitoxin Mixture 36; Two Doses, 1.5 C.c. Each					
14	27th Street and Third Avenue	1,242	34.6	5.5	245	60.8
61	12th Street and Avenue B	1,387	34.7	5.5	256	60.1
84	50th Street and Tenth Avenue	612	36.6	5.0	110	59.0
85	115th Street and First Avenue	971	25.9	5.0	108	55.5
96	81st Street and Avenue A	1,065	32.5	5.0	195	37.4
89*	115th Street and Lenox Avenue	865	47.9	5.0	261	33.3
	Group 6. Toxin-Antitoxin Mixture 38; Two Doses, 1.5 C.c. Each					
19	14th Street and First Avenue	1,485	34.1	5.0	280	65.0
88 B.	Houston and Lewis Streets	1,460	22.3	4.0	238	58.0
88 G.	Houston and Lewis Streets	1,216	28.5	4.5	251	55.3
42 Br.	Washington Ave. and Claremont Pkwy.	1,284	24.1	5.0	208	51.0
59†	119th Street and Third Avenue	1,301	19.6	7.0	144	50.7
54 Br.	Intervale Ave. and Freeman Street	1,243	38.3	7.0	262	47.0
29	16 Albany Street	258	35.2	5.0	52	46.0
M.	104th Street and Amsterdam Ave.	433	46.6	5.5	115	41.7
7	85th Street and First Avenue	667	62.9	5.0	197	37.0
2 Br.	Kelly Street and Avenue St. John	1,583	38.0	5.0	357	28.2
5*	140th Street and Edgecombe Ave.	1,222	45.9	5.5	215	27.9
1 Br.	169th Street and Ogden Avenue	297	67.0	5.5	106	25.4
8*	129th Street and Lenox Avenue	896	47.2	5.5	225	22.2
	Group 7. Toxin-Antitoxin Mixture 24; Two Doses, 1.5 C.c. Each					
0	148th Street and Eighth Avenue	953	46.5	5.0	160	87.5

A large proportion of children attending these schools are colored.
In this school, 88 per cent. of children tested were over 10 years of
This accounts for the low percentage of positive Schick reactions
e original test.

TABLE 6.—THE SCHICK TEST AND TOXIN-ANTITOXIN IMMUNIZATION IN VARIOUS INSTITUTIONS

Institution	Original Schick Test			Toxin-Antitoxin		Schick Retest			
	Number of Children Tested	Schick Positive	Per Cent. Positive	No. of Doses	Amt., C.c.	Mos. After Toxin-Ant.	Children Re-tested	Schick Negative	Per Cent. Negative
St. Agnes.......	627	74	11.8	1-2	1.0	7	64	63	98.5
St. Dominic.....	760	110	14.4	2-3	1.0	12	83	82	98.5
N. Y. Juvenile Asylum.......	558	152	27.2	3	1.0	6	121	118	97.5
St. Joseph's Home.........	1,030	126	12.2	2-3	1.0	10	55	55	100.0
Hebrew Orphan Asylum.......	1,169	169	14.4	1	1.0	8	117	95	81.2

The conclusions from these observations are emphasized and confirmed by the results obtained with toxin-antitoxin immunization in different institutions as seen in Table 6. In these places we found that only a relatively small percentage of the children gave a positive Schick reaction at the original test, the large majority of the children being immune. In some institutions we found as few as from 5 to 10 per cent. who showed a positive reaction. A high proportion of negative reactions was especially noticeable in children who had been in the institution for more than six months. The constant crowding of the children in such institutions would appear to explain these findings. When the positive reactors were injected with toxin-antitoxin, fully 85 to 100 per cent. of the nonimmunes became actively immunized after the first series of injections, and gave a negative Schick retest. It is very likely that the tissue cells of the positively reacting children had previously been partly stimulated by exposure to infection with the diphtheria bacillus. As a result, a large majority promptly became immune after injections of toxin-antitoxin.

RESULTS OF SECOND SCHICK RETEST

Table 7 shows the results of a second Schick retest in the schools that had been previously retested in the spring. The children who gave at that time a positive reaction had received a second series of toxin-antitoxin injections.

1. It is interesting to note in this table that after the stimulating effect of a first series of toxin-antitoxin injections, the ratio of immunity response to the second series of injections does not follow any more the above mentioned *inverse ratio* between original susceptibility of the children in a school and the percentage of successfully immunized children. The first series of injections had stimulated the cells of all the children, though not sufficiently in some to produce the necessary amount of antitoxin for a negative Schick retest. The response of these children now to the second series of toxin-antitoxin injections varied somewhat in different schools, but the percentage of successfully immunized children was quite high in all the schools.

There were some children in whom a positive Schick reaction persisted after the second series of toxin-antitoxin injections. These were rather few in number, and were given a third series of two or three injections of toxin-antitoxin. It is important to realize that one occasionally encounters a child that is resistant to active immunization and produces very little antitoxin even after repeated series of toxin-antitoxin injections.

2. The percentage of children who became immune after three injections of toxin-antitoxin was higher than among the children who had received two injections. As indicated above, however, more than one factor enters into the immunizing efficiency of a first series of toxin-antitoxin injections. In the work we are doing in the schools at present, we give as a routine three injections of toxin-antitoxin. The total number of children who have become immune after from two to four injections of toxin-antitoxin in the different schools varies from 70 to 93 per cent.

TABLE 7.—RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN: FIRST AND SECOND SERIES OF SCHICK RETESTS AFTER FROM SEVEN TO NINE AND ONE HALF MONTHS

		Original Schick Test		First Series				Second Series				Total Per Cent. Schick Negative After 2-4 T.-A. Injections
				Tox.-Ant.; 2 Doses; Amount, 1.5 C.c.: Mixture	First Schick Retest			Tox.-Ant. Mix. 38; Amt., 1.5 C.c.: Number of Doses	Second Schick Retest			
Public School	Location	Total Tested	Per Cent. Positive		Months After 1st T.-A.	Total Retested	Per Cent. Negative		Months After 1st T.-A.	Total Retested	Per Cent. Negative	
46	156th St. and St. Nicholas Ave.	900	55.3	35	2.5 8.5	302 74	25.0 48.6	Two One	8.5 8.5	113 31	63.7 64.5	70.0
132	182d St. and Wadsworth Ave.	708	50.2	23	2.5 8.5	213 40	27.7 60.0	Two One	9.5 9.5	88 28	76.1 78.5	80.0
169	169th St. and Audubon Ave.	825	45.9	35	2.5 8.0	269 56	25.2 53.6	Two One	8.0 8.0	82 57	75.6 72.0	76.5
43 Br.	135th St. and Brown Place	1,966	26.5	35	2.5 7.0	397 58	35.2 53.4	Two One	7.0 7.0	161 20	78.8 55.0	81.5
57	115th St. and Third Ave.	1,368	25.9	23	3.0 7.0	254 51	64.5 72.5	Two One	7.0 7.0	55 8	78.2 75.0	90.0
168	104th St. and Second Ave.	1,569	17.7	35	2.5 7.0	213 26	52.7 76.9	Two One	7.0 7.0	41 21	87.8 85.7	93.1
186	145th St. and Broadway	824	55.8	23	2.5 8.0	291 37	29.7 75.7	One	8.0	60	83.3	89.5
40 Br.	Prospect Ave. and Ritter Place	1,895	41.8	36	2.0 7.0	591 111	27.4 46.0	One	7.0	214	61.7	71.7
103	119th St. and Madison Ave.	1,363	28.4	37	2.5 9.0	298 69	50.0 69.5	One	9.0	83	68.6	84.3
39 G.	125th St. and Second Ave.	931	26.1	36	2.5 9.0	167 42	40.7 64.3	One	9.0	69	69.5	80.0
78	119th St. and Pleasant Ave.	1,987	22.1	36	2.5 8.0	249 82	50.0 62.2	One	8.0	70	75.7	82.5
171	103d St. and Madison Ave.	1,866	22.2	36	2.5 8.0	290 49	24.5 71.4	One	8.0	109	67.8	78.9
39 B	126th St. and Second Ave.	847	18.5	36	2.5 9.0	111 31	37.8 77.4	One	9.0	30	66.6	83.5
102	113th St. and First Ave.	1,687	17.5	36	2.5 7.0	187 115	63.6 74.8	One	7.0	34	58.8	83.6

3. A sufficient amount of time, which is probably not less than six months, must be allowed to elapse between the injections of toxin-antitoxin and the Schick retest before the immunity response of an injected group of children can be judged with accuracy. This is seen especially well in Table 7. In the column headed "First Schick Retest" is noted in each school a group of children who were injected with toxin-antitoxin in the early spring. Some of these children were retested from two to three months later, during May and June; others were retested for the first time in the fall from seven to nine and one-half months after the injections of toxin-antitoxin.

In some of the schools the percentage of children who gave a negative Schick retest in the fall was more than double that of the children who had been found immune in the spring. The results in these schools are more significant as proof of the importance of the element of time as a factor in active immunization than the results in Table 5, of the schools which had been retested in the fall but not in the spring. For comparative studies of this character it is advisable to have groups of children in the same school, who have been given the Schick test and injected with toxin-antitoxin at the same time and are later retested at various intervals of time.

4. Another point brought out in Table 7 in the column headed "Second Schick Retest" is that a large proportion of children who had failed to become immune after the first series of toxin-antitoxin injections became immune and gave a negative retest after a second series of one or two further injections. In studying the results we cannot consider simply the number of injections. The time interval is also an important factor. The immunizing impulse of the first series stimulates the tissue cells. The interval of time between the two series allows a full stimulation of the cells to take place, so that when the later injections of the second series are given, the cells are ready to give a prompt antitoxic response.

It is quite probable that there is a distinct advantage n giving the injections of toxin-antitoxin at intervals f two weeks rather than of one week.

In a previous study of "naturally" immune children ind of horses known as good antitoxin producers, we iad found that it requires at least seven to ten days ıfter an injection of toxin-antitoxin before a sufficient ncrease in antitoxin is noted in the circulating blood to e detected by examination of the blood serum. Since he cells of such children and horses are undoubtedly ensitive and give a fairly prompt response to the injecions of toxin-antitoxin, it must be assumed that it equires at least that period of time for the full effect f the immunizing injection to manifest itself. If the econd injection is given within less than seven days, good deal of its antigenic value is probably lost hrough breaking down in the metabolic processes of he body before it can exert its full stimulating effect n the tissue cells. Injections of toxin-antitoxin given very two weeks find the tissue cells at the height of ieir stimulation and therefore in the most responsive tate. In the more recent schools visited we have given iree injections of toxin-antitoxin at intervals of two eeks, and we intend to continue this method of immuization in the schools that will be tested this spring.

ANAPHYLAXIS

The question has been asked by many physicians s to whether there is any danger from anaphylactic iock in the injections of toxin-antitoxin. We have ot seen any manifestations of anaphylactic shock after ıch injections either at the time of the first or of ıcceeding series of injections. Even an urticarial rash as rare. Only three children were reported to me ho had such a rash after an injection of toxin-antixin. The amount of antitoxin in each dose of toxinıtitoxin is too small (from 3.5 to 6 units = $\frac{1}{200}$ to 00 c.c.) to be of any danger even in the highly nsitive individuals. With a few children acutely ıbject to horse asthma such mixtures were used withıt noticing any symptoms of anaphylaxis.

A preliminary injection of antitoxin is no contradication to the subsequent use of toxin-antitoxin; nor ed there be any fear in giving a dose of antitoxin hen necessary after a previous series of toxinıtitoxin injections.

The question of anaphylaxis and serum sensitization human beings is a complicated one. While there are external manifestations of anaphylactic shock or rum sickness in most individuals, it is more than obable that some manifestation of serum sensitizan is present in human beings when a second injection antitoxin is given. Such, for instance, may be the planation of the much shorter protection after a cond dose of antitoxin than after the first dose.

In a previous communication[4] we have shown that first dose of 1,000 units of antitoxin protects a child r from twenty-one to twenty-four days, but a second se of 1,000 units protects only for from seven to e days. This may be explained by a more rapid eaking down of the antitoxin in the body as a result proteolytic ferments that have been produced after first injection of antitoxin. This accelerated desıction of the second dose of antitoxin serum is doubtedly an internal manifestation of serum senization in human beings, who are, as a rule, much less prone to the more violent external manifestations of serum sensitization and anaphylactic shock than is the highly sensitive guinea-pig.

SUMMARY AND CONCLUSIONS

1. The immunity response to the same mixture of toxin-antitoxin varies greatly in different groups of children. A preliminary stimulation of the tissue cells in Schick-positive children caused by repeated exposure to infection with the diphtheria bacillus seems to enable the cells to give a better response to injections of toxin-antitoxin than in other children whose cells have not been previously stimulated by such exposure. This is the case even though these exposures have been slight and have not been apparent in the form of a perceptible increase of antitoxin in the circulating blood.

2. After a first series of toxin-antitoxin injections, the immunity response to the second series did not follow the same *inverse ratio* noted between original susceptibility of the children in a school and the percentage of successfully immunized children in the same school.

3. Three doses of toxin-antitoxin, each from 1 to 1.5 c.c., injected at intervals of one week, give much better immunity results than two doses of the same amount injected one week apart.

4. A longer interval between the injections of toxin-antitoxin has the advantage in allowing the local reaction to disappear more completely before the next injection of toxin-antitoxin is given. There may also be a better antitoxin response when the injections are given two weeks apart.

5. At least six months should be allowed to elapse after the injections of toxin-antitoxin before the Schick retest is made to determine accurately the development of an active immunity.

6. A second series of two or three injections of toxin-antitoxin should be given to those who have not become immune after the first series.

7. There are a few children who fail to develop immunity after toxin-antitoxin injections even when they are given several series of injections.

8. In the schools reported, from 70 to 93 per cent. of children were rendered immune after two series of toxin-antitoxin injections.

9. There is practically no danger from anaphylaxis, either in repeating the injections of toxin-antitoxin or in giving toxin-antitoxin after a preliminary injection of antitoxin.

ABSTRACT OF DISCUSSION

Dr. Frank C. Neff, Kansas City, Mo.: I am sure that Dr. Zingher wishes to make this method of immunity by toxin-antitoxin available for every community, and if he does that he will have to make the technic as simple as possible. He did not touch on the details of the Schick reaction, but I know how he feels about it—that if we could do away with the Schick reaction in the first two years of life, it would simplify the procedure and make way for the campaign of toxin-antitoxin. I was interested in his observations on the results in institutions. During the last year I kept a record of positive reactions, and found that in private practice I get 66 per cent. of positive reactions, while in institution practice at the Gillis Orphan Home, we got only 40 per cent. That is a small observation, but it bears out that a contact immunity is developed by association with the disease. This is very interesting in prophylaxis of diphtheria. In other words, the children who have stayed in an institution for three months or more are more likely to have constant exposure to the diphtheria bacillus, and give fewer positive Schick reactions and better response to toxin-antitoxin immunization. I wish that Dr. Zingher would tell us something about the interpretation of the Schick reaction and also the way to tell when we may expect a reaction from the toxin-antitoxin. That is one of the most practical things about the Schick test. If we could simplify the terms used in the Schick test, it would be of value. I do not know whether the term protein reaction would be easier to understand than the term pseudo reaction.

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[4] Park, W. H., and Zingher, Abraham: Diphtheria Immunity, ural, Active and Passive: Its Determination by Schick Test, Am. J. . Health **6**: 431-445 (May) 1916.

Dr. Charles Gilmore Kerley, New York: Twenty thousand deaths from diphtheria is a startling figure in a disease about which we know so much. Something is wrong in our prophylaxis. Dr. Zingher says that 85 per cent. of children from 2 to 3 years of age are susceptible. I think it is far better to give those children toxin-antitoxin and immunize them than to put them through the process of the Schick test with which many physicians are not familiar. The better procedure will be to drop the Schick test for that age and immunize all children in the preschool age. In the older child who acquires a natural immunity, the Schick test should be applied. Dr. Zingher's statistics regarding the two types of children in the two classes of schools are most illuminating. It is probable that his conclusion that immunity is acquired through association with carriers is the right one. It is not infrequent that schools are found in which from 4 to 5 per cent. of the pupils have viable diphtheria bacilli in their throats and are not ill.

Dr. C. A. Earle, Des Plaines, Ill.: In an orphan asylum housing 1,200 children from 3 to 12, we have lost more cases from diphtheria in the last thirty years than from all other diseases and injuries combined. I think that Dr. Zingher is safe in saying that the mortality and incidence of the disease with our present methods will not be reduced. I started this work five years ago. We had lost seven out of eighty-five cases in six months preceding the beginning of this work. Since that time we have not lost a case of diphtheria. Three months ago there was the perfect setting for another epidemic of eighty-five or a hundred cases, but we had only five cases, all in children who had given positive Schick tests. I have given 3,600 doses of toxin-antitoxin to children without a single unpleasant result, other than an abscess of the arm in two cases. I do not see how anybody can read Theobald Smith's experiments on guinea-pigs without being convinced that there is something in toxin-antitoxin immunization, although all his experiments were done on guinea-pigs. The manifestations of diphtheria in the guinea-pig are in every way similar to that disease in human beings. In my experience, a positive Schick test is absolutely infallible as indicating susceptibility to diphtheria. Several times in this institution it has occurred that a child had received his Schick test, shown his susceptibility at the time, and then the parents or the court send for him. If he returns to our institution, singularly enough when a case of diphtheria occurs, it occurs in this child. The technic of the Schick test is so simple and its results are so accurate that none should be given the toxin-antitoxin mixture without the previous Schick test.

Dr. Herbert R. Brown, Rochester, N. Y.: The toxin-antitoxin method of immunization against diphtheria has been the direct outgrowth of the work of von Behring and Theobald Smith, with whom I was associated some years ago. At that time we worked on guinea-pigs and immunized the females before conception had taken place, and also in the later course of the pregnancy, and we were able to produce an immunity in the offspring that lasted from three to four months. Dr. Zingher speaks of the heavy mortality in very early life, and it seems possible that we could reach the new-born infant by immunizing the pregnant mother and so save a great many lives. The establishment of the prenatal clinics offers opportunity for carrying out such work. I would like to ask Dr. Zingher for an opinion concerning the duration of the immunity produced by treatment with toxin-antitoxin mixtures. As regards the mixture, it is absolutely safe to use. At present I think we are using a slightly under neutralized mixture so that there will be at times slight desquamation of the skin but nothing else in the way of untoward symptoms. It will produce no fatality.

Dr. William A. Mulherin, Augusta, Ga.: I apply the Schick test in all my cases before giving toxin-antitoxin. However, is not the value of the Schick test before giving toxin-antitoxin chiefly economic, rather than a medical necessity? With general practitioners uncertain about technic, and with doubtful interpretations of normal and pseudoreactions, are we not justified, in many cases, in advising the administration of toxin-antitoxin without a Schick test? If I understand the principle on which the administration of toxin-antitoxin is based, the toxin, when injected into the tissues, causes antibodies to be formed in the body. A definite amount of antitoxin is combined with the toxin in order to neutralize the dangerous possibilities of the toxin. If the patient already possesses these antibodies (antitoxin) he is doubly protected, and toxin-antitoxin can do no harm. I realize that in rechecking, to determine whether a patient possesses immunity against diphtheria, the Schick test is necessary. I believe, however, that in some cases, and under ordinary circumstances, we are laying too much emphasis on the Schick test.

Dr. Ernest R. Brooks, Cleveland: We have been using the Schick test and the toxin-antitoxin mixture in our schools for about a year, and our results correspond with those which Dr. Zingher obtained. We cannot yet give statistics, but our results agree with his.

Dr. Abraham Zingher, New York: Many of the points brought up in the discussion have repeatedly been emphasized in previous publications. Attention has frequently been drawn to the necessity of using the control test with heated toxin to facilitate the accurate interpretation of the Schick reaction in children more than 5 years of age and in adults. The advisability of omitting the preliminary Schick test and the giving of toxin-antitoxin to all children depends on different conditions. The age of the child is certainly an important factor. For practical reasons it would be well to omit the preliminary Schick test and to give three doses of toxin-antitoxin to all children between the ages of 6 months and 6 years. Children of school age, however, should receive the Schick test first, as in some schools as many as from 80 to 85 per cent. may be found to be naturally immune. But in rural communities the number of susceptible children in the schools is very high and in this group it may be found advisable to omit the preliminary Schick test. No child, however, should ever be pronounced immune to diphtheria after the injection of toxin-antitoxin and receive a certificate of protection until a Schick test has been made and a negative reaction obtained. These Schick tests could be given by the school physician to the children when they are admitted to school. We are now planning an extensive diphtheria prevention campaign in New York City among the children of preschool age. We will omit the Schick test and give the injections of toxin-antitoxin to all children between the ages of 6 months and 6 years. This work will be carried out in the baby health stations, in the day nurseries and in mothers' and babies' playgrounds in the public schools. The people of the city have been educated in the subject of diphtheria prevention through circulars which have been taken home from the schools by about 800,000 school children. A good deal of publicity has been given to it through the daily press. This is an important preliminary step in any comprehensive campaign of diphtheria prevention. The suggestion made to immunize the children in utero by injecting pregnant mothers is an interesting one. It will probably not be successful, as we have found that attempts to inject new-born children with toxin-antitoxin failed to produce an active immunity. The presence of antitoxin in the new-born interfered with the development of such an immunity. The active immunity produced by toxin-antitoxin has been found to continue for more than seven years. It is probably a more or less permanent immunity. The active stimulation of the tissues by toxin-antitoxin enables the cells to respond later with a further production of antitoxin as a result of repeated mild contact infection with the diphtheria bacillus, which is so important in producing the so-called "natural immunity."

THE POTENCY OF COMMERCIAL VITAMIN PREPARATIONS *

E. V. McCOLLUM, Ph.D.
AND
NINA SIMMONDS, M.A.
BALTIMORE

There is no discovery in the fields of physiology and nedicine which rests on a firmer experimental basis han that relating to the existence of several substances, till uncharacterized chemically, which the diet must upply if health and vitality are to be maintained. The nost common term for this group of nutritive priniples is vitamins, the individual substances being eferred to as vitamin A, vitamin B and vitamin C. Ve have recently demonstrated the existence of a ourth one which plays a rôle in bone growth.[1] The irst three of these have been conclusively shown to be tiologic factors in the so-called deficiency diseases, vhich term includes a type of ophthalmia of dietary rigin, beriberi and scurvy, respectively.

It has been strongly urged by the group of investigaors who have contributed the experimental data leadng to the discovery of this remarkable class of ubstances that a well planned diet will afford an bundance of each of these dietary factors. No evience whatsoever has been brought forward to show hat an excessive amount of one or another of the itamins is of value in the nutrition of either the sick r the well, but there is today a great wave of enthusism on the part of the public for information concernng them. There prevails in the minds of most people, owever, a childlike confidence that these substances nust have a medicinal value. As was to be expected, he graceless exploiters of human credulity have been uick to see the possibilities of financial gain through he sale of pills and extracts which purport to supply itamins in concentrated form. The extensive adversing of such nostrums, and the reports of druggists s to the extent of the demand for these products, leave o room for doubt that there is a great demand for hem and at fancy prices.

Owing to the rapid growth of the traffic in commeral vitamins, we thought it important to examine some f these preparations for their potency as sources of he most stable of these, the water-soluble B, or vitain B, the antineuritic substance. Any one who is miliar with the chemical properties of the vitamins nows that there is little prospect of making concenated preparations of any vitamin other than waterluble B which contain any more active substance than obtainable in certain foodstuffs that are easily prorable. It is, in fact, the water-soluble B or antiuritic substance that is most promoted commercially. he antiscorbutic substance, the vitamin C, is so unstae that it would seem to be impracticable to obtain it concentrated form for use as a substitute for fresh getable foods, which are, in general, very rich in it. 'e have tested six of the products for vitamin B which have been more or less widely advertised, and present the results of our studies because of their interest to the medical profession.

An examination of the labels on the containers of the vitamin preparations which we have studied suggests at once that their promotion for therapeutic purposes represents a repetition of the "patent medicine" propaganda which has for so long been inflicted on the American public. Thus, the same list of general symptoms that were listed on the sarsaparillas, blood purifiers, kidney remedies, remedies for female weaknesses, etc., reappear as conditions for which the vitamin preparations are said to be specific remedies.

MASTIN'S YEAST VITAMON TABLETS

The directions for using Mastin's Yeast Vitamon Tablets, sixty of which retail for $1.10, are:

> Take two tablets with a swallow of water after each meal. To those who find it agreeable it is recommended that the tablets be taken with a glass of milk in place of a swallow of water whenever convenient. To derive most beneficial effects Mastin's Vitamon should be taken regularly and systematically for several weeks.

The tablets are said to contain all three vitamins "(Fat-soluble A, water-soluble B, and water-soluble C) highly concentrated with other such valuable health-building elements as Calcium Glycerophosphate, Nux Vomica and Peptonate of Iron."

It is further stated on the label that "this preparation contains vitamines together with other ingredients which should prove of value in helping to improve the appetite, aid digestion, correct constipation, clear the skin, increase energy, and, as a tonic, to assist in putting on weight in weakened, run down conditions due to malnutrition."

The results of the tests on this material are shown in Charts 1 and 2.

YEAST VITAMINE (HARRIS)

Yeast Vitamine (Harris), prepared by the Harris laboratories, Tuckahoe, N. Y., is marketed in tablet form. According to the label on the bottle it is:

> Prepared from fresh brewers' yeast (Saccharomyces cerevisiae). Water-soluble vitamine-B, highly concentrated. A natural food tonic and stimulant of cell activity.

It is stated on the bottle that:

> Each tablet contains 200 milligrams of standardized Vitamine fraction according to Osborne and Wakeman, Jour. of Biol. Chem., Dec., 1919, Chart III. It keeps indefinitely provided the bottle is corked when not in use. Dose: For adults, two tablets three times a day; children in proportion, as directed by a physician.

The preparation used by us was labeled "Control Number 978." The results of the tests on this material are shown in Charts 3 and 4.

"DOUBLE STRENGTH" YEAST AND IRON CONCENTRATE

The preparation "Double Strength" Yeast and Iron Concentrate is manufactured by the Hollander-Koshland Company, Incorporated, Manufacturing Pharmacists, Baltimore. The label on the bottle states the:

> Dose for adults two tablets after each meal, preferably with a glass of milk. If this is not convenient take with water.

The tests for the vitamin B content of these tablets are described in Chart 5.

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* From the Department of Chemical Hygiene, School of Hygiene and blic Health, Johns Hopkins University.

* Since this paper was written, an article has appeared by Hess, ore and Calvin (Experimental Studies with Proprietary Vitamin oducts, J. A. M. A. **78**: 1441 [May 13] 1922) describing tests on nea-pigs and pigeons of a number of commercial preparations for ir antiscorbutic and antineuritic properties.

[1] McCollum, E. V.; Simmonds, Nina, and Becker, J. Ernestine: dies on Experimental Rickets, XXI, An Experimental Demonstration the Existence of a Vitamin Which Promotes Calcium Deposition, ll. Johns Hopkins Hosp., June, 1922.

IRVING'S PHOS-PHO VITAMINE

The label of Irving's Phos-Pho Vitamine reads:

> 60 Tablets—Price $1.00. . . . Is intended as a body cleansing, strength building, system regulating, nutritive tonic food. Distributed only by Irving Laboratory, Wheeling, W. V., U. S. A. Earle Chemical Co., Inc., Sole Owners.

It is also stated on the label that:

> Irving's Compound Phos-Pho Vitamine containing fat-soluble A and water-soluble B vitamines in combination with Glycerophosphates, Cascara, and other valuable ingredients. Directions: Take one or two tablets immediately after each meal with a swallow of water or milk. Recommended in the treatment of certain forms of Malnutrition, Simple Anemia, Boils, Carbuncles, Pimply Skin and Loss of Weight from run-down conditions.

The tests which we have made on this preparation are described in Chart 6.

ALPHA VITAMINE TABLETS

According to the label on the bottle, these tablets:

> Contain the following vitamines: Fat-soluble A, water-soluble B, water-soluble C, and ingredients of Alpha Tablet No. 28. Indicated in the following diseases: Malnutrition, nervous deficiency, physical breakdown, brain fag, general debility. Dose: Two tablets, dissolved or swallowed with water or milk, three times a day.

The label on the carton in which the bottle is contained reads:

> INDICATIONS—Useful in cases of Malnutrition, Constipation, Nerve Deficiency, Poor Health, Boils, Black Heads, Physical Breakdown, Disordered Metabolism, Scurvy and Pellagra.

The product is manufactured by Boericke & Tafel, Pharmaceutical Chemists, Philadelphia.

The results of the tests of this preparation are described in Chart 7.

"SUPER-VITAMIN" TABLETS

The circular which accompanies each box of "Super-Vitamin" tablets reads:

> *Directions for Taking "Super-Vitamin" Tablets*
>
> In the first place—remember—that in order to get the utmost in results, *"Super-Vitamin"* Tablets should be taken every day with consistent regularity, until the desired results are obtained. Follow the directions carefully. Remember *"Super-Vitamins"* are *"Super"* in every sense of the word. *Powerful.* Do *Not* take any more than directed, in the beginning.
>
> For adults, begin by taking 1 Tablet directly after breakfast, and then 1 Tablet again directly after supper. Two a day is sufficient for the first 30 days. If you feel the awakening and energy being brought about too rapidly, take one tablet per day only for the first 15 days. Remember they are *"Super."*
>
> Follow each Tablet with a glass of water. For growing children, One-Fourth Tablet once a day at supper time is plenty. Older children should take One-Half Tablet once a day at supper time.
>
> The pleasant intestinal tonic built into *"Super-Vitamins"* makes assimilation pleasant and provides an excellent means of stimulating a healthy, gentle movement of the bowels. The action is quite positive. *"Super-Vitamins"* will loosen up the slime and accumulated bile and clean the system. Therefore a slight feeling of discomfort may manifest itself in the beginning, but this will only mean that these latent accumulations are being acted on for expulsion from the System. Don't let this worry you. The substantial tonic effect after a few days is wonderful.
>
> Avoid the starchy foods and fats. Eat plenty of citrous fruits, such as Oranges, Grape-Fruit, etc. Do not over-eat. Eat at regular hours. Masticate the food well. Get regular rest. Take plenty of out-of-door exercise when possible.
>
> In about 30 days you may increase the number of tablets to two at meal time. It is better to use the first bottle up—and then increase the quantity. Get your system accustomed to these energy builders first.
>
> EVERYONE IS WILD OVER "SUPER-VITAMINS"
>
> We predict that 25,000,000 people will be using "Super-Vitamins" in 6 months' times. They are a blessing to humanity.
>
> GET THE GENUINE!
>
> With *"Super-Vitamin"* Trade-Mark, shown below, in every package.
>
> "SUPER"
> VITAMINS
> TRADE MARK
>
> "Super-Vitamins" are more than Vitamins. They are Vitamins-Plus, and then some. You will realize this before you have taken them 10 days.
>
> Sold only by
> THE JAMES-VICTOR-EVANS COMPANY
> Steubenville, Ohio, U. S. A.

The results of our tests on this material are described in Chart 8.

NATURE OF CLAIMS

The claims set forth on the labels of the medicinal values of these preparations are extravagant and misleading. They do not contain the vitamin B in concentrated form as they are represented to do. The marketing of these preparations represents an attempt, and unfortunately a successful one, to substitute a commercial vitamin propaganda for the nefarious "patent medicine" business which the American Medical Association has done, during the last twenty years, so much to suppress for the protection of the public.

The drug store is not the place to secure vitamins. Laboratory research during recent years has revealed in detail the specific dietary properties of all our more important natural foodstuffs. Many hundreds of careful tests have made clear what combinations of food substances are likely to promote good nutrition. On the basis of the abundant data available we have for several years been urging the adoption of a system of diet by the American people which promotes health far better than our white bread, muscle meat, potato and sugar type of diet can ever do.

During the last century we have developed industrially to a degree hitherto unapproached, and the populations of Europe and America have greatly increased and have tended to become more and more urban. This has necessitated changes in agriculture which have become possible through the invention of modern farming implements, and the adoption of new methods of food distribution. With these changes in living habits have come changes in our diet. It has become essentially one consisting of highly milled cereal products, muscle meats, potatoes and sugar. This is a failure in animal experimentation and is proving a failure in human experience. Evidence that this is true is abundantly supplied in the percentage of underweight children in our schools, and in the prevalence of rickets and other skeletal defects, small jaws and teeth which are irregular, poorly developed, and which decay early.

Milk and leafy vegetables are of outstanding importance in that they are so constituted as to make good the deficiencies of the white bread, meat, potato and sugar type of diet. In order to differentiate them as sharply from other foods as their importance deserves, we have during the last few years designated them the protective foods.

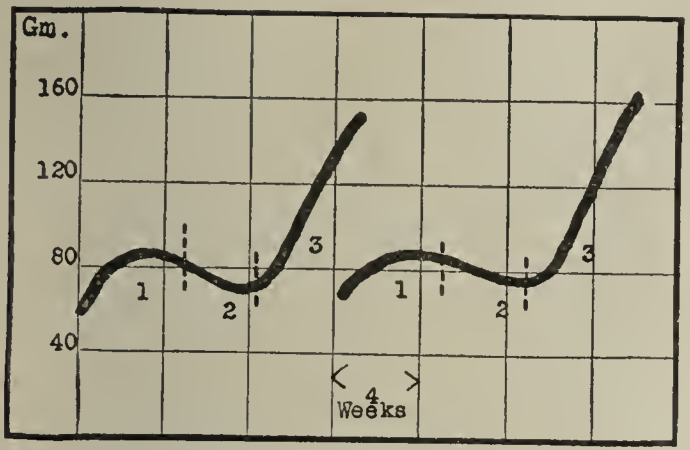

Chart 1.—Period 1, basal diet; Period 2, basal diet plus Mastin's Yeast Vitamon Tablets equivalent to the dosage recommended for human consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble B.

The system of diet which we recommend is in no respect radical. It includes borrowing the best features of several types of diets employed by man in several parts of the world. The consumption of liberal amounts of milk and its products is the main feature of the diets of pastoral peoples, whose nutrition leaves little to be desired. Primitive peoples are accustomed to the consumption of considerable amounts of raw foods.

DIETARY REFORMS

Reduced to its simplest terms, the most important dietary reforms which we can introduce are:

1. Salads should be eaten twice each day. This will insure the regular consumption of some raw fruit, raw cabbage, raw celery, tomatoes, lettuce, etc., since these enter so frequently into the composition of salads. The consumption of such foods provides an abundance of the antiscorbutic substance in which our diet of cooked foods is likely to be lacking.

2. Each day a liberal helping should be taken of some food which we would class as pot-herbs or greens. This insures the regular consumption of some leafy vegetable. These, as has been pointed out, possess dietary properties which make them unique among the vegetable foods.[2] This practice will likewise go far toward correcting constipation, which is the bane of the existence of a large portion of our population.

3. Each day a quart of milk or its equivalent in the form of manufactured dairy products should be taken.

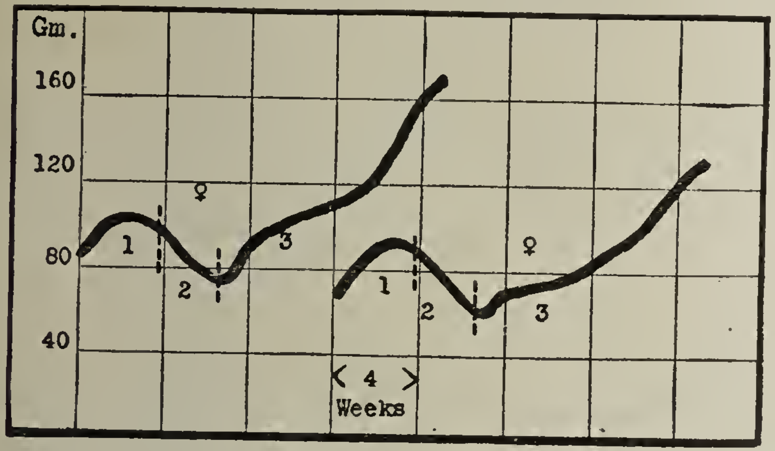

Chart 2.—Period 1, basal diet; Period 2, basal diet plus Mastin's Yeast Vitamon Tablets equivalent to twenty times the dosage recommended for human consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble **B.**

If one lives up to these rules, which will mean that the diet will be so planned as to include a sufficient amount of the protective foods, the remainder of the diet may be selected entirely on the basis of its appeal to the sense of taste. One may be assured that the food supply as a whole will be such as to promote health. When a diet such as this is adhered to there will be a great abundance of vitamins in each day's food supply.

METHOD OF CONDUCTING THE TEST FOR THE VITAMIN B (WATER-SOLUBLE B) IN THE PREPARATIONS DESCRIBED

Young rats were confined to a diet of purified casein, 18 per cent.; agar-agar, 2 per cent.; salt mixture (185), 3.7 per cent.; dextrin, 71.3 per cent., and butter fat, 5 per cent. This is the basal ration to which reference is made in the legends to the charts. On this diet the animals grow somewhat during the first two or three weeks; then the weight becomes stationary or declines. They grow feeble and irritable, and within two or three weeks they, as a rule, develop symptoms of polyneuritis or experimental beriberi. They sometimes die without manifesting the symptoms characteristic of this disease.

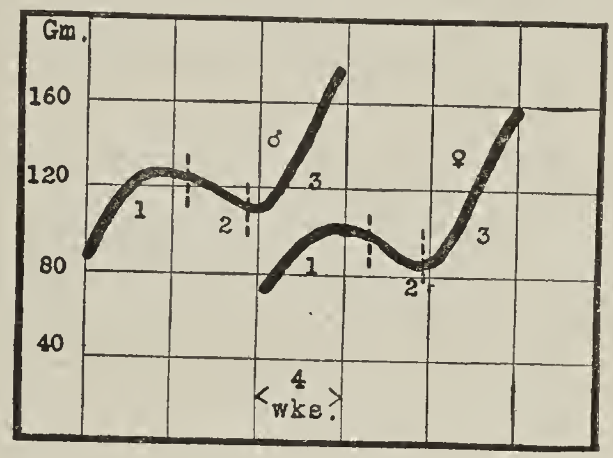

Chart 3.—Period 1, basal diet; Period 2, basal diet plus Yeast Vitamine Harris Tablets equivalent to three times the dosage recommended for adult consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble B.

Since the recovery of the rats is uncertain if they are brought to the verge of collapse, we found it desirable to administer the remedial measures before the animals were seriously depleted. This was not invariably done, but the exceptions are noted in the legends to the charts. When, employing the foregoing diet, a source of water-soluble B is supplied to rats which are rapidly declining in weight and strength, they respond with complete recovery, and growth begins after a few days. Wheat germ is an excellent source of this vitamin, and when administered to the extent of 4 per cent. of the food mixture to animals which are about to decline as the result of specific starvation, they make a very quick response with growth. Typical curves showing this are presented in Chart 9.

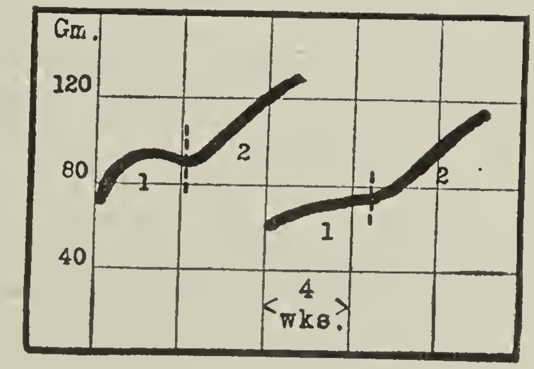

Chart 4.—Period 1, basal diet; Period 2, basal diet plus Yeast Vitamine Harris Tablets equivalent to twenty times the dosage recommended for human consumption.

In calculating the dosage of vitamin tablets in these experiments we assumed that the dosage recommended by the manufacturer applied to a human subject of 70 kg. of body weight. The dosage for the rats was calculated on a corresponding weight basis.

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[2] McCollum, E. V.: The Newer Knowledge of Nutrition, Ed. 2, New York, the Macmillan Company, 1922.

RESULTS OF TESTS

Chart 1.—*Mastin's Yeast Vitamon Tablets.* The records in this chart show the failure of young rats to grow in Period 1 when confined to the basal diet, which was complete except that it lacked the vitamin B, or water-soluble B. This is the so-called antineuritic substance, a lack of which causes beriberi. In Period 2, a quantity of Mastin's Yeast Vitamon, equivalent on a basis of body weight to the dosage recommended on the label for human use, was added to the basal diet. There was not only no improvement in the condition of the animals, but they gradually grew weaker during the four weeks covered by this period. In Period 3 the Mastin's Yeast Vitamon tablets were omitted, and 4 per cent. of wheat germ was introduced instead. Wheat germ is known to be very rich in water-soluble B. As soon as the animals received this source of the B factor, their response was immediate and spectacular. Their strength returned, and they resumed growth at a rapid rate. The Yeast Vitamon tablets did not furnish an appreciable amount of the vitamin, which they are advertised to contain.

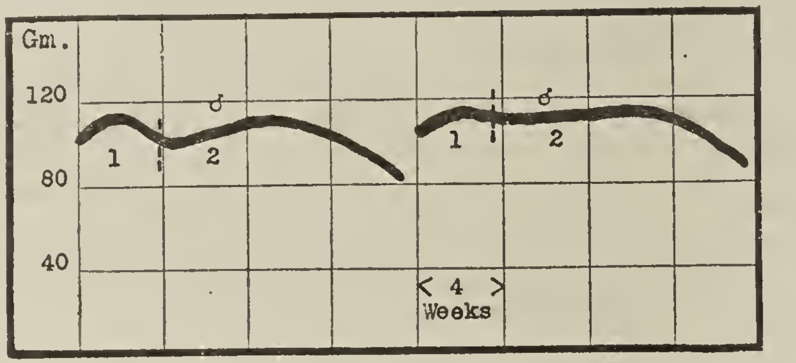

Chart 5.—Period 1, basal diet; Period 2, basal diet plus Yeast and Iron Concentrate tablets equivalent to twenty times the dosage recommended for human consumption.

Chart 2.—*Mastin's Yeast Vitamon Tablets.* In the experiments described in this chart, the conditions maintained were identical with those described in Chart 1, except that in Period 2 the dosage of Mastin's Yeast Vitamon was greatly increased. In Period 1 the animals received the basal diet without supplements. In Period 2, Mastin's Yeast Vitamon was introduced into the food mixture in amount equivalent to twenty times the dosage recommended for human use. The animals failed to respond with improvement of health in any instance. In Period 3, 4 per cent. of wheat germ was introduced, and the Vitamon tablets were omitted. As soon as this change was made, there was a rapid improvement in the case of both animals. Mastin's Yeast Vitamon does not contain more than traces of water-soluble B, and is very inferior to most of our ordinary foods in its content of this substance.

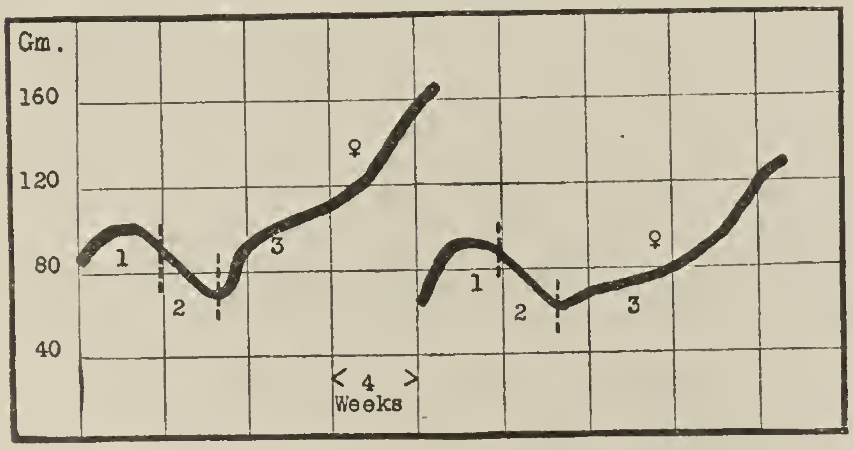

Chart 6.—Period 1, basal diet; Period 2, basal diet plus Irving's Phos-Pho Vitamine Tablets equivalent to twenty times the dosage recommended for human consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble B.

The rats, after being confined to the diet of Period 2 for twenty-one days, were in a very feeble condition, and exhibited symptoms of incipient polyneuritis. They could not have lived more than a day or two, yet a liberal administration of water-soluble B in the small amount of wheat germ which was then given led to rapid recovery and resumption of growth.

Chart 3.—*Yeast Vitamine (Harris).* In Period 1 the animals were fed the basal diet. In Period 2, which covered three weeks, the diet was supplemented with three times the dosage of Yeast Vitamine Harris recommended on the label for human use for the adult. Notwithstanding this liberal administration of the Yeast Vitamine Harris tablets, the animals continued to decline in weight and to grow more feeble. Obviously, the tablets contain at most but a trace of the vitamin for which they are recommended. In Period 3 the Yeast Vitamine Harris was omitted, and 4 per cent. of wheat germ was added to the diet. In all cases there was immediate improvement in the condition of the animals, and growth was resumed at a rapid rate.

At the end of Period 2, the rats were frail and walked with a tottering gait. It was believed that they would have either developed experimental beriberi or have died within forty-eight hours had a source of water-soluble B not been given them at that time.

Chart 4.—*Yeast Vitamine (Harris).* In Period 1, the animals were fed the basal diet. In Period 2, the diet was supplemented with twenty times the human dosage of Yeast Vitamin Harris tablets. There was a fair response with growth, but not so striking as in our experience is seen when under such experimental conditions 4 per cent. of wheat germ is added (compare Chart 9).

Chart 5.—*"Double Strength" Yeast and Iron Concentrate.* In Period 1, the rats were restricted to the basal diet. In Period 2, this diet was supplemented with twenty times the recommended dosage of the "Double Strength" Yeast and Iron Concentrate. As the weight curves show, the animals were for a time saved from death, but in no instance did any increase in body weight, and after a few weeks all declined and died. This preparation, as purchased by us, is nearly free from the vitamin B. The term yeast in its name would suggest to most persons that it should be rich in this substance.

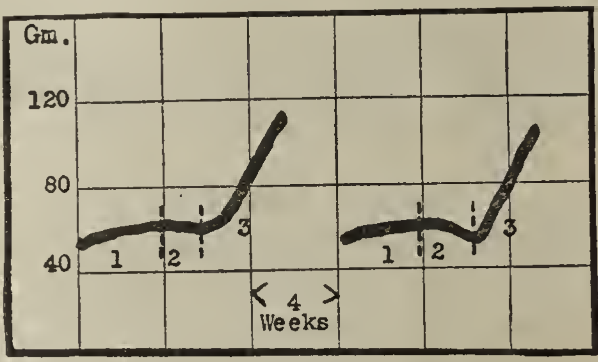

Chart 7.—Period 1, basal diet; Period 2, basal diet plus Alpha Vitamine Tablets equivalent to twenty times the dosage recommended for human consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble B.

Chart 6.—*Irving's Phos-Pho Vitamine.* In Period 1, the basal diet was fed. In Period 2, this diet was supplemented with twenty times the human dosage of Irving's Compound Phos-Pho Vitamine. In all cases the animals steadily declined in weight and were in a very feeble condition when, in Period 3, 4 per cent. of wheat germ was substituted for the vitamin preparation. As soon as this change was made in the character of the food, the rats began to improve in health, and growth was resumed in all cases.

One of the rats whose curve is shown in the chart was extremely feeble at the end of Period 2. Six days later it was still very sick, but improved soon afterward, and grew slowly during the next four weeks. It had sufficiently recovered at this time so that growth took place at a rapid rate thereafter.

Chart 7.—*Alpha Vitamine Tablets.* In Period 1, the basal diet was fed. In Period 2, the diet was supplemented with twenty times the amount of Alpha Vitamine Tablets recommended for human use. In no case were the animals benefited by this material. After two weeks of the Alpha Vitamine treatment, their condition was distinctly worse than when the preparation was first fed. They were then (Period 3) given 4 per cent. of wheat germ instead of the vitamin preparation. All but one animal grew at a rapid rate after this change was made. It will be noted from the chart that one of the rats did not grow until the second week after the wheat germ was supplied. This was due to the fact that it had developed beriberi and had to be fed a water extract of wheat germ with a medicine dropper. Obviously, the preparation is worthless as a source of one of the vitamins for which it is so highly recommended.

Chart 8.—*"Super-Vitamin" Tablets.*—In Period 1, the basal diet was fed. In Period 2, "Super-Vitamin" tablets equivalent to twenty times the dosage recommended for human use (on the basis of six tablets a day) supplemented the basal diet. The rats continued to decline without exception after the vitamin preparation was administered. After three weeks, Period 3 was begun, in which 4 per cent. of wheat germ replaced the "Super-Vitamin" tablets. All the animals which were included in the test grew very rapidly as soon as the vitamin for which they were starving was made available. "Super-Vitamin" tablets do not contain demonstrable amounts of the antineuritic vitamin or water-soluble B.

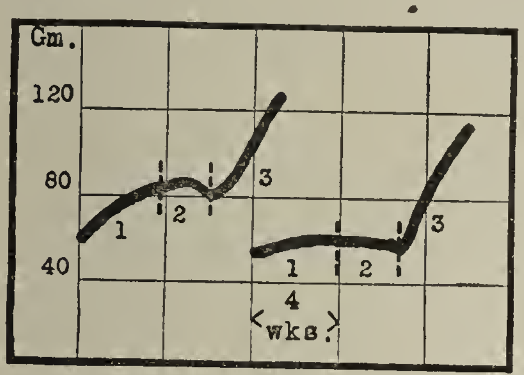

Chart 8.—Period 1, basal diet; Period 2, basal diet plus "Super-Vitamin Tablets" equivalent to twenty times the dosage recommended for human consumption; Period 3, basal diet plus 4 per cent. of wheat germ as a source of water-soluble B.

Chart 9.—*Basal diet.* In Period 1, the animals were given the basal diet. After the initial period of growth, their weight became stationary or nearly so for two weeks. On the addition of water-soluble B to their diet in the form of 4 per cent. of wheat germ, they resumed growth at once.

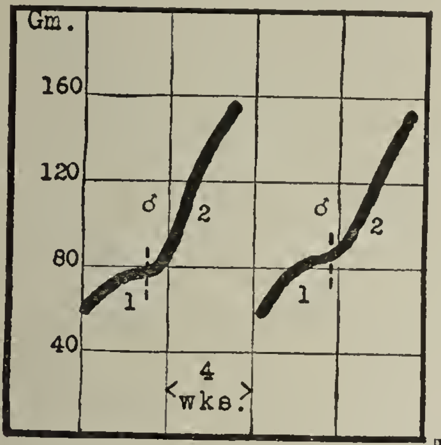

Chart 9.—Period 1, basal diet; Period 2, 4 per cent. of wheat germ added to the ration.

In other experiments we have demonstrated that young rats can be given as much as 80 per cent. of wheat germ (fat-free) properly supplemented with respect to calcium and fat-soluble A, without interfering in any way with their rapid growth in experiments covering several weeks. This shows that twenty times the dosage of water-soluble B that just suffices to induce normal growth does not noticeably disturb the health of young rats in such intervals of time as are covered by our tests.

Japan's Death Rate.—According to the latest statistics, the death rate in Japan has increased, while the birth rate has diminished, the death rate showing 26.8 per thousand, and the birth rate 32.2 per thousand.

MYOCARDITIS AND ITS MANAGEMENT *

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There is a broadcast and growing tendency on the part of medical men (teachers, writers and practitioners) to use the term myocarditis too loosely and too frequently. As a result, much confusion has arisen, and will continue to arise, until an understanding is reached concerning this matter, or, until some uniform classification of myocardial conditions is adopted.

At the present time the medical profession is more or less divided against itself on this subject. One half of the physicians are not quite sure that they comprehend fully the conception which exists in the minds of the other half when they talk of myocarditis. Many men tell us that they make the diagnosis of myocarditis quite frequently, as their case records show. Others, equally active, prominent and proficient, say that, on the contrary, the cases are few and uncommon. What is the trouble? It is quite evident; we are not all talking about the same thing. The term myocarditis is being applied by some men to certain transient, functional states, to neurotic conditions, and to various toxemias.

The basis for distinction, as well as the point of interest, in this numerically large group of cases is that, in the great majority of instances, they clear up completely. They are temporary or functional in character. They have no pathologic condition behind them. Given the factors of time, nature, and the aid of the physician, the condition disappears altogether. The heart returns to a normal state. A condition of restitutio ad integrum obtains.

CLASSIFICATION

For the accurate classification of the subject under consideration, pathology is our only rational basis. I should define myocarditis as "a condition in which pathologic change has taken place in the substance of the heart muscle itself." The term should be held in reserve and applied to such cases and to them only. With this common understanding we could readily divide myocarditis into the acute and the chronic types. The acute type is strictly inflammatory. A virulent acute infection may give rise to a widespread acute inflammatory process in the myocardium. A localized accumulation of leukocytes occurs; edema is present; fibrinous coagulation takes place; granular or hyaline changes are found, and the process is accompanied oftentimes by softening and necrosis (localized abscess formation).

The chronic type, from the pathologic point of view, is very closely allied to the type described above. In fact, it is almost indistinguishable from it in the very early stages, for there is, in the beginning, the same stage of local congestion, leukocytic infiltration, etc. The analogy ends here, however. Softening and necrosis do not occur in the chronic forms. Instead, there is a low-grade, slow, insidious change taking place which tends, clinically, toward one of the well recognized types of degeneration; or a process of substitutive fibrosis appears which results ultimately in hard, shrunken tissue.

DIAGNOSIS

The diagnosis of myocarditis is beset with difficulties. As a rule, it is not possible (except in the rarest instances) to make the diagnosis off hand, or, even after one or two hasty examinations. A closer study of our patients and their symptoms is required, a more thorough analysis of the cause, meaning, and progress of the symptoms. Years of clinical experience, with the deductions and knowledge which accrue therefrom, enriched by the modern method of postmortem study, are all necessary adjuncts to diagnosis.

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* Read before the Section on Practice of Medicine at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

The greatest difficulty is encountered in diagnosing the acute types. Most commonly the clinical picture of acute myocarditis hides under, or merges itself with, the primary disease, in a way that is quite baffling. However, at its onset there is likely to be a sudden increase in the degree of the illness of the patient; also a marked increase or accentuation of all the symptoms, and, in addition, signs which point overwhelmingly to a failing heart, for example, a sense of tightness or constriction, and even pain, in the chest; labored or difficult breathing, a weak, rapid and irregular pulse, of low tension; distant and toneless heart sounds; relaxed heart muscle and dilated chambers; systemic distress; cyanosis and even death. In some instances, diagnosis may be a matter of approximation, or a shrewd guess. (Yet we frequently see cases with overwhelming evidences of cardiac weakness, accompanied by an infectious endocarditis and often a definite blood stream infection, in which we have made a diagnosis of acute myocarditis which has been verified by postmortem findings.) On the other hand, in the chronic type, into which class the greatest number of our cases fall, the diagnosis may be made, in almost every instance, by the well trained, skilful physician.

In the chronic type, the syndrome has a very wide range of variation. Much will depend on the extent of the involvement, and the location of the pathologic condition of the heart muscle.

The essential factor that is common to all types is the presence of signs of cardiac failure which tend to become permanent, and which are accompanied by exhaustion of the cardiac reserve force. Our attention is attracted by such symptoms as shortness of breath, tiring very easily, a sense of tightness or constriction, even pain in the chest, weakness, attacks of rapid beating of the heart, skipping of heart beats. At first, we are at a loss to understand these symptoms. We take into consideration the age, development, occupation, amount of exercise taken, personal habits, etc., of the particular patient; but we cannot account for them on this basis. Then, we begin an intensive study of the particular case. We study the heart at rest and at work. We make use of the well known tests, such as shadow runs, hopping and climbing stairs. We make accurate observations of the blood pressure, of the rate and rhythm of the heart before starting exercise, immediately after its completion, and at five minute intervals thereafter, for three or four observations. We tabulate and study our results. We compare them with what our experience has taught us to consider a rough normal. At the start, these symptoms are brought out only after exertion (moderate or severe). As time goes on, it takes less to elicit these symptoms and they last longer (the cardiac reserve force is lessening). Finally, the symptoms present themselves at intervals, even when the patient is at rest.

The picture described above is the corner stone, the essential feature of our diagnosis of chronic myocarditis. It may have accompanying it, superimposed upon it, and, in some instances, almost overshadowing it, certain other phenomena. For example, involvement of the coronary arteries may present marked symptoms of angina pectoris. If the main stem of the conduction bundle is involved, there are likely to be definite and almost diagnostic rhythmic phenomena. Chronic pericarditis, as an accompaniment, would add its syndrome to the picture. Chronic endocarditis, with its distinctive and well known clinical picture (hypertrophy and dilatation, valvular disease, dropsy, passive congestion of the viscera, and changes in organs remote from the heart, etc.) may overshadow, or temporarily obscure, the underlying condition.

These remarks on diagnosis may be summarized thus:

1. It is not so much the number or character of the symptoms as it is the behavior of these symptoms, from the standpoint of time and progression, that enables us to draw valuable diagnostic conclusions.
2. Evidences of cardiac failure and the reduction of cardiac reserve force are present in every true case of myocarditis. The degree of failure and rapidity of its progress will vary with the case.
3. Careful and repeated observations must be made at intervals, and the sum total of these observations must cover a considerable period of time.
4. We must employ the method of diagnosis by exclusion, thus getting rid of temporary disturbances, such as neuroses.
5. The syndrome must be constantly present, easily brought out by exercise, and must show a tendency toward gradual progression.

TREATMENT

The outlook, from the standpoint of treatment, of myocardial conditions is far from brilliant. In the acute form, in which diagnosis is difficult or conjectural, we necessarily turn our attention to the accompanying process, namely, the overwhelming infection, or general septic condition, meeting the prominent, or outstanding, conditions as best we may.

In the chronic form, with its low-grade and constantly progressive tendency to degenerative, or fibrotic, change, we at least have an abundance of time at our disposal in which to formulate, mature and apply our therapeutic schedule. Our results, however, are not particularly flattering. A consideration of the modus operandi of the pathology in these cases teaches us that the damage is already beyond repair when the case comes to the knowledge of the physician. At this time, it is entirely a question of conservation or management. It is best, at the outset, to acknowledge frankly that we have no specifics. We must work along general lines.

Our first duty is to ascertain, within as narrow limits as possible, the exact status of the heart when we take charge of the case; to determine the extent of the damage to the heart and the condition of the cardiac reserve force. Repeated detailed observations of the heart over long periods of time, the tabulation of our results for purposes of comparison and the application of the various forms of the work test furnish us with an approximate answer to these questions, as shown, in detail, elsewhere in this paper.

Following this determination, we must discover the condition and functional capacity of the other vital organs of the body. Are the lungs normal, or are they impaired by disease? Are the kidneys competent, or is there an advanced nephritis? What of the condition of the gastro-intestinal tract so far as digestion, absorption, and elimination are concerned? The patient's metabolism should be determined, including the condition of the liver and the blood. We should discover whether or not the arteries are atheromatous. If we find trouble anywhere we should remove it. If this is not possible, then we should do our best to ameliorate it. Having first attended to these things, we are in a position to map out a schedule, a daily routine, for our patient. This schedule must be ordered in strict accordance with a summation of the factors ascertained under the first and second investigations. To state the matter very simply and bluntly, having gotten the patient in the best possible condition, we must reduce his work, mental and physical, to the point at which it coincides with his capacity. Thus we minimize cardiac strain, reduce the work which the crippled heart has to do, and at the same time, we prolong and render more comfortable the life span of our patient. The foregoing is, by all odds, the most important and valuable factor in the management of chronic myocarditis.

Second, and next in importance, comes the adoption of such measures as will tend to combat, or, at least, retard, the degenerative changes. All of the procedures mentioned under number one will have at least an indirect use here. All of the factors which go to make up the patient's daily round of life must be carefully supervised and directed by the physician. Violent exercise, overfeeding, excesses in alcohol, tobacco and venery are harmful. Rest, particularly in people who do physical work, is a useful measure. It may be necessary to reduce the amount of the work done or even to change the occupation. In the type of case in which the occupation requires the expenditure of mental, rather than physical, energy, moderate and supervised exercises (medical gymnastics) may be employed, such as tension and resistance movements and graduated hill climbing (the Oertel system). Some practitioners use the Schott system of medicated baths, with apparent benefit. If we are fairly certain that the degenerative process is due to some definite cause, the cause should be treated; for example, if the condition is due to syphilis, the proper use should be made of antisyphilitic treatment. In the presence of anemia and a poor physical condition, iron in moderate doses is a useful remedy. I believe that strychnin, the nitrate or sulphate, $1/30$ grain (0.002 gm.), after meals, used for considerable periods of time, with rests between, has a place in steadying and strengthening the heart. If the kidneys are not functioning properly, theobromin sodiosalicylate, 10 grains (0.6 gm.), in water, at four hour intervals, may be used. High blood pressure, with thickened tortuous arteries, would suggest a trial of nitroglycerin and the nitrites. In the application of the various therapeutic measures which come under this heading, we are oftentimes alleviating conditions remote from the heart, or, we are acting on structures which are capable, at least temporarily, of relieving the heart of some of its load.

Third, we must consider the judicious use of remedies which will stimulate, or act directly upon, the heart muscle itself. In this connection, as a matter of course, digitalis is the first drug that comes to mind, since it is very justly known as the king of cardiac tonics. If myocardial change has arisen from an extension of, and is, in fact, part and parcel of, an old, chronic and well marked endocarditis, which is accompanied by valvular leakage, hypertrophy, dilatation and dropsy, digitalis may give brilliant results, at least in the earlier stages of the case. However, as we all know, even in this type of case, there comes a time, late in the clinical history of the disorder, when even digitalis is unable to revive the failing heart. This occurs in the exceptional case. In, perhaps, most of our cases, and this is especially true in the type of case that proves most desperate, intractable, and hardest to diagnose and treat, endocarditis is not present at all. There is neither hypertrophy and dilatation nor dropsy. In this relatively large class, digitalis is disappointing, and is very limited, indeed, in its range of usefulness. Here, large doses of this drug are actually harmful. In these instances digitalis, if used at all, should be used only in small doses over moderate periods of time and not as a routine measure. If we believe that the drug is benefiting our patient to a certain extent, we should make occasional and appropriate use of it, according to the indications.

Strophanthus is advocated by many clinicians for its supposed influence on the heart muscle. This drug does not produce vasoconstriction of the arterioles; hence it does not raise the blood pressure. It is also asserted that it does not produce nausea. I believe, however, that this statement is questionable. If the patient is in desperate straits, if the circulatory embarrassment is extreme, if digitalis and the other measures that are being employed are not helping much, temporary, but distinct, benefit may be obtained by using strophanthin, $1/100$ grain (0.0006 gm.) by hypodermic injection, intravenously, at two or three day intervals. The patient should be watched closely and not more than three or, at the outside, four doses should be given. A word of caution is necessary regarding the use of strophanthus. It should never be used at the same time as digitalis, for death may be the result. A minimum period of at least a week should elapse after the last dose of digitalis is taken before the administration of strophantus is begun.

Cane sugar, 2, 4 or 6 ounces (57, 113 or 170 gm.) a day, is supposed to have a nourishing effect on the weakened heart muscle. It is well thought of in certain quarters, especially by English writers and clinicians.

The whole subject of treatment may be condensed thus:

1. There are no specifics.
2. Drugs are secondary in importance to the other measures mentioned in this paper.
3. Much will depend on the physician managing the case, upon his skill and ability to collect, summarize and properly evaluate all of the various and intricate factors entering into the case.

If any benefit is obtained, it will be secured by working along these general lines: (*a*) All measures that will tend to make easy the work which the crippled heart has to do should be adopted. (*b*) Appropriate use should be made of all measures that will tend to combat, or retard, the progress of the degenerative changes. (*c*) The judicious use of remedies which will stimulate or act directly upon the cardiac muscle itself is demanded.

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ABSTRACT OF DISCUSSION

Dr. W. E. Simmonds, Chicago: I have been using strophanthus and I find that, as a rule, the dose given in books is too large. I use one fourth of the regular dose. I generally give a digitalis preparation, and then, when the effect begins to be lost or becomes ineffectual, I continue with strophanthus. I use the ampule containing $\frac{1}{100}$ grain of strophanthin, or the tincture.

Dr. William A. Jenkins, Louisville: I am heartily in favor of instrumental means of interrogating the heart and freely utilize such of them as are available to me. The electrocardiograph is destined to become the most valuable of the group. Like all other laboratory procedures, however, its value is confirmatory rather than conclusive. The man who is willing to commit himself on the question of prognosis from cardiographic readings alone is exceedingly injudicious and indiscreet and he will soon come to grief. Single or isolated readings are not dependable. Readings must be had under varying circumstances of rest and exercise, and they must be studied in connection with the carefully gathered clinical data in the given case if they are to be of real value. Again, at this date, information is furnished by the electrocardiograph to only an exceedingly small number of physicians, whereas, the clinical measures which I have emphasized in my paper, in addition to being accurate and dependable, are available to every practitioner in every locality.

THE RELATION BETWEEN MIGRAINE AND EPILEPSY

WITH ESPECIAL REFERENCE TO THE CARDIOVASCULAR DISTURBANCES IN MIGRAINE *

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CLEVELAND

The occurrence of migraine and of epileptiform convulsions in the same patient has been noted by many observers, Flatau,[1] in his exhaustive monograph on migraine, stating that among 500 personal observations these conditions appeared in the same patient in thirty-six instances, approximately in the proportion of 1 to 14. My own interest in this subject was first aroused by two patients who came under my observation several years ago. In these cases, the epileptiform seizures occurred after the attacks of migraine had persisted for many years, the epileptiform attacks being either coincident with or replacing an attack of migraine. The point of especial significance in these patients, according to my conception, was the progressive development of well-marked cardiovascular changes. The purpose of this presentation is to direct attention to the etiologic significance of this factor in cases of this type.

REPORT OF CASES

Case 1.—A man, aged 54, consulted me in May, 1908, because of a temporary aphasia which had developed at the onset of an attack of migraine; at the same time he experienced a numbness in the right arm and a sense of weakness. These passed off in a few hours, but the attack of migraine which followed was severe. The arteries were comparatively soft, the systolic blood pressure, 140. The urine showed no albumin or casts, and, with the exception of a chronic infective arthritis, the patient's general physical examination revealed nothing abnormal.

Because of the arthritis, I had the opportunity of following this patient closely until he died, March 30, 1918. During this period he had had several attacks of severe migraine, some of which, like the one described above, were accompanied by aphasia, with numbness and weakness in the right arm.

In 1914, the urine began to show a trace of albumin and a few casts, and the total quantity of urine passed at night was increased. At the same time the blood pressure was elevated, so that an average of various readings taken during 1914 showed a systolic blood pressure of 152, diastolic 90; an average of the blood pressure readings during 1915 showed systolic pressure, 164; diastolic 98; during 1917, the average systolic pressure was 185, diastolic 105; there were signs of hypertrophy of the heart, and the arteries showed increasing sclerosis.

In July, 1915, the patient had a severe attack of migraine which, like the others described above, was accompanied by aphasia and numbness of the right arm. This attack persisted for eight hours, at the end of which he had a severe generalized convulsion followed by a period of unconsciousness which lasted for six hours and was followed by paralysis of the right side of the face, right arm and right leg, with complete motor aphasia. Within forty-eight hours the patient had regained completely the use of his right arm and right leg, and the power of speech returned. He had four more of these attacks before his death in 1918, the last one being followed by a period of unconsciousness from which he did not rally.

Necropsy disclosed a general arteriosclerosis with advanced arteriosclerosis of the cerebral vessels, but no evidence of hemorrhage; left ventricular hypertrophy of the heart, and a small, contracted, arteriosclerotic kidney.

Case 2.—A woman, unmarried, aged 36, was under my observation for six years. Her father died at the age of 50 from an attack of angina pectoris; her mother died at the age of 73 from carcinoma of the uterus. She had four brothers and one sister living and well, none of whom had had attacks of migraine. Until five years before she first consulted me the patient had always been well, except that she had had frequent attacks of migraine of the ophthalmic type. She usually had a definite warning of the onset of the migraine from the appearance of flashes of light in front of the eyes and at times a definite fortification spectrum in the right eye. The attacks of migraine were sometimes so severe that the patient was completely incapacitated for several days.

Five years ago the attacks of migraine were replaced by epileptiform convulsions. These epileptiform attacks came on without any definite aura, and consisted sometimes of but one convulsion, at other times of several convulsions within a period of twenty-four hours. The intervals between these attacks varied from one to four months. The patient always remained in a semiconscious, stuporous condition for several hours, and afterwards had no knowledge of what had occurred, thinking that she had had an ordinary attack of migraine. Within the last two years there has been a gradual mental deterioration. During the last six years the patient has had a gradually developing, well-marked arteriosclerosis, the systolic blood pressure varying between 160 and 200, the diastolic between 100 and 110. In 1920 she had two attacks of paroxysmal tachycardia, each lasting between two and three hours. The urine always showed a trace of albumin and some casts.

In April, 1921, a complete diagnostic study of the patient was made. The general physical examination revealed nothing of importance beyond a well-marked arteriosclerosis with moderate cardiac hypertrophy. There was a moderate grade of anemia, 3,169,000 red blood corpuscles, 60 per cent. hemoglobin, and 7,800 leukocytes. Blood chemistry examination revealed: blood urea, 8.6 mg.; blood sugar, 106 mg.; blood chlorids, 586 mg. per hundred cubic centimeters. The excretion of phenolsulphonephthalein for two hours was 90 per cent. A roentgenologic examination of the gastro-intestinal tract revealed a marked gastroptosis and coloptosis. No focus of infection in the teeth or sinuses was revealed by the roentgen ray. The patient died a few days ago from a carcinoma of the splenic flexure of the colon. No necropsy was obtained.

COMMENT

In each of these cases the appearance of the epileptiform attacks was coincident with progressive cardiovascular changes which were so marked as to suggest strongly a direct etiologic significance.

In a study of the literature pertaining to the association of migraine with "epilepsy," the foregoing point has therefore been especially borne in mind. No

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* From the Cleveland Clinic.

* Read before the Section on Practice of Medicine at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

[1] Flatau, E.: Die Migräne, 1912 (includes a very extensive bibliography).

attempt has been made to give an exhaustive discussion of the literature as a whole, and I shall present only a brief summary of the outstanding features of the reported cases as presented by various observers.

Cases of migraine associated with convulsions fall into three groups, according to the sequence of the attacks.

The first group comprises those cases in which the migraine appears first, the epileptiform attacks appearing later, often after many years. The cases described above belong to this group. In these patients the convulsions may accompany an attack of migraine or may replace it. It is significant to note that in most of the reported cases which belong in this group the epileptiform attacks first appeared after the patient had reached the age of 40, an age when cardiovascular changes are more likely to be present than in earlier years. In women, these attacks of epilepsy usually occur at the menopause, when we know, as stated by Riesman,[2] that hypertension is likely to develop.

The second group consists of cases in which epilepsy appears first, attacks of migraine making their appearance later. Two typical cases are described by Kovalevsky and Féré. Kovalevsky's case was that of a 16 year old girl, whose father had suffered from syphilis and whose mother had suffered from headaches. From her third to her fifth year she had had epileptic attacks, but since her twelfth year she had suffered from migraine alone. Féré describes the case of a woman, aged 41, who in her eighth year had suffered from right sided convulsions. For eight or ten years she had attacks of numbness in the right hand, sometimes in the right leg, accompanied by a twitching of the mouth. These attacks occurred early in the morning and lasted for an hour. These were the only symptoms of which she complained for a year, but for the last two years she had suffered from ophthalmic migraine, with entoptic scotoma and hemianopia.

The third group comprises those cases in which the migraine and epileptiform attacks alternate. Gowers[3] has reported two interesting cases of this type, one of which he thus describes:

> A physician, aged 38, whose family history included gout and migraine, but neither epilepsy nor insanity, since the age of 15 had suffered from characteristic migraine, the headache being preceded by visual spectra. At the age of 7 he had had some brief attacks of micropsia in which objects seemed small and far away, without headache (Gowers states that this is an occasional aura in epilepsy and may occur alone). At the age of 20 the patient had attacks in the early morning which lasted for a few seconds and were characterized by a peculiar flavor and a brief dreamy sensation lasting for a few seconds. After these had gone on for a few weeks, a distinct epileptic convulsion occurred in the afternoon but no more. Other minor attacks followed, now a sense of smell, not of flavor, and a brief confused feeling, instead of a 'dreamy' state. These ceased, and the headaches returned which had been absent during the epileptic period, but they were no longer preceded by the visual sensation. They ceased, however, on the return of still slighter minor attacks without any sensation, consisting only of a brief inability to speak, so brief as to be seldom noticed. After a time, these also ceased, and there was no recurrence of the headaches.

The question that naturally occurs to any one who has seen migraine and epilepsy in the same patient, or who has studied the cases reported in the literature, is whether there is a definite etiologic and pathologic relationship between the two conditions, or whether the occurrence of the two conditions in one individual is entirely a coincidence. In both diseases we sometimes have an aura, though in migraine the aura, which often appears as numbness of the upper extremities, is likely to be prolonged for thirty minutes or an hour. In both diseases the attacks are followed by somnolence. One cannot be surprised that Wernicke,[4] in 1881, stated that migraine is often united with true epileptic symptoms, and is sometimes the forerunner of an epileptic attack. This relationship between the two neuroses has been accepted by Sieveking, Parry, Marshall Hall, Liveing, Charcot, Féré, Berbex and others.

A hereditary relationship between the two diseases has been observed by Moreau, Revington, Liveing and others. They call attention to the fact that not uncommonly one finds migraine in one brother or sister and epilepsy in the other. Féré mentions the fact that, from among 308 epileptic men, in eighty-eight cases the father, and in 116 cases the mother had had migraine; and that from among 288 epileptic women, the children of forty had migraine. On the other hand, other observers, in particular Krafft-Ebing[5] and Bernhart, hold the opinion that there is no close relationship between migraine and epilepsy. Gowers calls attention to the fact that there may be some relation between the two, but the actual evidence thereof is very slight. He says that in only a single case has he been able to deduce a direct relation, i. e., in this case the same premonition preceded the attacks both of epilepsy and of migraine. Gowers believes that we are hardly justified in saying more than that in each malady there appears to be a slow development of a state of nerve tension which is finally relieved by a violent functional disturbance. The character of this disturbance, however, differs very much in the two diseases. Gowers also calls attention to the difference between the sensory and the visual aurae in the two conditions. Rachford has attempted to show a definite relationship between epilepsy and migraine by the presence of increased amounts of paraxanthin in the urine in both diseases; but he reports only one case of epilepsy in which paraxanthin was found, though it appeared often in migraine.

A careful summary of the literature would lead one to believe that there is no very close relationship between the epileptiform attacks and the migraine, and that when convulsions do occur they are due to the vascular changes which occur during an attack of migraine. Some of the cases that are referred to in the literature, such as cases of petit mal in patients who have had migraine, are undoubtedly due to the psychic disturbance which results from the vascular instability which is seen during an attack and are not cases of minor epilepsy at all. That marked vascular disturbances do occur during the course of an attack of migraine is shown by the fact that the patient often has visual disturbances and may often have numbness or weakness in one extremity. The visual disturbances which are associated with migraine are probably due to spasm of the blood vessels supplying the occipital lobe. These visual disturbances may take the form of a bright light in front of the eye which gradually increases in size, or there may be a definite fortification spectrum on one side of the eye that is affected. This fortification spectrum may show many different colors and different arrangements. Sometimes the interference with vision is so marked as to cause temporary blindness. It is not at all uncommon to find temporary aphasias, numbness or a paralysis in one upper extremity associated with these attacks of ophthalmic migraine. One can very easily imagine that when the vascular spasm is severe, and when it affects not only the sensory but also the motor area, particularly in individuals in whom the nervous system is unstable, an epileptiform convulsion will result. Just as some children will develop convulsions in the presence of a slight elevation of temperature, so certain individuals may develop convulsions as the result of any disturbance of the blood supply of the brain, particularly of a cerebral anemia. The association of cerebral anemia with migraine is evidenced by the fact that these patients often feel extremely faint and have marked vertigo. The presence of a vascular instability explains also the fact that many patients who have had migraine in earlier years develop convulsions at the time of the menopause, when arterial hypertension is likely to develop, particularly in persons of the obese type. On this basis could be explained also the development of epileptiform phenomena in elderly persons with well marked arteriosclerosis, especially arteriosclerosis of the cerebral type, such as was indicated in Case 1, reported above. In this case evidence of intermittent closing of the cerebral artery was presented by the attacks of transient aphasia, the convulsions developing later, as the arteriosclerosis with arterial hypertension became more marked. The correct assumption in this case could be that the more severe epileptiform attacks with convulsions were simply due to more severe attacks of vascular spasm with cerebral anemia.

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[2] Riesman, David: Hypertension in Women, J. A. M. A. **73**: 330 (Aug. 2) 1919.

[3] Gowers, W. R.: Brit. M. J. **2**: 1617, 1906.

[4] Wernicke, C.: Lehbuch der Gehirnkrankheiten, 1881.

[5] Von Krafft-Ebing, R.: Ueber Hemikranie und deren Beziehungen zur Epilepsie und Hysterie, 1897.

According to my own experience, patients with migraine are much more subject to the development of arteriosclerosis, high blood pressure and chronic arterial nephritis than are other patients.

CONCLUSION

The epileptiform attacks which occasionally are associated with migraine would appear, like the migraine itself, to be due to some cardiovascular disturbance. That is, varying degrees of the disturbance which in one instance produces the aura, headache, and ophthalmic symptoms, which characterize a typical attack of migraine, in another may produce an aura of slightly different type with a convulsion. These epileptiform attacks, therefore, are incorrectly designated as "epilepsy." In the rare instances in which a true epilepsy does occur in an individual who is subject also to attacks of migraine, the occurrence is undoubtedly merely a coincidence without essential etiologic or pathologic relationship.

ABSTRACT OF DISCUSSION

Dr. Julius Grinker, Chicago: I agree with Dr. Phillips that epilepsy which occurs in migraine or follows migraine is not caused by migraine but by cardiovascular changes. The cardiovascular changes may be the cause of epileptiform convulsions which may occur in a patient the subject of migraine or in one who is free from migraine. There is, however, a relation between epilepsy and migraine. What that relation is we do not know. The cause of epilepsy is as little known as that of migraine. The fact is, we occasionally see patients with migraine who have epileptiform phenomena and vice versa. Years ago I saw a patient said to be suffering from epilepsy who was about to be subjected to Reed's abdominal operation. I diagnosed true migraine with so-called epileptiform phenomena. There was temporary weakness in the lower extremities and transient loss of vision, which was interpreted as epilepsy with loss of consciousness. It was merely an unusual phenomenon accompanying certain forms of migraine. I saved him from Reed's mutilating and dangerous operation. I gave him cannabis indica in the usual way, and he has been free from migraine for twelve years and is not now the subject of cardiovascular changes. I do not believe that many patients develop cardiovascular changes on account of migraine. Patients with migraine with motor phenomena are sometimes treated for syphilis. A patient who had migraine had an apoplectiform attack in one extremity, which was interpreted by his physician as syphilis. The diagnosis was incorrect. The patient has remained well for many years after a course of intensive treatment with cannabis indica. Migraine is peculiar in that it may also simulate several organic diseases. I am glad Dr. Phillips brought out that, while epilepsy may occur in a migraine patient, the epilepsy is not caused by the migraine, but is the result of cardiovascular changes. Migraine and epilepsy are associated in some way. A mother may have migraine and the daughter may suffer from epilepsy. For diagnosis it is well to know that when a patient comes with an uncertain description of an attack which may be taken as epileptiform, while the mother gives a history of migraine, one must seriously consider epilepsy in the child, and that the opposite may also occur.

Dr. John Phillips, Cleveland: I have nothing further to add, except to emphasize the points Dr. Grinker has brought out and to state that I believe that cases of migraine are often incorrectly diagnosed as epilepsy of the petit mal type or other organic diseases of the central nervous system.

SOME POINTS IN PHYSICAL DIAGNOSIS *

DAVID RIESMAN, M.D.

PHILADELPHIA

The four topics I have chosen for discussion are perhaps not of fundamental importance, but will, I hope, prove of value to the clinician. I shall present them with utmost brevity.

MOVABLE DULNESS NOT ALWAYS A SIGN OF FLUID

It is almost universally believed that movable dulness in the chest is a sign of the presence of fluid. So firmly is this belief held that when the other signs of effusion are equivocal, this one is commonly permitted to determine the diagnosis. I should like to point out, however, that in some instances movable dulness is produced by another cause.

In the cases that I have in mind, what seems to be fluid is in reality the liver changing its position. When the patient is sitting up or standing, the liver is found to be one or two interspaces higher than it is when he is lying down, a striking change in resonance being in consequence produced. I take it that when this phenomenon occurs, it is due to a softness of the liver, causing it to rise when the patient stands up and to fall when he lies down. It is possible that the state of tonus of the diaphragm is an additional factor in its production.

In order not to be misled, it is necessary to locate carefully the apex beat, and to determine whether or not it is displaced to the left. One must also look for movable dulness in the axilla, as well as in front; and in very obscure cases recourse must be had to the roentgen ray or to tapping.

ULNAR PERCUSSION

In a number of obscure cases of suspected gallbladder disease, the ordinary method of eliciting tenderness proves fruitless. The discovery of a tender area

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* Read before the Association of American Physicians, Washington, D. C., May 2, 1922.

would greatly aid in the diagnosis, yet one may press as firmly as is justifiable, and the patient will not complain. For such cases, the late John B. Murphy recommended fist percussion. That, however, appears brutal, and may not be without risk. As a substitute for it, I have found ulnar percussion very satisfactory; others, I am quite sure, have had the same experience.

The method of employing it is simple: The patient is asked to take as deep a breath as possible and to hold it. Then suddenly one strikes a quick but not hard blow over the upper part of the right rectus muscle, with the ulnar side of the hand. If there is any disease of the gallbladder, the blow will cause a sharp pain. If one is in doubt as to whether this pain is superficial and due to the blow on the integument, all that is necessary is to perform the test on the left side.

The same method of ulnar percussion is applicable to the determination of sensitiveness over the kidneys. By striking the loin at right angles to the long axis, it is possible to localize pain due to stone or to inflammation in and about the kidney. I am quite sure that it permits of a sharper localization than does fist percussion. Here, also, it is necessary to compare the two sides.

CLAVICULAR AUSCULTATION

It is often of interest to determine whether or not an aortic murmur is transmitted into the neck. By the customary method of placing the stethoscope over the cervical vessels, a murmur is at times created by pressure. Even a very gentle application of the stethoscope may produce a murmur. To avoid this source of error the stethoscope, which must be either a Bowles or some other form of diaphragm stethoscope, should be placed over the clavicle. If the murmur is a transmissible one, it will be well heard all along the bone, where no artery can possibly be pressed upon.

This method is also of value in another respect. Frequently one encounters cases of marked hypertension, in which by every rule the aortic second sound should be accentuated, but in which it is found not to be loud. In a number of such cases, in which the second sound at the aortic area was not at all in keeping with the height of the pressure, I have heard a loud second sound over the clavicles. I would explain this anomaly on the theory that some extrinsic mechanical factor interferes with the transmission of the intensified second sound to the usual place of auscultating, in the second right interspace. The same factors do not interfere with the audibility of the sound over the clavicles. This is really a very striking phenomenon, although not a common one.

Diastolic aortic murmurs are also often well heard over the collar bone.

TRANSDIGITAL AUSCULTATION

Timing heart murmurs is not always easy. This is particularly true of mitral murmurs. The question frequently arises as to whether one is dealing with stenosis or with regurgitation at the valve orifice. Timing by means of the radial pulse is unreliable, and by means of the carotid is also not very satisfactory. Several years ago I described a method that has proved of considerable help in this matter. I have called it "transdigital auscultation." To practice it, it is necessary to employ a diaphragm stethoscope, and not one of the bell type. The index or middle finger is flexed at a right angle, and its tip is placed directly over the apex beat. The stethoscope is then laid on the horizontal phalanx of the flexed finger, at the angle. It will be found that murmurs may be heard nearly as well through the finger as when the stethoscope is placed directly on the chest; and, since auscultation and palpation are performed at the same place, it is obvious that one can tell readily whether a murmur occurs before the finger is lifted, synchronously with the lifting, or afterward. The method also serves well for eliciting the Duroziez murmur in cases of aortic insufficiency. This murmur, really a double murmur, is heard in the femoral artery when pressure is made on it with the stethoscope just below Poupart's ligament. Sometimes the pressure is distinctly painful; at others, the stethoscope disk is too large for making satisfactory compression. If the artery is not properly compressed, only one sound is heard. By transdigital auscultation, the drawbacks just cited are obviated—the to and fro murmur can readily be brought out by regulated pressure with the tip of the finger.

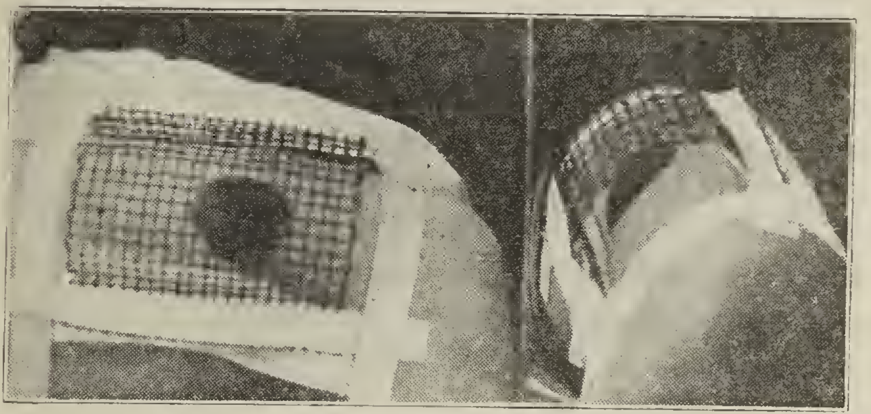
1715 Spruce Street.

Clinical Notes, Suggestions, and New Instruments

SIMPLE PROTECTION FOR NEWLY PLACED SKIN GRAFTS

Frank Ward Smythe, M.D., Memphis, Tenn.

Having used such substances as paraffin gauze, perforated rubber tissue and tinfoil to protect newly placed Thiersch skin grafts, and not being entirely satisfied because they came in contact with the grafts, and also because the wound could not be inspected thoroughly without disturbance, several years ago I began using another method, which has proved entirely satisfactory.


Wire protection for skin grafts; grafted areas darkened.

The grafts, having been placed over the raw surface, are covered with a piece of Wright's flexible wire splint, cut to the size needed and bent somewhat like the Greek capital omega (Ω). This bending gives a smooth base for the protection apparatus to rest on, and also arches the surface so that it does not come in contact with the graft area.

Beneath the bases of the apparatus are placed several thicknesses of sterile gauze to protect the underlying skin from pressure. Next, strips of adhesive are placed over the flanged part of the wire, which extends outward across the gauze padding to the skin. This firmly fixes the apparatus in place.

Over this arched wire covering, the gauze or bandage dressing is applied. When the wound is to be inspected, all there is to do is to remove the dressing, leaving the wire protection in place; thus there is no disturbance of the graft area.

I have used various kinds of material for making this simple apparatus, but finally decided on a piece of Wright's flexible wire splint because it is light, easily bends to the desired shape, and is strong enough to support any kind of dressing; its holes are amply large for one to observe the wound, and it can be sterilized.

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SATURDAY, JUNE 24, 1922

LAXATIVES AND BLOOD CONCENTRATION

The use of laxatives and purgatives is so widespread, and their administration is so largely independent of medical advice, that any untoward effects attributable to these drugs may easily escape notice. Lately a number of instances of cutaneous manifestations due to the use of phenolphthalein as a laxative drug have been brought to the attention of physicians, particularly by dermatologists to whom the puzzling cases of dermatitis have been referred for diagnosis.[1] Phenolphthalein is only one of the substances—almost countless mixtures, either as pharmacopeial preparations or as proprietary concoctions—belonging to the category of "household remedies." How they act and what harm they may institute under exceptional cases is rarely asked; for laxatives have come to be looked on solely as "unmixed blessings." Yet it requires little study of available scientific literature to bring conviction that the ideal evacuant is still to be described.

The saline laxatives probably enjoy at present a greater popularity than any other group. Underhill and Errico[2] have recently demonstrated that when magnesium sulphate (Epsom salt), sodium sulphate (Glauber's salt) or potassium and sodium tartrate (Rochelle salt) are administered experimentally in doses capable of producing diarrhea, a distinct concentration of the blood may take place, whereas no such phenomenon attends the laxative use of castor oil or of cascara sagrada, as representatives of the group of vegetable purgatives. Evidently the water discharged through the bowel movements is derived from the blood and tissues in the cases in which the saline compounds mentioned are employed. Ordinarily such concentration of the circulating medium would excite little interest. But since the studies of the effect of the lethal war gas, as well as of influenzal and other types of pneumonia, have assigned to blood concentration a pathologic significance not recognized or at least not duly appreciated a few years ago, it is quite conceivable that undue concentration of the blood from any cause may lead to distressing symptoms. According to Underhill's comprehensive studies in this field, concentration of the blood is not of itself dangerous until a point about 125 per cent. above normal has been reached. However, despite this large "factor of safety," the advice of Underhill and Errico seems timely. The fact that purgatives exert a definite influence in the direction of concentrating the blood indicates that care should be exercised in the administration of purgatives in disease conditions, especially in those states known to be responsible for concentrated blood. By the ill-advised use of purgatives, these authors state, it is apparent that blood concentrated to some extent, and yet not sufficiently concentrated to be dangerous in itself, may reach a dangerous concentration by the added influence of the purgative. Such a factor may account in part for the collapse which at times follows the administration of a purgative.

Pharmacologists have repeatedly pointed out[3] in connection with the use of saline evacuants that probably moderately dilute solutions would be more serviceable than the concentrated ones commonly used. The latter are preferred because of the lessened time required to drink a disagreeably bitter dose; but unless the removal of an excess of water from the tissues is one of the ends sought, such laxatives should always be subsequently diluted by an adequate water intake. Hatcher and Wilbert[3] have pointed out that one especial advantage which natural mineral waters have over the solutions of purgative salts, as usually employed, is that they are very dilute, and the patient is thus required to consume a fairly large amount of water with them. This advantage can be secured so easily, however, by attention to the proper dilution of purgative salts that it is not sufficient to justify the expense of the natural waters.

THE WATCH AND THE PULSE RATE

It often happens that the things which are nearest to us in everyday life give us least concern, for they seem to be part and parcel of the routine of existence. Usually some extraordinary occasion is required to awaken an appreciation of an undervalued factor which may represent the outcome of a long struggle for acquisition, or tedious years of investigation. Serious disease menaces of a few decades ago may be forgotten in the security that modern preventive medicine or sanitary science has afforded. With the blessing of anesthetic and analgesic drugs at our disposal, the days of unallayed pain in the experience of the physician seem ancient and almost mythical. Fortified with the stethoscope and the hypodermic syringe, the practitioner follows his duty with little thought of the times, not so long ago, when there were few helps to success other than his unaided senses, his native ingenuity, and a few traditional concoctions or procedures.

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[2] Underhill, F. P., and Errico, L.: The Influence of Purgatives on Blood Concentration, J. Pharmacol. & Exper. Therap. **19**: 135 (March) 1922.

[3] Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, p. 293.

No detail in medical practice is repeated more frequently than is the counting of the pulse. The physician is commonly pictured, watch in hand, determining the rate of the heart beat through count of the arterial pulse. An accurate estimate of this factor requires an instrument of precision to mark some definite interval of time. The timepieces now in use are comparatively modern inventions. In his Fitzpatrick lectures on Greek Medicine in Rome, Sir Clifford Allbutt[1] has designated Herophilus as the first physician to count the pulse—it is said by a water-tube clock—and thus to bring it definitely into semeiology. It is occasionally stated that the German cardinal Nikolaus Krebs of Cues on the Moselle, who lived in the fifteenth century, suggested devices for counting the pulse, though there is no evidence that his schemes were ever carried out. Galileo counted the pulse by means of a pendulum; and the late S. Weir Mitchell[2] has left an interesting account of the pulsilogium of those earlier days when real timekeepers suitable for pulse counting did not yet exist.

In a recent essay on the history of pulse timing, Rosenbloom[3] of Pittsburgh has called attention anew to the deserts of Sir John Floyer as the first of the moderns to make regular observations on the rate of the pulse, counting the number of beats in the minute by the watch. Before this time, though other points connected with the pulse had been extensively studied and pulse doctrines abounded in great numbers, the record factor had been neglected. The ordinary watch used in Floyer's time had only a single hand. It recorded neither minutes nor seconds. Floyer's "physician's pulse watch" ran only sixty seconds, the date 1707 marking the year of the announcement of its medical application.[4]

In these times, when even seconds count much, it seems odd to hark back to a period only two centuries ago, when evidently the minute had not yet entered the daily life of man. While the doctrine of the specific pulses—a pulse for every malady—was dying hard in the days of "observation gone minutely mad, a whole Lilliput of symptoms, an exasperating waste of human intelligence," as Mitchell has written, the pulse rate so much stressed in these later years was rarely heard of. It seems incredible, says Mitchell, but not until the later French school developed its force can one find in reports of cases the beginnings of those systematic numerations of the breath and the pulse which are encountered in modern case records. It remained for the influence of the great Dublin school, to which Riesman[5] has lately paid literary tribute, to bring about conditions under which the familiar figure of the physician, watch in hand, has become commonplace. This timepiece has become a medical instrument of precision, and has given accuracy to the estimate of the heart rate. "We could better lose this knowledge," Mitchell has written, "than the rest of what the pulse teaches, and yet it is the only pulse sign we can put on paper with perfect precision, as Heberden remarked a hundred years ago."

TUBERCLE BACILLI AND LIVING CELLS

In a lecture on tuberculous infection, before the Harvey Society of New York, Krause[6] remarked that, at its culmination, every case of tuberculosis represents, in some degree, the fruition of a long sequence of accidental circumstances. The tubercle bacillus, gaining entrance into the organism through some mucous surface, is brought into contact with a considerable variety of tissues composed of living cells. Presently a place of focalization may be reached from which at a subsequent period new paths of dissemination are followed in the organism, so that there must continually be some possibility of interrelation between the bacilli and tissue cells from which either group may suffer.

Of late, considerable attention has been directed to the behavior of living cells toward foreign particles. The introduction of ready methods of tissue culture has greatly facilitated such studies. Phagocytosis has, of course, long been recognized as an instance of reaction between cells and environmental substances. What the nature of the response on the part of irritable protoplasm is remains unsettled. A recent writer has remarked that the long familiar hypothesis by which the cell makes purposeful movements toward taking in a foreign body, and ingests or engulfs it, is rapidly being replaced by the more recent interpretation that the coming together of the cell and the foreign body is a purely chance occurrence, and that the taking in of the foreign body is a physical phenomenon.

An investigation of the behavior of tubercle bacilli in tissue cultures by Smith, Willis and Lewis[7] at the Johns Hopkins Hospital has shown that these micro-organisms can be taken in by many types of cells—clasmatocytes, fibroblasts, white blood cells, endothelial cells, mesothelial cells, ectodermal cells, liver cells, kidney tubule cells, and cells lining the bronchioles and alveoli of the lungs. No micro-organisms were observed in red blood cells, striated muscle cells, nerve cells, or ciliated epithelial cells subjected to the bacilli. The phenomena accompanying the appearance of tubercle bacilli within these cells were precisely the same as those shown by similar cells in regard to other foreign bodies. Entrance into cells was dependent on the consistency of the cytoplasm of the cell, the composition of the foreign body, and also the position of the foreign body in relation to the surface of the cell. Contrary to the generally accepted idea, the cell did not make any active movements toward the bacillus, nor was any migration of bacilli toward the cell observed. Once inside the cell, the bacilli were moved back and forth in the cytoplasm in a manner characteristic of included foreign bodies. In course of time a small vacuole formed about the micro-organism, which was eventually destroyed. It is quite conceivable that, in the living body, the presence of some tissue component or circulating chemical substance might lead to a different reaction between cell and bacterium. Perhaps the capacity of cells to master the tubercle bacilli under appropriate conditions without appearance of unusual cellular phenomena may help to explain in part how the organism, which may be presumed to be subject to repeated invasions by a widely distributed particulate enemy, after all scores so many successes in the fight against it.

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[2] Mitchell, S. W.: The Early History of Instrumental Precision in Medicine, Tr. Cong. Am. Physicians and Surg. **2**: 174, 1891.

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[5] Riesman, D.: The Dublin Medical School and Its Influence upon Medicine in America, Ann. Med. Hist. **4**: 86 (March) 1922.

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RICKETS IN INDIA

In his Cutter Lecture on the rickets problem, at the Harvard Medical School a few weeks ago, Hess[1] remarked that advance in our knowledge of this disease promises to be greater during this decade than throughout the preceding 250 years. The newer studies of nutrition have been responsible for the support of the view that dietary deficiencies play a very significant part in the etiology of rickets. Thus it has become possible, by means of carefully controlled changes in the regimen, to produce experimentally in animals an almost exact analogue of rickets in children. The abnormal deposition of calcium salts so characteristic of the bones can be instigated in several ways involving the lack of one or more now recognized essentials of the diet. However, rickets occurs at times in human cases under conditions in which the food supply seems to be beyond serious criticism with respect to calcium, phosphorus, protein or vitamins, deficiencies of all of which have been believed to contribute to a disturbance in the metabolism of the osseous tissues. In instances of this sort, hygienic conditions, such as the lack of fresh air and exercise, have been vaguely proclaimed as the determining causative factors. Referring to the rôle of environmental factors, Hess remarks that, after years of discussion and disagreement, those who upheld the dietetic theory, as well as those who maintained the hygienic theory of origin, have been found to be right. It has been clearly demonstrated that rickets can be prevented or cured by means of light rays—either the artificial rays of the mercury vapor quartz lamp, or by sunlight. The fact that such dissimilar agents as diet and sunlight can both be of prime importance in connection with the origin and cure of a disease has not only tended to a broader conception of rickets, but, Hess adds, has also led to a larger point of view of nutritional disorders in general—an attitude that will undoubtedly prove fruitful.

The association of rickets with poverty and overcrowding can now readily be interpreted as due to either poor diet or lack of sunlight, or both. It has begun to appear, however, that the disease is by no means missing among the families of the well-to-do. A most interesting study of the relation of rickets to diet and environment has been made in the Nasik district of the Bombay Presidency by Hutchison and Shah.[2] There the population is made up of two strata: an upper class of well-to-do Hindus, and a lower group of laborers who are uneducated and poor. Rickets occurs almost exclusively among the better situated first class. Their dietary appears to be far superior to that of the poorer classes, among whom the disease is almost completely absent. The larger consumption of milk and ghee (native butter) entails to the most extensively suffering class a greater supply of vitamin A, lack of which has been charged by English writers in particular with responsibility for the genesis of rickets. On the other hand, the mode of life enforced by social and religious customs on this group of persons, particularly among women and children who live mostly indoors, screened from public view, leads to a lack of fresh air, sunlight and exercise. Hence Hutchison looks on these as the most important etiologic factors in the production of rickets among the people referred to.

Hess[1] has given reasons for identifying the firmly established hygienic factor in the etiology largely with an adequate supply of sunlight. Its curative properties can be replaced by the rays of the mercury vapor lamp. Several years ago, the Glasgow school,[3] which has always been unswerving in its advocacy of the environmental etiologic factor, attempted a crucial experiment by keeping one lot of pups in the laboratory on a liberal diet of whole milk and porridge, while a duplicate lot was kept in the country on skim milk and oatmeal. The former developed rickets, while the latter failed to do so. Hutchison points out that the conditions observed by him in man in India are similar to the canine experiments. We must abandon the idea that rickets is necessarily a disease of poverty. Indeed, it is not missing in the breast-fed infants of the well-to-do. Furthermore, late rickets, or rachitis tarda, the disease found as late as the twentieth year of life in persons previously healthy and nonrachitic, has been discovered in India to be confined to women even on good dietaries who observed the purdah life of indoor existence. Thus sunlight has once more been demonstrated to be the enemy of disease.

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[2] Hutchison, H. S., and Shah, S. J.: The Aetiology of Rickets, Early and Late, Quart. J. Med. **15**: 167 (Jan.) 1922.

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Current Comment

TARANTULA TOXICITY

Folk-lore abounds in stories of phenomenal manifestations which often fail to survive the test of critical examination. Accounts of unexpected occurrences or unusual symptoms often grow like rolling snowballs, adding to their size with each step in the course of progress. Small effects may become magnified into great ones; suspicions develop somehow into the dignity of probabilities or even real facts. New traditions seem to spring up from undiscovered sources. Something of the nature of such mystic influences may account for the prevalent belief in the extreme danger associated with the tarantula. The fatal bite of these terror-inspiring insects has been widely proclaimed, so that they are given a wide berth by those who recognize them. The poisonous properties of various species of spiders is admitted by competent investigators.[1] Many of the insects have poison-secreting glands which discharge into the jaws. But there is little doubt that the danger from some of them has been greatly exaggerated.[2] Von Fürth[3] considers that the bite of the historically famous Italian tarantula is able to cause no more than local inflammation, while the toxicologist Kobert was unable to discover profoundly poisonous properties in the supposedly more dangerous Russian tarantula. Now the American tarantula, *Eurypelma steindachneri*, a species reaching the formidable looking adult size of more than 2 inches in length, has been exonerated from the reputation long attaching to it. Baerg[4] of the University of Arkansas has subjected both animals and man to attack by the fangs of active tarantulas. Although the accounts do not give the impression that such encounters are painless performances, they are put in the category of bee sting in severity rather than into the class of more menacing toxins. Even bees may produce fatalities; yet they are rarely classed among the greater dangers to life.

MEAT AND SCURVY

The fact that scurvy is not peculiarly prevalent among the peoples of the Far North living for the most part on animal food, who rarely have available those vegetable products which are prized as antiscorbutics, has been the subject of considerable discussion since the recent renewal of interest in a long known disease. Those investigators who have tested the protective power of meat against scurvy on the classic experimental animal, the guinea-pig, have almost without exception failed to demonstrate any antiscorbutic potency in muscle tissue. Against these findings stand the statements of Stefánsson[1] that scurvy was avoided during his arctic explorations by the use of large quantities of meat from freshly killed game, the tissue usually being eaten raw. The experimental investigations of Vedder[2] of the U. S. Army at Fort Sam Houston, Texas, corroborate the previous guinea-pig tests in showing that the administration of considerable amounts of erythrocytes, voluntary muscle, heart muscle and bone all failed to prevent the development of scurvy, or even to prolong the depletion period. The antiscorbutic factor is not present in these tissues in appreciable quantity. On the other hand, various viscera—the liver, lungs, spleen and pancreas—as well as the brain evidently possess antiscorbutic powers, as has long been known for the liver in particular. This demonstration in respect to glandular organs may account for native customs among tribes who live chiefly on a meat diet. Many of them esteem the organs as dietary tidbits. Vedder states that when the plains Indian had been without game over a considerable period, he was accustomed to open the freshly killed bison and eat handfuls of raw liver. It is stated that the Eskimos make a special effort to secure the liver of the seal, and that when hunters had Apache Indians as guides, the usual bargain was for the guides to take all the insides of the deer, leaving the meat for the hunters. Perhaps the seemingly unusual customs become susceptible of a plausible explanation in the light of the newer knowledge of nutrition. Perhaps, further, the distinction between meat, in the sense of muscular tissues, and glandular organs such as the liver and kidney, has not always been made by those who have reported dietary habits in relation to human scurvy.

SUCCESSFUL FIRST AID

"In August, 1921, a miner at Shock, Ky., was rendered unconscious by electric shock. A fellow miner, trained in first aid, immediately administered the Schaefer method of artificial resuscitation and saved the man's life." This is one of several instances of successful first-aid treatment by fellow workmen recently published by the Bureau of Mines in a report of investigation. The report is a reminder that certain knowledge and practices regarding first aid should be more generally known by the public. Accidents occur frequently, when physicians are inaccessible, but when immediate assistance may be of the utmost importance, as shown in another instance in this report. In this case a comrade made a tourniquet of his suspenders and stopped a hemorrhage that would have been fatal if this immediate aid had not been rendered. These men had been trained in first aid, and with that training they were enabled to save lives. A host of American citizens—soldiers, Boy Scouts, and others—have been so trained, but the great mass of citizens are entirely ignorant of the principles of first aid to the injured.

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Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Eradication of Typhoid Fever in the State.—According to statements by the state board of health, there has been a great reduction in the number of deaths from typhoid fever during the five years, ending Sept. 30, 1921. For the year ending September, 1917, the total number of victims of typhoid fever in Alabama, as reported to the Bureau of Vital Statistics, was 979, or 43.19 per hundred thousand population. By the adoption of all known modern methods of control and prevention, this number was reduced to 372 for the year ending Sept. 30, 1921, or 14.40 per hundred thousand population.

ARKANSAS

University of Arkansas.—With the resumption of the junior and senior years, the opening of the University of Arkansas Medical Department, Little Rock, will be augmented with an additional staff of instructors and full clinical facilities, it was recently announced by Dr. Morgan Smith, dean of the school. Under the new plan the city hospital, St. Vincent's Infirmary, St. Luke's Hospital and the Baptist State Hospital officially become affiliated with the school of medicine. The new curriculum will include a department of hygiene and public health, an innovation at the school. A special degree will be awarded those who successfully complete the course. Dr. Charles W. Garrison has been named professor of hygiene and public health, to serve during his term as state health officer.

CALIFORNIA

Honor for Physician.—A monument erected to the memory of the late Dr. George Waldo Bryant of Truckee, Nevada County, who died, March 14, was unveiled at the local cemetery, June 3, with impressive ceremonies. It bears the inscription "Sacred to a Faithful Friend and Public Benefactor, George Waldo Bryant, M.D., 1874-1922."

Board of Health Budget.—The San Francisco Board of Health budget for the coming fiscal year has been submitted and totals $4,000,000. This includes $15,000 for radium, $11,000 for a building to house women discharged from state institutions, $1,500,000 for new buildings at the Relief Home, and $500,000 for a new board of health building.

Personal.—Dr. Walter Lenker has been appointed county health officer, county physician and superintendent of the county hospital of San Bernardino County. These three positions have recently been combined, in an effort to advance the program of public health and medical improvement.——Dr. Ethel M. Watters, pediatrician and director of the bureau of child hygiene on the state board of health at San Francisco since 1919, has resigned to accept the position as consultant in the administration of the Sheppard-Towner Maternity Act.

CONNECTICUT

Personal.—Dr. Ross G. Harrison, Yale University, New Haven, has been elected an honorary member of the Royal Academy of Medicine of Turin.——Dr. Israel S. Otis has been appointed city physician of Meriden to succeed Dr. Howard DeForest Lockwood.

Yale-in-China Anniversary.—The twentieth anniversary meeting of the Hunan-Yale College of Medicine, Changsha, China, was held, June 18, in the Battell Chapel, Yale University, New Haven, during the two hundred and twenty-first commencement exercises of the university. Dr. F. C. Yen, principal of the Hunan-Yale College, and Dr. Edward H. Hume, chief of the medical department and general secretary of the college, spoke on the situation in China with reference to medical education. Charles B. Chatfield has been appointed in charge of the chemistry department for a period of two years. Dr. Arthur B. Dayton, New Haven, will sail for China, in July, to teach in the department of medicine at Changsha.

DISTRICT OF COLUMBIA

Housing Legislation Favorably Reported.—The committee on the District of Columbia has favorably reported the Ball bill designed in the interest of public health, comfort and morals, to discontinue the use of dwellings or buildings situated in alleys in the District of Columbia. The measure has already passed the Senate. Some minor amendments were included in the report to the House.

FLORIDA

Removal of Veterans' Bureau.—The state medical clinic, under the direction of the Florida division of the U. S. Veterans' Bureau, has moved its quarters at Jacksonville to the St. James Building. Capt. E. M. Bradshaw, subdistrict manager in charge of the Florida district headquarters, in announcing completion of the removal of the medical clinic to its new quarters, containing about 2,500 square feet of floor space, stated that the change would facilitate the work of passing on applications for benefits allowed by the Veterans' Bureau, in cases of former service men who incurred permanent disabilities during the World War.

GEORGIA

Tonsil and Adenoids Clinic.—Under the auspices of the department of child hygiene, the state board of health and the Parent Teachers Association, the first of several tonsil and adenoid clinics was recently held in Wilkes County. Dr. Arthur G. Fort, Atlanta, was in charge of the work.

New Medical Society.—The physicians of La Grange organized the La Grange Medical Association at a meeting held, June 1. This organization will be entirely independent of the Troup County Medical Society. Dr. Henry R. Slack was elected president of the new organization; Dr. Emory R. Park, vice president, and Dr. Emery C. Herman, secretary-treasurer. The primary purpose of this organization was to care for the medical library and to supervise the purchasing of additional volumes.

IDAHO

Medical Meetings.—The thirtieth annual meeting of the Idaho State Medical Association will be held in Wallace, July 10-11, under the presidency of Dr. Max T. Smith. The Pacific Northwest Medical Association will convene in Spokane, Wash., July 6-8. The Spokane Medical Society has arranged a caravan to transport the physicians attending the Spokane meeting to Wallace, Idaho, through the Fourth of July Canyon. The physicians of the Northwest are invited to attend the state meeting as guests of the Idaho State Medical Association and the Wallace Board of Trade.

ILLINOIS

Hospital News.—The cornerstone of the new Rickly Memorial Hospital, Springfield, will be laid, June 27.——The new World War veterans building at the Elgin State Hospital was dedicated, May 28. The building was erected at a cost of approximately $150,000 and will accommodate 250 patients.——The cornerstone of the new $300,000 Victory Memorial Hospital at Waukegan will be laid shortly.——On May 12, the cornerstone of the St. John or Huber Memorial Hospital Nurses' Home, Pana, was laid.——The cornerstone of the new Clinton County Hospital, Girard, was laid recently.

Personal.—Dr. Walter D. Stevenson, Quincy, has sailed for Europe, where he will take graduate courses in Vienna, Berlin and London.——Harry V. Atkinson, B.S., University of Illinois Medical School, has been appointed associate professor of pharmacology at the University of Texas Department of Medicine, Galveston.——Dr. Harry H. Hanly, Peoria, has been appointed a member of the state board of registration and education to succeed Dr. Lewis C. Taylor, Springfield, who resigned recently.——Dr. Albert E. Brown has resigned as county physician and superintendent of the Lake County General Hospital, Waukegan, to become effective, June 30.

Chicago

Health Training for Railway Employees.—At the annual convention of the Baltimore and Ohio Association of Railroad Surgeons in Chicago recently, a campaign to educate railroad employees regarding the danger of contagious and social diseases was initiated.

Personal.—Dr. Walter W. Hamburger has resigned as assistant professor of medicine at Rush Medical College, and has accepted the position of associate professor of medicine at Northwestern University Medical School.——Dr. Blanche A. Burgner was elected president of the Chicago Medical Women's Club, June 14.

A Plan for More Adequate Dental Service in Chicago.—As a foundation for a program for more adequate dental facilities in Chicago, a study of the systems for dental care in some large cities of the United States was made at the direction of Julius Rosenwald by Michael M. Davis, Jr. Rochester, N. Y., says Mr. Davis in his report, has the most comprehensive plan for dental work for children in this country. The center of Rochester's dental system is the Rochester Dental Dispensary, an institution founded by Mr. George Eastman, but governed by a board of directors, of which twelve are leading business men. The city in no way controls the institution, but contributes annually to pay for prophylactic dental work for schoolchildren. The average cost of visits to the dispensary in 1920 was $1.42. The cost of the dental department per chair was about $1,500, making an allowance for overhead. The centralized supervision of dental work in the schools through affiliation with the Rochester Dental Dispensary is one of the distinctive features of this plan. A system of school clinics without an affiliated central institution, such as that of Detroit, suffers severely in contrast. A plan, similar in some respects to that of Rochester, is recommended for Chicago by Mr. Davis. It should be developed, he suggests, under the following system: (1) a central institution of approximately sixty chairs; (2) four branches, approximately thirty chairs each; (3) school clinics (for curative work) located in outlying districts and supplementing the branches; (4) dental prophylaxis and instruction in oral hygiene for all schoolchildren, to be done in the schools, according to the Rochester plan, by traveling squads of hygienists under centralized dental supervision; (5) the central institution to be under an independent board, but affiliated with medical and dental education, and with a general hospital; and (6) dental research to be an integral part of the program, and provided for in the facilities of the central institution.

INDIANA

Personal.—Dr. Nathaniel Bercovitz of Kachek, Hainan, China, is visiting the United States on a year's furlough. Dr. Bercovitz is a medical missionary under the Presbyterian Board of Foreign Missions, and the Central Presbyterian Church, Lafayette, is paying his salary.——Dr. Melville F. Johnson, Richmond, was elected president of the Sixth District Medical Association for a three-year term at the annual convention in Connersville.——Dr. Alfred G. Long, Cambridge, Mass., has been appointed superintendent of the laboratory of hygiene of the state board of health of Indiana, to succeed Dr. William Shimer, who has taken a position at St. Vincent's Hospital.——William A. Riley, Ph.D., entomologist, at the University of Minnesota, has been appointed one of three men, to spend the summer in Porto Rico, studying the hookworm and its effect on the natives of the island. Professor Riley spent last summer in New Orleans, studying yellow fever and malaria.

IOWA

Hospital News.—The contract has been let for the erection of a new hospital building at Estherville, to be built at a cost of $80,000.——Plans have been completed for a $125,000 addition to Iowa State Sanatorium, Oakdale.——Work will soon be started on a $40,000 addition to Sunnyslope Hospital, Ottumwa.——Plans have been completed for a new $100,000 addition to St. Joseph's Mercy Hospital, Webster City.

KANSAS

Examinations of Food Handlers.—An examination of 2,905 persons who are handlers of food was recently conducted in Kansas City, it is announced by the state health commisioner of that city. The new Kansas City health ordinance equires all restaurant employees, grocery men, and soda dispensers to be examined; and it is stated that the process has revealed a surprising ignorance or disregard of the elements of sanitation. Many concerned deserved to be classed as mentally, if not physically, unfit to handle the commodities sold. Of the 2,905 examined sixty-one were refused permits and 112 others either left the city or refrained from working in the lines affected by the examinations.

KENTUCKY

Venereal Disease Campaign.—The first three months of the war on venereal disease in Lexington, launched with the passage of an ordinance providing for the quarantine and treatment of men and women found to be a menace to public health through the possible spread of the disease, has demonstrated the great need for such work and has shown satisfactory results in remedying conditions, according to public health officials in charge of the work. All men and women arrested in raids on questionable houses and in similar circumstances will be subjected to a medical examination, and to treatment, if found diseased. The clinic is conducted on a charity basis, no charge being made for treatment.

LOUISIANA

Hospital News.—The Louisiana Antituberculosis Association has recently purchased 348 acres of land at Greenwell Springs for a tuberculosis hospital, one of the chain of hospitals planned for the control and extermination of tuberculosis. The league pledged itself to raise the entire sum to pay for the property, looking to the state for some contribution for maintenance. A hotel is situated on the site and could be easily adapted for a hospital with a 100-bed capacity. ——A bill for the establishment of a third state asylum for the insane, to be located in or near New Orleans, passed the Senate, June 7. This institution will be known as the Southern Psychopathic Hospital.——St. Simeon's School, New Orleans, has been purchased by Dr. B. F. Gallant and will be remodeled into a sanatorium.

MARYLAND

Radiophones to Be Installed in Hospital.—Dr. Winford H. Smith, superintendent, and Dr. Walter J. Craig, assistant superintendent, Johns Hopkins Hospital, have taken steps toward equipping all the wards of the hospital with wireless, so that all kinds of music and other forms of entertainment which the radiophone affords may be used to benefit the patients, especially convalescents who are inclined to fret at the long confinement in a hospital.

County Health Officers.—Dr. Harry M. Slade, Reisterstown, has been reappointed Baltimore County health officer, with the fifteen district health officers of the county; Dr. Lewis K. Woodward, Westminster, has been appointed health officer for Carroll County, with fourteen district health officers; Dr. Henry P. Fahrney, Frederick, has been appointed health officer of Frederick County; Dr. Norman S. Dudley, Church Hill, has been appointed county health officer for Queen Annes County.

Scarlet Fever in Counties.—The state department of health is using all the health forces of the state to combat the spread of scarlet fever throughout Maryland. The disease appeared in January in Wicomico County and has spread in varying degree to practically every county. Since the first of the year, 917 new cases have been reported. In May, the disease seemed to be under control, only eighty-seven new cases being reported during the month. Later, it was learned that many mild cases had been given no medical attention, and in some of the small eastern shore towns carriers had not been confined to their homes. Aside from scarlet fever, the health situation in Maryland is exceptionally good.

MASSACHUSETTS

Personal.—Dr. Nathaniel W. Faxon, assistant director of the Massachusetts General Hospital, Boston, has been appointed director of the Strong Memorial Hospital, which is to be the school of medicine and dentistry of the University of Rochester, N. Y. The hospital will have 220 beds, and will include the Rochester Dental Dispensary.

Mental Health of Children.—A course of fifteen lectures on mental health of children will be given in Boston University School of Education, on successive Monday evenings, from

Sept. 25 to Dec. 18, 1922, and Jan. 8 and 15, 1923. The lectures will be given under the direction of J. Mace Andress, Ph.D., head of the department of psychology and child study, Boston Normal School. The fee for a transferable course ticket is $10. Drs. Frankwood E. Williams, George K. Pratt, Abraham Myerson and Walter F. Dearborn will be among the lecturers.

MICHIGAN

Personal.—Dr. James G. Cumming, Ann Arbor, heads the list of participants in the city civil service commission's examination for chief of the bureau of health. Dr. Cumming received the degree of master of science in public health from Harvard University and, later the same degree from the University of Michigan. He has been engaged in public health research work for fifteen years, and is now connected with the U. S. Public Health Service in Washington, D. C. ——Dr. William DeKleine, health officer of Flint, has been appointed head of the Saginaw Health Department.——Dr. Claude W. Munger, superintendent, Blodgett Memorial Hospital, Grand Rapids, has been appointed to the editorial board of *Hospital Management.*

MINNESOTA

Hospital News.—A new building for the Bethesda Hospital, St. Paul, will be erected by the Lutherans on Capitol Hill. ——The tenth anniversary of the Nopeming Tuberculosis Sanatorium, near Duluth, was celebrated, May 23, with an all-day program. This sanatorium cares for 100 patients.

Medical Meeting.—At the second annual meeting of the Northern Minnesota Medical Association, in Detroit, Dr. Claude B. Lewis, St. Cloud, was elected president, and Dr. Willard L. Burnap, Fergus Falls, secretary-treasurer. Alexandria was selected as the meeting place for the next annual session. Drs. Bertram W. Sippy and Nelson M. Percy, Chicago, gave addresses at the meeting.

Personal.—Dr. Louis Blanchard Wilson has recently been awarded the Distinguished Service Medal for meritorious service to the United States government during the World War, as assistant to the director of laboratories and infectious diseases of the American Expeditionary Forces.——Dr. Edward W. Buckley, St. Paul, will receive the title of Chevalier of the Legion of Honor, in recognition of his services during the World War.

Minnesota State Medical Association.—The date of the annual meeting of the association in Minneapolis has been changed from October 3-5, to October 12-14, to avoid conflicting with the annual meeting of the Mississippi Valley Medical Association, which is scheduled to meet in Rochester, October 9-12, inclusive. This change will enable visiting physicians at Rochester to attend the state meeting at Minneapolis, the two days following.

MISSOURI

Salary of Medical Attaches.—The St. Louis Medical Society, June 6, authorized the appointment of a medical progress committee to survey the city health and hospital departments, in order to determine whether salaries paid to medical attaches are sufficient to insure the public the services of efficient men. A resolution for a survey was offered by the council of the society, in the belief that salaries are below those paid in other cities for similar service and by the United States government to employees of the U. S. Public Health Service.

Health Schools Planned.—One of a number of health schools to be conducted in various parts of the state, under the direction of the home demonstration agents and the extension department of the University of Missouri, was held at Independence, June 9. Instruction was given on how to make a hospital bed, how to bathe a patient in bed, how to change the bed clothing with patient in bed, morning and evening care, how to know general symptoms, how to take pulse, temperature and respiration, and how to treat bed sores. Persons taking the course, of whom there was a great number, will, on their return home, give the instruction they received to their respective communities.

MONTANA

Hospital News.—The contract has been let for the erection of the Barrett Hospital building, Dillon. The buildings will be completed in December.

Personal.—Dr. Francis S. Grey has been appointed health officer of Miles City.——Dr. Samuel E. Leard has been appointed health commissioner of Livingston.

NEW JERSEY

Chiropractor Fined.—It is reported that Meade Whiteside, a chiropractor, was fined $200 by Judge John A. Montgomery in Trenton, recently, for practicing without a license. Whiteside will appeal this decision.

NEW YORK

Anniversary of Charity Association.—The State Charities Aid Association of New York observed the fiftieth anniversary of its founding, May 11-12. The meetings were held at the Hotel Biltmore, New York, and included sessions on "County Programs for Child Care," "Child Placing and Mothers and Babies," and "Tuberculosis and Public Health: Retrospect and Outlook."

Technical Photographic and Microscopical Society.—This society was organized at a meeting held at the Chemists' Club, New York, May 10. It is planned to hold a general convention of industrial and microscopic photographers, in connection with an exhibition of photographic work, chemicals and apparatus which will be held during the national exposition of chemical industries in New York, September 11-16.

Labor Health Bureau.—At the annual convention of the Brotherhood of Painters, Paperhangers and Decorators of America, at Dallas, Texas, a resolution was adopted to form a health bureau for painters, "to save members of our hazardous trade from unnecessary death and suffering." Under the auspices of six of the larger painters' trade locals of New York, a workers' health bureau will be established in the city about July 1. Workers attending the proposed clinic will be given systematic health examination and care to guard against plumbism and other risks incidental to their occupation. After the movement has been instituted in New York, it is planned to extend the work to the entire metropolitan district.

New Hospital Regulations.—The board of health of the Department of Health of the City of New York at a meeting held, May 3, adopted the following resolution:

> *Resolved,* That Section 220 of the Sanitary Code, be and the same is hereby amended and made to read as follows:
>
> Section 220. Hospitals: permit required: exception.—No person, persons, or corporation, other than those specifically authorized by law, shall conduct or maintain a public or private hospital or institution, or advertise or hold out to the public that an establishment is conducted or maintained wherein human beings may be treated or cared for by physician or midwife, and no person, persons or corporation, other than those specifically authorized by law, shall conduct a lying-in hospital, home or place for the care of pregnant women or advertise, offer, or undertake to receive or care for them at such place, or at his or her home, without a permit therefor issued by the board of health or otherwise than in accordance with the terms of said permit, and with the regulations of said board.

Personal.—Drs. Elmer Ray Gladstone, Walton, Edward N. Packard, Saranac Lake, and Howard Goodrich, Delhi, have been appointed examining physicians under the New York State Veterans' Relief Commission.——Lieut.-Col. John M. Swan, Rochester, former commander of Base Hospital No. 19, has been awarded the conspicuous cross of the state of New York, following the citation of Dr. Swan by General Pershing in France, in April, 1919.——Lee K. Frankel sailed for Europe, June 20, as head of the executive committee of the American Jewish Relief Commission, to visit Jewish centers in order to determine the best way in which the $18,000,000 collected in this country may be spent.——Dr. Thomas Darlington, New York, was recently elected president of the American Association for Promoting Hygiene and Public Baths, at the annual meeting in Buffalo. Dr. Darlington succeeds the late Dr. Simon Baruch.

Prohibition Cuts Alcohol Death Rate.—The figures of the Bureau of Vital Statistics of the New York Health Department show that since prohibition went into effect decline in the alcoholic death rate has assumed extraordinary proportions. For comparison, it is considered fair to accept the year 1916 under the license system, since so many men were in military training and war activities in the two years following. In 1916, there were 690 deaths from alcohol in New York City; in 1920, 127 deaths, and in 1921, 141 deaths. This represents a decrease of 500 per cent. per annum. Life insurance figures show that, in 1917, the death rate due to alcoholism was 4.9 per hundred thousand policy holders, while in

1921, the ratio was 0.9, or only one fifth the figure for 1917. Figures for 1921 show a decided decrease in deaths due to apoplexy, heart disease and chronic nephritis. The death rate of all three diseases was at a lower rate than in any wet year.

Hospital News.—Ground was broken recently for a new building at the Jamaica Hospital, Jamaica. The new building will be erected at a cost of $500,000 and will have accommodations for 123 patients.——All the buildings of the Fox Hills army hospital, Staten Island, were sold at auction recently. The ninety-one buildings which were constructed in 1918 at a cost of $2,500,000 were bid in for a total of $53,000 by various persons. The land on which the buildings stand is owned by the Travelers Insurance Company of Connecticut.——The Physician's Hospital Association of Plattsburg will build a $150,000 hospital building in the near future. A drive for funds will be conducted this summer.——Plans have been completed for the new laboratory building for Trudeau Sanatorium, Saranac Lake, to be erected at a cost of $95,000.——Mayor William Reynolds recently announced that he would provide a site for a new hospital at Long Beach. The sum of $30,000 has already been subscribed toward the building fund.——New York state will get three hospitals for the disabled ex-service men. One hospital will be erected at Liberty for tuberculous patients, and will have a 500 bed capacity. A 250 bed institution will be erected in the northern part of the state and another for tuberculous patients near Poughkeepsie.

NORTH CAROLINA

New County Health Officer.—Dr. J. H. Epperson, bacteriologist and chief inspector for the board of health, Durham, has been elected county health officer of Durham County, to succeed Dr. Archibald Cheatham, who resigned recently, owing to ill health.

NORTH DAKOTA

State Medical Meeting.—At the annual meeting of the North Dakota State Medical Association held in Jamestown, June 1-2, under the presidency of Dr. Harley E. French, University, the following officers were elected for the ensuing year: president, Dr. Eric P. Quain, Bismarck; president-elect, Dr. James Grassick, Grand Forks; first vice president, Dr. William C. Fawcett, Starkweather; second vice president, Dr. John H. Rindlaub; secretary, Dr. Hezekiah J. Rowe, Lisbon, and treasurer, Dr. William W. Wood, Jamestown. The next annual session will be held in Grand Forks.

OHIO

Goiter Clinic.—The first clinic devoted exclusively to goiter established in Dayton was opened, June 12, under the directions of Drs. Harry F. Patten and Robert C. Austin. This clinic will be open every Monday afternoon and service will be free to those unable to pay, while others will be referred to their family physicians.

New System at University.—Beginning June 19, the Ohio State University College of Medicine, Columbus, went under the four-quarter plan. By this system, the university will operate twelve months instead of nine months every year. There will be four quarters of eleven weeks each, to succeed the old plan of two semesters of four and one half months. The summer quarter will run from June 19 until September 2; the autumn quarter, from September 28 to December 22; the winter quarter, from January 2 to March 23, and the spring quarter from March 24 till June 8. By attending all sessions, it is possible for a student to earn a degree in three years instead of four. Regular courses leading to degrees will be offered in all except the professional colleges of law, medicine, dentistry, and pharmacy during the summer quarter of 1922. In only one respect does the summer quarter differ from the other three. It will be divided into two terms of equal length, extending from June 19 to July 26, and from July 27 to September 2. Students may enter for only one term and carry eight hours of work, or for the entire quarter, and schedule fifteen or sixteen hours.

OKLAHOMA

Privilege for Physicians.—Oklahoma City physicians have been granted exemption from certain traffic regulations, which will permit them to park in restricted zones.

Personal.—Dr. Andrew J. Smith has been appointed city and county health officer of Pawhuska, to succeed Dr. George W. Goss.——Dr. William W. Woody has been appointed full-time city health officer of Tulsa.

Hospital News.—The Marlow Hospital, Marlow, has recently been opened.——St. Anthony's Hospital Nurses' Home is under construction at Oklahoma City. The home will have a gymnasium, shower baths and a library, for the convenience of the inmates.——The new Methodist Hospital at Guthrie was formally opened, May 12. This structure, including the nurses' home, was erected at a cost of $52,000. Bishop Wardorf of Wichita, Kan., gave the opening address.

PENNSYLVANIA

Hospital Organization.—At a recent meeting of the ex-resident and resident physicians of the Wilkes-Barre City Hospital an association was formed with the following officers: president, Dr. George R. Drake, Plymouth; vice president, Dr. Charles Long, Wilkes-Barre; secretary, Dr. Harlem Irvin Evans, Ashley, and treasurer, Dr. Harry W. Croop, Kingston.

Pennsylvania Hospital Association.—At the annual meeting of the association in Harrisburg recently, Daniel T. Test, superintendent of the Pennsylvania Hospital, Philadelphia, was reelected president. Other officers elected were: Dr. Jonathan C. Biddle, Ashland, and Col. J. H. Bigger, Pittsburgh, vice presidents; Elmer E. Matthews, Wilkes-Barre, treasurer, and John M. Smith, Philadelphia, secretary.

Hospital News.—The new Intubation Hospital, Philadelphia, for children suffering from diphtheria, was recently opened. Dr. Chevalier Jackson will be chief consultant for the new hospital.——The Pennsylvania Hospital, which is a member of the welfare federation, in its annual report announced the handling of 23,751 accident and emergency cases during the year 1921. This is an average of one case every twenty-two minutes, or sixty-four a day.

Personal.—Dr. William Irwin, Philadelphia, sailed, June 24, for an extensive tour of Europe.——Dr. William H. Spencer has been appointed bronchoscopist to St. Agnes' Hospital, Philadelphia.——Drs. William E. Hughes and Robert N. Keeley, both of Philadelphia, recently left for the South Seas on a trip of pleasure and exploration.——Dr. George A. Piersol, emeritus professor of anatomy, University of Pennsylvania School of Medicine, Philadelphia, recently received the honorary degree of doctor of science, at the commencement exercises of the university.——Dr. Joseph Turner, formerly superintendent of the Eagleville Sanatorium, Eagleville, Pa., has been appointed second assistant director of Mount Sinai Hospital, New York.

Philadelphia

Philadelphia Laryngological Society.—At the annual meeting of the society, June 6, Dr. George W. MacKenzie was elected president; Dr. William A. Hitschler, vice president; Dr. Henry A. Leslie, reelected secretary, and Dr. Arthur J. Wagers was elected treasurer.

Portrait for University.—Memorial exercises were conducted by the University of Pennsylvania in the medical school, June 12, in honor of Dr. Howard M. Fussell, who died suddenly last October. A large portrait of Dr. Fussell, painted by Leopold Syffert, was presented to the university by members of the faculty of the medical school. The formal presentation address was given by Dr. David Reisman, a personal friend and former colleague. Acting Provost Josiah H. Penniman, in accepting the portrait for the university, paid high tribute to Dr. Fussell.

UTAH

Western Psychological Association.—The annual meeting of the association, which was to have been held at Salt Lake City, June 22-23, has been postponed. A meeting will probably be arranged at Stanford University later in the summer, it is announced.

TEXAS

University of Texas.—Expansion of the building facilities of the University of Texas, Galveston, to include the erection of a fireproof building for library and museum purposes at an approximate cost of $150,000, together with the construction of a frame building for laboratories at a cost of $12,500, and a central heating plant was announced, June 3, by Dr. William Keiller, acting dean of the college. During the absence of Dr. William S. Carter, dean of the college, in Manila, C. C. Gault, assistant in physiology at the University of

Minnesota, will be instructor in physiology. Drs. Joseph F. McVeigh and Dr. Mandred W. Comfort have been appointed adjunct professors in the department of anatomy and Drs. Proctor W. Day, John H. Wootters and Jesse B. Littlefield will be instructors in anatomy. These physicians are of the present graduating class. The newly created department of pharmacology will have Harry V. Atkinson, B.S., assistant in pharmacology and toxicology at the University of Illinois, in charge. Dr. Edward Randall, Sr., will be professor of therapeutics. Dr. Moise D. Levy has resigned from the department of medicine to practice in Houston; Dr. Joseph Kopecky will succeed him. Dr. George Townsend Lee, New York, has been appointed instructor in medicine. Drs. S. Gibbs Milliken and L. Terry, both of the present graduating class, will be the new instructors in pathology. Dr. O. Brown Williams has been appointed instructor in bacteriology and Dr. Frank W. Dimmitt, who had resigned his adjunct professorship in physiology to start practice in Galveston, will be instructor in dermatology and syphilology.

VIRGINIA

Hospital News.—Hill Top Sanatorium, Danville, was formally opened to the public, June 4.——Construction work has been started on the King's Mountain Memorial Hospital at Bristol. It is expected that the building will be finished in December. It will have sixty beds and three complete operating rooms. It is being erected at a cost of $150,000.

Personal.—Dr. William Armistead Gills, who has been attached to the United States naval station at Guam, has been ordered home. He will return to Richmond this month. ——Dr. William B. Porter, Stuart Circle Hospital, Richmond, has assumed charge of the medical department of the Lewis Gale Hospital, Roanoke.——Dr. Mary E. Brydon of the state board of health has been appointed by Governor Trinkle as one of the commissioners at large to investigate the feasibility of establishing separate schools for the deaf and blind. The report will be submitted to the next general assembly.

WISCONSIN

New Health Officer.—Dr. Gustaf R. Egeland has been appointed health officer of Sturgeon Bay, to succeed Dr. Thomas C. Proctor, who resigned following an injury to his eye.

Honorary Degree for Physician.—Dr. Thomas Hall Shastid, Superior, received the honorary degree of Doctor of Science at the recent commencement exercises of the University of Wisconsin.

CANADA

Nursing Centers.—On request of the Metropolitan Life Insurance Company of Sudbury and the citizens, a nursing service will be established there.——A training school for nurses will be established in connection with the Lady Minto Hospital, Cochrane.

National Council Meeting.—The annual meeting of the Ontario Branch of the Canadian National Council for Combating Venereal Diseases was held in London, May 12. Albert E. S. Smythe, Toronto, was elected president, and L. M. Wood, Toronto, treasurer.

Tuberculosis Clinics. — Four tuberculosis clinics were recently held at St. John, N. B., for the purpose of finding persons suffering from tuberculosis. The present difficulty is finding suitable treatment facilities for cases. Hundreds of people attended the clinics, many being turned away.

Academy of Medicine of Toronto.—At the annual meeting of the academy, the following officers were elected for the ensuing year: president, Dr. Wilbur H. Harris; vice president, Dr. John T. Fotheringham; honorary secretary, Dr. Frederick C. Harrison, and honorary treasurer, Dr. John H. McConnell.

Personal.—Dr. Edward L. Cash, formerly of Ottawa, has retired from active practice and is living on an orange ranch at Montebello, Calif.——Dr. David Dick has been appointed superintendent of the Hospital for Returned Soldiers, Red River, Alta.——Dr. John Henry Bell, Hamilton, has been appointed provincial medical examiner of the Royal Arcanum, Ontario, to succeed the late Dr. George Elliot of Toronto. ——Dr. Malcolm T. MacEachern, superintendent of the Vancouver General Hospital, B. C., has been appointed director-general of the Victorian Order of Nurses for Canada, and arrived in Ottawa in May to take up his new duties.——The Hon. John Michael Uhrich, M.D., has been appointed minister in charge of the bureau of public health for Saskatchewan. He also holds the portfolio of provincial secretary and is a member of the legislature.——President A. Blook, of the Canadian Association for the Prevention of Tuberculosis, has resigned to become sheriff at Regina, Sask., and has also accepted the appointment of superintendent and general manager of the Saskatchewan Sanatorium at Fort Qu'Appelle.

GENERAL

Gifts from World War Veterans.—It has been announced that a great number of the veterans of the World War are sending their checks for adjusted compensation back asking that the money be applied to the hospital fund for disabled soldiers.

American Otological Society.—At the annual meeting of the society in Washington, D. C., May 2-3, the following officers were elected: president, Dr. George E. Shambaugh, Chicago; vice president, Dr. John B. Rae, New York, and secretary-treasurer, Dr. Thomas J. Harris, New York.

American Orthopedic Association.—At the annual session in Washington, D. C., May 2-4, Dr. Ralph R. Fitch, Rochester, N. Y., was elected president of the association; Dr. W. S. Baer, Baltimore, was elected president-elect; Dr. Fred H. Albee, New York, vice president; Dr. John L. Porter, Chicago, secretary, and Dr. DeForest P. Willard, Philadelphia, secretary.

American Society for Clinical Investigation.—The annual meeting of the association was held in Washington, D. C., May 1. The following officers were elected for the ensuing year: president, Dr. Elliot P. Joslin, Boston; vice president, Dr. Charles F. Hoover, Cleveland; secretary, Dr. James H. Means, Boston, and treasurer, Dr. Ralph Pemberton, Philadelphia.

American Federation of Organizations for the Hard of Hearing.—At the third annual meeting of the federation in Toledo, June 12-14, under the presidency of Dr. Wendell C. Phillips, New York, the following officers were elected for the ensuing year: president, Dr. Harold A. Hayes, Buffalo; treasurer, Mrs. N. Todd Porter, Jr., and corresponding secretary, Miss Annetta W. Peck.

American Surgical Association.—At the annual meeting of this association in Washington, D. C., recently, Dr. Lewis L. McArthur, Chicago, was elected president; Drs. Ellsworth Eliot, Jr., New York, and Donald C. Balfour, Rochester, Minn., vice presidents; Dr. Robert B. Greenough, Boston, secretary, and Dr. Charles H. Peck, New York, treasurer. The next meeting of the association will be held in Rochester, Minn., in June, 1923.

Bills for Prohibition Department.—Two bills for the establishment of a separate bureau of prohibition under the authority of the President have been presented. In the Senate, the measure was introduced by Senator Ernst of Kentucky, and in the House by Representative Wood of Indiana. The purpose of the proposed legislation is to take the control of the enforcement of the prohibition laws from the jurisdiction of the Treasury Department and the Internal Revenue Bureau. Both bills went to the Committee on the Judiciary.

Charter for Siberian Veterans' Association.—A federal charter for the Siberian Veterans' Association is proposed in a bill introduced in the Senate by Senator Calder of New York at the request of the association's officers. The membership is to include those officers and men who served in Siberia during the World War. The organization, of which Brig.-Gen. W. S. Graves is commander-in-chief, claims a membership of approximately 2,500 and has established posts in nearly every state in the Union. More than 15,000 are eligible to membership.

Infantile Paralysis Study.—The Harvard Medical Commission, which instituted a five-year course of study into the causes and treatment of infantile paralysis, recently made a report of progress. The commission has about 2,000 actual cases under its supervision, while it is at the present time treating more than 1,000. The fundamental fact established is that infantile paralysis is not always or necessarily accompanied by paralysis. Practically 50 per cent. of the cases are not paralytic. It is estimated that there are 100,000 sufferers from the crippling effects of this disease in the United States today. The Harvard experts believe they have found a method of after-treatment for the disease, based on "muscle training," though, even under the most favorable conditions, progress is likely to be slow, it was stated.

Action on Tariff Bill.—The Senate this week adopted an amendment to the tariff bill which reduces the duty on surgical instruments, "composed wholly or in part of iron, steel, copper, brass, nickel, aluminum or other metal," to 45 per cent. ad valorem. This is the rate originally fixed in the bill as it passed the House of Representatives. The Senate committee subsequently advanced the rate to 60 per cent., which was considered excessively high; and much objection has been made to it. The rate of 45 per cent. is likely to stand in the final passage of the tariff bill. The Fordney bill as it now stands does not contain any provision whatever permitting the free importation without duty of philosophic, scientific and laboratory instruments, although the Payne-Aldrich bill, passed by a Republican Congress, and the Underwood bill, passed by a Democratic Congress, contained such provision. Unless educational institutions and persons interested in the restoration of this provision in the Fordney bill prevail on the Senate to amend the existing bill by the insertion of such a provision in the measure in the Senate, the subject cannot be adjusted by the Conference Committee.

Bequests and Donations.—The following bequests and donations have recently been announced:

New York Hospital Society, $500,000 in U. S. Victory Loan 3¾ per cent. notes from George F. Baker, a governor of the society since 1899. The board, in accepting the gift, unanimously voted to establish the George F. Baker Endowment Fund of $750,000, consisting of the present donation of $500,000 and the $250,000 given to the society by Mr. Baker in 1912.

University of Virginia Medical School, $50,000, toward the erection of a new wing to the teaching hospital of the university, by Paul G. McIntire.

Mount Sinai Hospital, Philadelphia, $30,000, for the purpose of erecting a new building for the outpatient department, by Mr. William Lipkin of Philadelphia.

Albion, Mich., for a new hospital, $30,000, in memory of his grandfather, by James Sheldon Riley of Los Angeles.

North Side Day Nursery, Columbus, about $30,000 to the Columbus Nursing Association for a new modern home and hospital, by Mrs. W. A. Miller.

Grace Memorial Hospital, Banner Elk, N. C., about $20,000, by Mrs. Helen Hartly Jenkins of New York, in memory of her sister.

Home for the Friendless and the Old People's Home, Chicago, each, $10,000, by the will of Adolphus C. Bartlett of Chicago.

New York Association for the Blind, $5,000, and St. Giles Home for Crippled Children, $3,000, by the will of Miss Lucy Kirtland.

Johns Hopkins Hospital, Baltimore, $500, by the will of William H. Fischer, a tinner, and a former patient.

Sum Asked for Leprosarium.—In an estimate made by the director of the budget and submitted to Congress, it is recommended that the sum of $650,000 be appropriated for the coming fiscal year for the National Home of Lepers, controlled by the U. S. Public Health Service at Carville, La. The purpose of the appropriation is to provide for the care and treatment of persons afflicted with leprosy and to prevent the spread of leprosy. The budget director's communication reads in part as follows:

> By the provisions of an act passed by Congress Feb. 3, 1917, Congress inaugurated a policy which contemplated the establishment of an institution to be operated by the U. S. Public Health Service for the care and treatment of all persons in the United States suffering with leprosy, including the necessary expenditures for transportation to this institution and their continued care therein. In pursuance to this policy and under the legislation, there was purchased from the state of Louisiana an institution located at Carville, which had been used as a leprosarium by that state for many years, and with the expenditure of the funds available the bed capacity of this place was increased to 200. This place has now been in successful operation for a year or more, and is completely occupied. There do not exist any accurate figures as to the number of lepers within the United States. Estimates have been made which vary from 500 to 1,200 such persons. The experience of the U. S. Public Health Service since the opening of the leprosarium, however, leads to the belief that the higher is probably the more accurate figure. Insistent demands have been made on the Public Health Service ever since the opening of this institution. All facilities possible have been supplied with the existing appropriation and are employed to capacity. There still exists a waiting list from various states of the union, but further admissions cannot be made to this hospital until its facilities are expanded. Under the appropriation of $650,000 asked for, it is contemplated to increase the bed capacity of this place to a total of 500, and to supply an infirmary, quarters and other facilities necessary to the operation of the plant. The policy instituted by the national government was, of course, based on the possibility of eliminating the disease from the population of this country. There are good grounds for believing that if all persons suffering from leprosy are collected and segregated in the proper manner this disease may ultimately be eradicated completely. The present situation is pressing. The health authorities of the various states of the union, being in entire sympathy with the general policy of legislation, have at once proceeded to take advantage of the situation by attempting promptly to collect all lepers within their jurisdictions and to transfer them to the custody of the national government. The Public Health Service, however, as the agency of the national government, is without adequate facilities to meet these demands and will be unable to do so until sufficient funds are supplied for the extension of the plan as indicated.

The recommendation, on being received by Congress, was referred to the Committee on Appropriations of the House for action.

LATIN AMERICA

Colombian Hospitals.—A dispensary is being established on the first floor of the San Juan de Dios Hospital, Bogotá. ——The Surgical Society of Bogotá has been compelled, through lack of funds, to suspend work on the construction of San José Hospital.

International Infant Welfare Society.—A commission has been appointed by the Uruguayan government to prepare plans for the organization of the Pan-American Infant Welfare Office recommended by the second American congress on infant welfare. Dr. Luis Morquio will act as chairman of the commission, and Drs. J. A. Bauzá, P. de Peña, D. Regules, R. Schiaffino, V. Zerbino and R. Berro, as members.

New Central American Journal.—The undergraduates in the medical school at San Salvador have started the publication of a monthly, entitled *El Salvador Médico.* The publication is in charge of a board appointed by the society "Emilio Alvarez," which includes practically all medical students there in its membership of seventy-five. The leading article by Guillermo González is an attack on the increasing use of "patent medicines."

Leprosy.—According to a statement by Dr. H. C. de Souza Araujo, public health officer of the state of Para, Brazil, there are 1,135 cases of leprosy in the city of Para and 104 in the rest of the state. Of these, only 255 are segregated in the Yocunduba Leper Hospital.——The seventeen lepers segregated at Nigua, Santo Domingo, are being treated with chaulmoogra oil.——The government of Ecuador has asked its representative at Washington, D. C., to secure 8 liters of chaulmoogra to treat the lepers segregated at Pifo.

Personal.—Dr. Gutiérrez y Arango of Bogota has been elected president of the house of representatives of Colombia. ——Prof. F. Krause of Berlin, who is delivering a course of lectures on nerve surgery at the University of Rio de Janeiro, brought a formal greeting to the university from the German universities. The messages are written on parchment and are signed by the professors of the universities of Berlin, Leipzig, Rostock, Bonn, Halle, Heidelberg and Tübingen.——The farewell banquet tendered Prof. Wilson Smillie, on his departure from S. Paulo for the United States, is said by the *Brazil-Medico* to have been brilliant and numerously attended.

FOREIGN

Portuguese Physician Honored.—Dr. Gomes Teixeira, who presided at the recent Spanish-Portuguese medical congress, has received an honorary degree from the University of Madrid.

British Institute of Physics.—At the annual meeting of the institute in London, May 23, the following officers were elected: president, Sir J. J. Thomson; vice presidents, Sir Charles Parsons, Prof. W. Eccles, Prof. C. H. Less and Mr. C. C. Paterson.

Street Named for Local Health Officer.—The *Medicina Ibera* states that the people of Villamediana in Spain have recently changed the name of a street in honor of their *médico titular,* Dr. A. Mateo, as a tribute to his devoted services to the community.

Arsphenamin in Yaws. — Dr. Hata, Ehrlich's former co-worker, had occasion, in a recent visit to China, to observe the success of arsphenamin as used there in the treatment of frambesia. Professor Hata was so impressed as to write to Ehrlich's widow on the subject.

Medical Golfing Society.—The summer meeting of the Medical Golfing Society of England was held at Stoke Poges Golf Club, June 8. The *Lancet* challenge cup for best scratch return v. bogey; the Henry Morris challenge cup, and the society's gold medal for best return under handicap, were presented following the tournament.

Centennial of Mendel.—A Mendel festival was organized at Vienna by the Zoologic-Botanical Society to commemorate the hundredth anniversary of the birth of Gregor Johann Mendel, June 7, 1822, the Austrian priest, abbot of Brünn, whose experiments on garden peas revealed the now famous law of cross-bred inheritance. It was published in 1865.

Fire in Hospital at Rome.—The famous old Ospedale di Santo Spirito at Rome recently had a disastrous fire, destroying two pavilions with large loss of life in the incurable ward. The fire broke out at night, and several bodies were recovered in the morning. Many of the survivors were severely burned, in spite of the heroic efforts of the personnel and firemen.

Rovsing Festskrift.—Our Danish exchanges bring the account of the celebration at the Rigshospital at Copenhagen of Prof. T. Rovsing's sixtieth birthday. The speakers represented the leading medical organizations of Denmark; and they emphasized that from the first his scientific work has been fruitful in new points of view, from his very first work, on infection of the urinary passages. A souvenir volume was presented to him containing forty-six articles by his former pupils and assistants.

Tribute to Mangiagalli of Milan.—The celebration planned in honor of Professor Mangiagalli of Milan, Italy, has already been mentioned in these columns. The occasion was the completion of his fortieth year as professor of obstetrics and gynecology. He made the day memorable by his donation to the Maternity and to the Clinic for Occupational Diseases of funds to purchase the equipment for deep roentgenotherapy at the former and for general radiotherapy at the latter institution, the sum totaling 100,000 liras.

Centennial of Corti.—The *Klinische Wochenschrift* recalls that June 15 was the centennial of the birth, in Sardinia, of Alfonso Corti, who gave the world the perfect description of the internal ear. He studied at Paris and Vienna, where he was professor under Hyrtl, and in 1848 moved to Würzburg, where the results of his research on the organon spirale, called by Kölliker, the organ of Corti, were published in 1851. In 1855 he returned to Italy to live and abandoned further anatomic research, dying in 1876, aged 55.

Research on the Sexual Development of Children.—Our German exchanges mention that the Institute for Sexual Science in Berlin and the Institute for Experimental Pedagogics and Psychology at Leipzig have combined their efforts to study the physical and psychic development in the sexual sphere in children. They are appealing to parents, teachers, physicians and others to collect and send to them all kinds of data on this topic, personal observations, the questions asked, the confessions, the personal experiences, documents, diaries, poems and pictures by children, letters, models, etc. The data are to be sent to the Institut für experimentelle Pädogogik und Psychologie, Kramerstr. 411, Leipzig.

French Medical Congress.—Prof. Fernand Widal is to preside at the annual meeting of the Association of French Speaking Physicians, the Sixteenth French Medical Congress, which convenes at Paris, Oct. 12-14, 1922. The three subjects announced for discussion are "Elements for Differential Diagnosis of Gastric from Duodenal Ulcer"; "Pathologic Significance of Abnormal Shapes of Leukocytes," and "Prevention and Treatment of Deficiency Diseases." The addresses on the last mentioned subject are to be by Weill, Mouriquand and Rathery, who have done so much pioneer work in this line. The official notice of the congress states that physicians and other scientists who desire may take part in the congress subject to acceptance by the bureau; the fee is 45 francs. For further information apply to the permanent headquarters at the Faculté de Médecine, 12 Rue de l'Ecole de Médecine, Paris, which is also the permanent headquarters of the Association for the Development of Medical Relations with Foreign Countries. The secretary-general of the congress is Prof. A. Lemierre, 217 Rue du Faubourg-St.-Honoré, Paris.

Congresses to Be Held Abroad.—The eighteenth annual South African Medical Congress will be held, September 18-23, at Johannesburg.——The second annual meeting of the Medical Women's International Association will be held in Geneva, Switzerland, September 4-7, under the presidency of Dr. Esther Lovejoy, New York.——The first International Congress of Open-Air Schools will be held in Paris, June 24-28. Members' tickets are 20 francs.——An International Congress on Birth Control will be held in London, July 11-14. The congress will be devoted to the eugenic, economic, national and international, moral and religious, medical and contraceptive aspects of birth control. Fee for membership of the conference is about $2. Practitioners may become honorary members by applying to Dr. Dunlop, 71 Harley Street, London.——An International Congress for Health Education will take place in Paris, December 18-23. The object of the congress is to encourage the fight against venereal disease. The program will be divided into five parts: general hygiene, venereal disease, venereal prophylaxis, sex education, and measures to be taken. M. Emile Weisweiller, 7 Rue Mignon, Paris, is secretary general of the congress.

Poverty Among the Profession in Russia.—It is stated by the American Relief Administration that, at the University of Samara, Russia, 200 professors are working under distressing conditions. Living on a meager allowance of black flour and herring they have kept the university open, although they have had to spend time that might have been devoted to research work in outside employment, in order to earn enough food to keep their families alive. Many are ill, others in a weakened condition physically, as a result of overwork. Dr. Edmund A. Walsh, regent of the School of Foreign Service, Georgetown University, Washington, D. C., traveling in Russia for the National Catholic Welfare Council, writes that he found the wife of Bode, famous diagnostician, living with a family of five in two small, ill-lighted rooms. She was on the verge of starvation. He also states that, while he was in Moscow, the daughter of Mendeleieff, discoverer of the law for arriving at atomic weights of the basic elements, called on him and was desperately in need of food, though once very wealthy. Food packages will be distributed, purchased in large quantities through the Russian Food-Remittance Department of the American Relief Administration, among people not already included in relief programs, either because they do not live in the famine district or because they cannot properly be classified as acute starvation cases. This is the class of people that suffers most, seeking aid only at the last minute, with the result that many of them are in distressing circumstances.

The Antiarsphenamin Agitation in Germany.—The German lay papers have been inveighing against the use of arsphenamin, following the lead of Dreuw, who for years has been denouncing its use. The German Dermatological Society has been making a collective inquiry among its members as to whether they can subscribe to the following statement: "We are convinced that the arsphenamin preparations are the most valuable means at our command for combating syphilis as a disease of the individual and in the interests of the people as a whole. In the present stage of our knowledge they are remarkably effectual in all stages and forms of syphilis that are amenable to treatment, with few exceptions, and although they can be supplemented by the older remedies, the latter often are unable to take their place. If in the manufacture, testing and use of the arsphenamin preparations the indispensable care is maintained, the dangers with arsphenamin treatment are no greater than with every other energetically acting method of treatment. As these dangers have been recently presented in what in our opinion is an exaggerated form, we feel constrained to explain that arsphenamin treatment applied with caution and by experts cannot be restricted without great harm resulting for the public health in general." The members of the society were asked whether they had any essential objections to such an announcement and the *Wiener klinische Wochenschrift* relates that forty-three members said they disapproved of it, and fifteen said they had material reasons for not signing the circular, but 487 signed it, that is, 97 per cent. of the members.

Deaths in Other Countries

Dr. **John Cecil Carr**, superintendent of the Wilson Memorial Hospital, Pingyangfu, Shansi, China, at Shanghai, May 8, of heart disease.——Sir **Henry Davy**, president of the British Medical Association, 1907-1908, at Exeter, England.——Dr. **Robert Bruce Low**, epidemiologist and sanitarian; examiner in sanitary science, state medicine and public health for the universities of Edinburgh, Glasgow, Leeds and Cambridge; later inspector of examinations in the United Kingdom and Ireland; May 11, in London, aged 76.——**William D. Spanton**, former president of the British Gynecological Society and of the Staffordshire Branch of the British Medical Association, aged 81.——Dr. **E. Kalliontzis**, professor of surgery and topographic anatomy at the University of Athens. He was on various occasions the official representative of Greece in international gatherings.——Dr. **A. Gordon y Bermudez** of Havana, an officer of the national public health service.——Dr. **P. de Mattos**, of the Hospital Fernández of Buenos Aires.——Dr. **Fortineau**, professor of bacteriology at the University of Nantes, aged 40.——Dr. **P. Fabre** of Paris succumbed to fulminating scarlet fever, professionally acquired, aged 26.——Dr. **Van Bever** of Antwerp, chief of the service for the insane in Belgium.——Dr. **Renaud-Badet** of Paris.——Dr. **L. Rivata** of Busalla, Italy.——Dr. **G. J. Teljer**, a well known dermatologist of the Hague, aged 60.

Government Services

President Asks Appropriation for Public Health Service

The President of the United States has submitted a communication to Congress asking for an additional appropriation of $500,000 for the pay of personnel and the maintenance of hospitals by the U. S. Public Health Service. The communication contains a letter from the director of the budget, in which it is stated that the Public Health Service needs this additional sum for the fiscal year, 1923, in order to operate a hospital at Ellis Island for the care of immigrants coming into the United States. The Treasury Department, according to the budget authorities, is recompensed for this expenditure by the Bureau of Immigration. It is also pointed out that it is greatly to the interest of the government for the U. S. Public Health Service to operate this hospital rather than have it operated by the Department of Commerce, since the institution, when not actually used by sick immigrants, may be utilized by other patients of the Public Health Service. The President's communication has been referred to the Committee on Appropriations in the House.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 5, 1922.

The Increase of Cancer

The increase of cancer has again become a topic in the press. Sir William Veno, a layman, who has recently made a munificent benefaction for cancer research, points out in a letter to the *Times* how terrible a menace the disease has become to civilized society. In Great Britain, the victims to the disease number 40,000 annually, while in the United States they are more than double that number. In the quinquennial period 1912-1918 there were, in the registration countries of the world, one-half million deaths, or an average of 71.6 per hundred thousand of population. In Africa, the rate was 33.4; in Asia, 54.4; in Australasia, 73; in Europe, 76.6, and in America, 65.7. Thus, in the fully developed countries, or those in which the population is largely white, the death rates are highest. In Japan, up to comparatively recent times, the disease was almost unknown; but, since the country has been europeanized in customs and diet, cancer claims as many victims as in England. The very complete American statistics which are available show that Massachusetts tops the list, with a rate of 83.6 per hundred thousand. Rhode Island and New York come next, with rates of 82.7 and 80.4, respectively. At the bottom of the list are Montana and Kentucky, with rates of 53.7 and 48.3. Wherever the negro population is highest, the cancer death rate is lowest. Here again is evidence that the more highly civilized the population the higher the rate. What the exact cause of the increase is can only be a matter of speculation. Is it diet or manner of life?

Professor Joly of Trinity College, Dublin, in a letter to the *Times,* says that some years ago he was led to think that there is much in common between the reaction of the cell to radiative treatment and the behavior of those photosensitive substances which form the basis of photographic action. He infers that the increase in cancer may be due to such articles of diet as contain substances which have the properties of "sensitizers." Preeminent among these substances is tannin, which enters largely into the composition of tea and coffee. It is a fact that the mortality from cancer in recent years rose with tea consumption in this country. In the case of mouth cancer, which has been ascribed to tobacco smoking, powerful "sensitizers" are here again involved. In his recent Oliver-Sharpey lectures, delivered at the Royal College of Physicians, on "Common Defects of Diet," Dr. E. Mellanby also argued in favor of a dietetic origin of cancer. He stated that the Eskimos, before the introduction of modern diets, did not have cancer, and the same was true of the Icelanders. Only with the introduction of modern diets has cancer become common in Iceland, and it is now actually found among the Eskimos. Dr. Mellanby made an interesting comparison with rickets. Here were two condition both of which were diseases of growth—rickets and cancer. In one, there was certainly a relation to diet; while it was just possible that in the other there might be a similar relation.

International Congress of the History of Medicine

Arrangements are rapidly advancing for the third international congress of the history of medicine, which will open in London, July 17. Delegates are expected from a wide range of countries, including France, the United States, Belgium, Holland, Italy, Spain, Denmark, Norway and Czechoslovakia. The minister of health has accepted the committee's invitation to deliver the opening address. The program will include a reception by the lord mayor at the mansion house. Among the papers to be read is one on the "Early History of Anatomical Teaching at Edinburgh," by Dr. John D. Comrie, and one on the same subject concerning the United States, by Dr. Krumbaar of Philadelphia. Special interest attaches to a paper by Dr. Torkomian, an Armenian of Constantinople, which will deal with the Armenian history of inoculation against smallpox. Constantinople was the city from which the earliest of learned English "blue stockings," Lady Mary Wortley Montagu, in the early eighteenth century, derived the system of inoculation which she introduced into England, where it found great favor, until superseded by the jennerian system of vaccination. Visits will be paid to several places of great medicohistorical interest: the barbers' hall, the apothecaries' hall. A conversazione will be held at the Wellcome Historical Museum, and receptions will be held by the president of the Royal College of Surgeons at the college, and by the lord mayor at the mansion house. Those wishing to attend the congress should communicate with the general secretary, Dr. J. D. Rolleston, 21 Alexandra Mansions, King's Road, London, S.W. 3. The program gives a list of hotels with prices at which accommodation can be reserved if booked in time.

The Archives of Medical Hydrology

Under the title of the *Archives of Medical Hydrology,* the first number of a new periodical, which is the journal of the International Society of Medical Hydrology, has been published in London. In a foreword, Professor Carnot of Paris announces that the aim of the *Archives* is to compare and coordinate the research done on medicinal waters in the different countries, so as to draw conclusions which shall be useful to all, from the triple point of view of science, technic and therapeutics. Each nation possesses waters of individual character; comparison of their chemical constitution, physical composition and geologic character will permit us better to understand their nature and the character of their action. The *Archives* will enable us to compare the methods followed at the spas of different countries. From the therapeutic point of view, international exchanges respecting medicinal waters and climatic stations are desirable. International tours of medical study, like those already in vogue in France (voyages d'études médicales) should be organized in other countries. To the first number, Sir Clifford Allbutt contributes a learned preface on the use of waters for the preservation of health and the cure of disease. There is an article on "The Present State of Hydrology in the Countries Represented." The countries number ten, including America, Belgium, France, Great Britain, Holland, Italy, New Zealand, Scandinavia, Spain and Switzerland. It is noteworthy that the late enemy countries, Germany and Austria, are not represented.

The original papers are: "Some Physiological Effects of Exposure to Open Air and Water-Baths," by Prof. Leonard Hill; "The Scientific Foundations of Hydrotherapeutics," by Prof. Alois Strasser of Vienna (notwithstanding the fact that Austria is not among the countries represented); "The Treatment of Circulatory Trouble by Natural Effervescent Baths," by Dr. R. Wybauw of Brussels; "How to Study a Mineral Water at the Present Time," by Prof. A. Chassevant of Algiers and Dr. Ferrerolles of La Bourboule; " Modern Spectroscopy as Applied to the Study of Natural Mineral Waters," by S. Judd Lewis; "The Physiological Investigation of a Mineral Water, by Dr. William Bain, and "Stations thermales: traitement moderne du diabète," by Dr. Gustave Monod. A majority of the articles are in English and the remainder in French. Each is usually followed by a translation or abstract into the other language. The subscription to the journal is 10s. 6d. per annum ($2.50 at the par rate of exchange). Subscriptions should be sent to Headley Brothers, 18 Devonshire Street, Bishopsgate, London, E.C. 2.

The Treatment of Disease by Letter

Dr. Robert Bell, who is one of those practitioners who claim to cure cancer by medicinal means, was summoned before the general medical council for treating for nine months a woman suffering from inoperable cancer without having seen or examined her, such treatment having been carried out by correspondence with her husband, a person without medical skill or knowledge. Giving evidence, Dr. Bell stated that he was physican to the Women's Hospital, Glasgow, for twenty-one years, had practiced in London for twenty-one years, and was now superintendent for cancer research at the "Battersea General Anti-Vivisection Hospital." He produced a copy of a letter which he had sent to the patient's husband, asking for the cooperation of her physician, which was refused. If he had had the cooperation of the physician, the case would have had a different result (the patient died). He had cured four cases by correspondence in this manner. The chairman of the Battersea Hospital gave evidence that Dr. Bell had done "magnificent work" for the hospital, effecting some "wonderful cures."

The president of the council informed Dr. Bell that they could have judged him "guilty of infamous conduct in a professional respect," but they postponed pronouncing judgment until next year in order to have an opportunity of considering his conduct in the interval. They took a grave view of the conduct of a practitioner who treated a patient by correspondence without ever having seen or examined her, without having had any medical evidence as to the nature of her complaint and without securing any medical assistance or cooperation in the treatment. At the May session, 1924, of the council he must be prepared to satisfy them that his conduct in the interval had been without reproach, in respect to the methods which had been proved against him.

The Education of the Deaf Child

In an address delivered before the child study society and published in the *Lancet*, Mr. Macleod Yearsley, consulting aural surgeon to the London County Council, calls attention to the common disastrous mistake of regarding the deaf child as mentally defective. "Almost all deaf children," says Dr. Kerr Love, in his introduction to Miss Martin's excellent pamphlet "What the Mother of the Deaf Child Can Do," "are mentally sound, and this is especially true of deaf-born children." The deaf child is merely a normal child who has lost his most important educational sense. Whether he has been born without it or has lost it by disease after birth does not matter. The hearing child goes to school at 5 years with his physiologic education well under way; but, in England, the deaf child need not attend school until the age of 7, thus adding two years to his already severe handicap. In Scotland, deaf children must attend school at 5; in England, they are allowed to attend, provided the parents have paid grants for them. In Glasgow, they can attend at 3. Mr. Yearsley holds that, if we acted logically, the deaf child's education would begin at 3. But it may not be possible to send the child to school, and then, as Miss Martin has shown, the mother can successfully undertake the child's education. The home life is specially adapted for early training. But the ideal method is for the mother and the teacher to cooperate in training the child. Miss Martin's pamphlet should be in the hands of every one, mother, teacher or surgeon, who has to deal with the deaf child.

BELGIUM

(From Our Regular Correspondent)

LIÉGE, April 11, 1922.

Improvements in the Faculty of Medicine of Brussels

Thanks to the generosity of the Rockefeller Foundation, the Faculty of Medicine of Brussels will undergo some important transformations. Professor Depage intended to build a hospital and a school for nurses in Woluwe. The antiquated Saint-Pierre Hospital was no longer sufficient for clinical professors. An agreement was recently concluded between the Rockefeller Foundation, the city of Brussels and the Free University, and Professor Depage has abandoned his project in favor of a uniform program. It is now assured that Brussels will soon possess a modern medical equipment, which will be put at the disposal of the members of the faculty, and important progress in the teaching of medicine and in scientific research is expected.

Ophthalmology and Medical Studies

Now that all scientific societies are discussing new regulations to govern medical studies, the Belgian Society of Ophthalmology has expressed the wish that the resolutions quoted herewith concerning the study of ophthalmology be adopted: Members of the Belgian Society of Ophthalmology, after careful study of the report made by the committee appointed by the Royal Academy of Medicine to study reforms to be introduced in the curriculum of medical studies, believe that the importance of the ophthalmologic clinic should not be curtailed, for these reasons: 1. Cases of disease of the eyes are very frequent, always serious and often grave. 2. City practitioners can send their patients to specialists, while those who practice in the country or in small towns cannot do so, and they form the majority. It is of utmost importance that they acquire sufficient ophthalmologic knowledge, if serious consequences are to be prevented. 3. If we take into account that clinical and operative demonstrations are given only to a small number of pupils at a time, that students must be given individual attention in the various methods of examination, and that it would be a mistake to reduce the time devoted to clinical teaching, as clinical studies are the aim of all medical studies, we can conclude that the two years' study of this branch of medicine is not too much.

National League of Mental Hygiene

A new league, the National League of Mental Hygiene, which contemplates an important program, has just been definitely organized. Professor Ley bases his plan on similar organizations in other countries, especially those in the United States, and the Belgian league will try to carry it out successfully, with the help of consultations, dispensaries, schools, and welfare and benevolent societies. The work of the league will be divided into two sections, judicial and pedagogic, which will cover the problems of normal adults, social service and propaganda, military, industrial and professional, mental diseases, abnormal adults, abnormal children, toxicomania, delinquents and vagabonds.

Supernumerary Bones of the Foot

Drs. de Caestecker and de Nobele presented before the Society of Medicine of Ghent a complete and interesting study on supernumerary bones of the foot. They described the different varieties of supernumerary bones that can be encountered, and they showed how easily they may be confused with other affections, among which should be mentioned partial fractures of the bones of the foot or scaphoiditis in children. They make a differential diagnosis between these various affections, and they insist on the necessity of a bilateral roentgenographic examination, which is the only reliable means of diagnosis, as clinical symptoms have a very limited value. Their conclusions are of great importance from a medicolegal standpoint, especially in labor accidents. This is particularly true as regards the external tibial bone, which has nothing in common with the sesamoid or tendinous bones. It seems that these bones are a part of the skeleton, properly speaking, but that they have deviated from their primary direction by atavism.

Blood Transfusion in Illuminating Gas Poisoning

Dr. de Harven recently presented to the Société Clinique des Hôpitaux de Bruxelles an interesting case of carbon monoxid poisoning cured by blood transfusion. The patient was in a serious condition and the intoxication was characterized by convulsions occurring every ten minutes, superficial respiration, impalpable pulse, and hazy cornea. There was no resorption after injection of a considerable quantity of saline with epinephrin. Three hundred and fifty c.c. of blood was withdrawn from the radial artery and a transfusion of citrated blood was performed. The effect was excellent. The pulse became palpable; the arterial pressure rose, and the next day it was normal. The following day, the patient was conscious.

Medical Gatherings in Brussels

For the first time since last year, the Journées Médicales de Bruxelles will be held again under the management of the *Bruxelles Médical.* It has been found that practical work in hospitals and clinics, with expository lectures, is more useful and more interesting to practitioners than a congress in which discussions often arise, without bearing fruit. This reunion will be held, June 25-28. The morning of June 25 will be devoted to the opening of the international exposition of surgical equipment, of instruments and pharmaceutic products, which will be followed by the inaugural session and a lecture. The mornings of June 26 and 27 will be devoted to demonstrations of operations in hospitals and clinics, inspection of medical and hygiene services in schools, and visits to institutes and laboratories. The afternoons will be devoted to lectures and motion pictures, which will be given more attention this year than last. June 28, there will be an excursion by train and motor to Belgian health resorts. Besides the scientific work, there will be many and various forms of recreation for physicians and their wives.

BERLIN

(From Our Regular Correspondent)

May 27, 1922.

Medical Congresses

During the Easter vacation period, a congress of the German executive committee for the investigation and control of cancer disease, another of the German roentgenographic society and the congress for diseases of nutrition and metabolism were held. At the cancer congress, Caspari reported the results of his researches on the cancer problem, especially from the standpoint of immunity. He stated that experimental animal cancers are, in a way, analogous to spontaneous cancers in man, but that the different origin of the two kinds of cancer must be kept in mind. Whereas a spontaneous cancer springs from a single group of cells or from several groups, and, in fact, may originate from a single cell, in the artificial transmission by inoculation the experimental animal is permeated with cancer tissue. But most of this cancerous material becomes necrotic, so that only certain small cell groups develop and form the tumor.

Caspari has been conducting researches on the significance of the necrotic substance, and has reached the conclusion that it exerts four different effects. Through chemotactic stimulation of the connective tissue of the animal it causes the formation of the capsule and stroma, and thus provides, indirectly, for the formation of the blood vessels that are necessary for the blood supply to the tumor. It serves, furthermore, as adequate sustenance to the developing tumor cells, exerts a toxic effect and calls forth a general immunity reaction on the part of the organism. Recent researches indicate that, with the decomposition of the cells, hormone-like substances arise, which, through their action on the whole organism, raise the level of immunity. It is a question of nonspecific immunity such as has already been shown to exist in numerous infectious diseases. Aside from this nonspecific immunity, there are some indications of a specific immunity. Caspari found that the serum of rabbits that have been inoculated with mouse tumor has an increased toxic effect on mice of all kinds, except such as are suffering from sarcoma. From this fact, Caspari concludes that the mice last mentioned were protected against sarcoma by specific antibodies.

Manninger, from Pest, reported on the excision of cancer by means of a cautery—so-called igniexcision. This method has proved efficacious in his hands not only for the removal of the primary tumor but also for the destruction of involved glands. The course of the operation is not essentially different from other operations. The vessels are divided between two clamps with a Paquelin cautery. The course of healing is smoother than in ordinary operations. Postoperative hemorrhages were observed in only two cases. Of ninety-eight patients operated on between 1900 and 1916, forty-one are still living. According to the report of the director of the Sauerbruch Clinic in Munich, Dr. G. Schmidt has been using, for some time, a similar procedure. It has created a favorable impression there, as well. The wounds become quickly sterile, and the patients recover rapidly. The cautery was employed only when a surgical operation seemed contraindicated. Von Eiselsberg is inclined to use this procedure in cancer of the abdomen, and he also is satisfied with the results.

Küttner reported to the surgical congress the results that he has achieved in the surgical treatment of sarcoma. According to his experiences, operation is superior to roentgen irradiation. Of his 740 patients, one patient is living seventeen years after the operation. During the first year after operation, 45.5 per cent. of the patients died (39.9 per cent. from sarcoma of the bone, and 49.5 per cent. from sarcoma of the soft parts); 14.8 per cent. died during the second or third year after operation (bone sarcomas, 15.2 per cent.; sarcoma of the soft parts, 14.6 per cent.); in the fourth or fifth year, 5.3 per cent. (bone sarcomas, 3.3 per cent.; sarcoma of the soft parts, 6.5 per cent.). Of 326 cures, ninety-four proved to be permanent, as compared with which there have been only from 32 to 36 per cent. of "three-year cures" reported by roentgenologists. Sarcomas may be divided into three classes: (1) those that should by all means be irradiated; (2) those that should be operated on without fail, and (3) those that should be operated on only under certain conditions. To the first group belong the inoperable sarcomas, sarcomas of the lymph glands and those of the thyroid.

To the second group belong all sarcomas, except the aforementioned, which, without danger to the patient, may probably be removed radically. As in carcinoma, the regional lymph glands should be removed in every sarcoma operation. To the third group belong the sarcomas that may not be removed radically, either on account of the site of the tumor, or on account of the extent of the mutilation that would result.

Anschütz found that, of 239 patients operated on for sarcoma, thirty-nine survived for more than three years. Of 174 peripheral (periosteal) bone sarcomas, a cure was effected in 9 per cent.; of sixty-five centrally located (myelogenous) sarcomas, a cure was brought about in 24 per cent. An especially good prognosis is furnished by the giant cell sarcomas, but some of them are not in reality sarcomas but ostitis fibrosa. Among the cases of sarcoma in which a cure was effected, there is one of sarcoma of the thyroid in which there has been no recurrence after four years.

Death of Leube and Quincke

Leube and Quincke, two clinicians of the previous generation, died within a few days of each other, both shortly before the completion of their seventy-ninth year, and both retaining up to the time of their death rare physical energy and mental vigor.

Leube, who died May 16 in a small health resort, had acquired fame chiefly in the field of gastro-intestinal pathology. As a pupil of von Ziemssen, he was a prominent representative of the hippocratic school and one who did not confine himself to conclusions based on the results of laboratory tests but always considered the patient. About ten years ago, Leube gave up his university position. Aside from participation in the social welfare movement for the control of tuberculosis, he had had scarcely anything to do with medicine since his retirement, devoting his time exclusively to studies on the history of art.

Quincke devoted himself to medical research almost until his last breath, and often contributed articles on the leading questions of the day. Among his most significant contributions to medical science, I may mention articles on acute circumscribed edema, meningitis serosa, pneumotomy, diseases of the liver, and, above all, lumbar puncture. He wrote also numerous articles on general questions of pathology, such as pathology of the heart, of the nervous system and of the kidneys.

VIENNA

(From Our Regular Correspondent)

May 13, 1922.

Proposed New Subject for the Medical Curriculum and Higher Schools

During the last three years, sweeping measures have been adopted in this country as regards social medicine and social insurance. The work entailed in the classification and estimation of the war injuries requires a great amount of special knowledge, and the majority of physicians on whom the burden of this was chiefly thrown were not well instructed along these lines. With the increase and spread of social provisional work and social insurance, and as more and more of the population are coming under its working, the adequate instruction of the physicians entrusted with this task is paramount. Therefore, it will be necessary to enable the more advanced students to gain that knowledge which the fully qualified physician requires, if he is called on to help in social work. Special courses dealing with the hygienics of industrial work, calculation of degree of disablement, and child and mother welfare centers will be instituted, and both theoretical and practical knowledge will thus be obtainable for all desiring it. The officials also who are engaged in this kind of administrative work shall be bound to enter these classes, preferably before entering the state service. Therefore, in all higher public schools—aside from the elementary schools—lectures on these subjects should be offered, while yearly graduate classes should be conducted for those who are already working under the social insurance acts. These were the chief points of a report recently made to the government by a committee of members of the national assembly, which is now being considered by a special committee of the House.

Welfare Centers of the American Red Cross in Austria for Infants and Young Children

The American Red Cross in Vienna has undertaken the task of organizing and developing plans for the welfare of infants in this country, along uniform and up-to-date lines. It became evident that all the charitable institutions dealing with this kind of work must be merged into one body, and that competent co-workers were necessary. The officials of the board of health and the state and district corporations, as well as the private welfare centers, were soon united, and their working staff was taken over by the American Red Cross. With the aid of the leading men in Austria, Professor Moll, Dr. Dehne, Dr. Koch and Dr. Pörner, a network of welfare centers, numbering ninety-nine stations all over the country, was established.

A number of fully qualified physicians and trained nurses were appointed for these stations. It was rather difficult, however, to find the necessary men for the country districts. Therefore, the American Red Cross has instituted a series of special classes in Vienna, chiefly for the benefit of the physicians entrusted with the care of the rural stations, where they are taught all that is required for dealing with the baby stations. The necessary number of trained nurses was not forthcoming; for these also a number of special courses had to be instituted, comprising three months of theoretical and six weeks of practical instruction in the Central Infant Station of Vienna. "Perfection classes" are being held now and then for the nurses in several country towns, and each group of nurses in turn is called on to attend them. The sites for the welfare centers were provided by the communities and municipalities, as well as fuel and lighting, while the equipment, instruments and apparatus were provided by the American Red Cross.

The chief factors in the work of these centers are these: Care is taken of the children from their birth until they complete their sixth year. Attention is focused on the infant in the first year of life, while the prospective mother is also looked after during pregnancy. Prophylaxis is the leading idea, and premiums are not given, for the mothers are to be educated to look on welfare care, of itself, as the thing aimed at. Only the healthy child is given the care of the centers, but close touch is maintained with physicians and hospitals, lest a pathologic condition threaten. An important feature of the plan is the visiting nurse or health visitor. Each center comprises one or two such visitors, besides the physicians and his assistants.

The American Red Cross intends to give in Baden (near Vienna) a "health demonstration," as it is termed in the United States; it will provide all children up to two years with special care, and will assist them and their mothers with milk, additional food and health premiums, thus demonstrating the value of this work for public health, and chiefly for the decrease of infant mortality. A journal of the American Red Cross published at regular intervals serves as an intermediary instrument for rapid dissemination of information to all cooperators. Thus, by means of funds granted by the American Red Cross and by aid from other sources, a lasting impression on the race may be made.

Old Age Provisions for Medical Men

With the exception of the small percentage of medical men who are engaged by the state or by large corporations, and who receive substantial pay with the right to corresponding pension on retirement or old age, the majority of our physicians are at present absolutely helpless, if, for some cause or other, they can no longer continue their practice. All insurance policies taken out in peace time for sums deemed then sufficiently high are now simply worthless, as they are paid out in a currency having a buying capacity nearly nil. The majority of pensions payable on the present scale of salaries, to which the physicians of the Krankenkasse or the state appointments are entitled, are also very meager, barely sufficient to maintain life.

Only a few physicians are well situated financially, and able to live on their private means. Therefore, the problem of providing for the old or invalid practitioner or for his family, in the event of his death, has become a vital one. Self-help is the only possible means, and the profession has now taken up the matter. The organization of Vienna practitioners has instructed a special committee to study the question and suggest a suitable method of handling the problem. The following plan, similar to one which is employed in several institutions of a private nature, has been recommended and will no doubt be adopted: Every member of the profession, private practitioners and hospital physicians, or men under service in corporations not guaranteeing an adequate old-age pension, shall, by law, be bound to become members of a mutual insurance institute. In case a member dies or reaches a certain age limit (from 65 to 70 years), or is invalided, all other members have to contribute a certain modest sum—say, 500 kronen. This would mean that in such an event a sum of over three million kronen would be available at once for the physician or his family, as we have over 6,000 practitioners here. Such a sum is, even at our present rate of currency, quite a handsome one, enough to keep a family going for more than a year, or to enable them to become self-supporting. In addition to these contributions by the practitioners, it is intended to raise very considerable sums for the same purpose by a tax of from 1 to 2 per cent. on each prescription, by contribution from the "Bundeskrankenkasse" (the sickness club, with free choice of physicians) of 1 per cent. deducted from the fees paid to physicians, and by a similar tax of 1 per cent. on all bills paid in nursing homes and sanatoriums. It has been calculated that at least thirty million kronen could be obtained within one year, and probably much more. It would thus be possible either to increase substantially the sum payable in each case or to diminish the contributions payable by each member of the institute.

The foregoing plan, roughly sketched, is only one of several offered for consideration, but is the one most likely to be adopted. It has been thought unwise to provide for yearly or monthly pensions, since, owing to the violent fluctuations of the currency value, no fixed relation between premiums and pensions is possible, and a substantial sum granted at once serves best the purpose aimed at.

Decrease of Midwifery Cases in Private Practice

Both general practitioners and midwives are complaining that the number of pregnant women who are cared for at home during labor is constantly diminishing. They, as a rule, prefer nowadays to arrange for their confinement in one of the public institutes, where the house physician and the midwife are not able to assist at the birth of the child. It is true that the present domestic or, rather, housing difficulties makes it preferable to deliver a woman in a well equipped hospital rather than in the ill ventilated, narrow or overcrowded flat or bedroom, which is only too often also the sitting and dining room and nursery, all in one.

In order to counteract the deleterious effect of these conditions on the financial situation of the general practitioner, endeavors are being made to arrange, in all public hospitals and gynecologic clinics, that private patients be admitted under the care of their own physician or their own midwife, at moderate rates. This would not only tend to lessen the deficit of the hospitals, as these patients would, of course, have to pay more than is paid for the ordinary hospital patients by the state, but would also gradually settle the problem of the "sanatorium for the middle classes" which for a long time has been puzzling all concerned. The wealthy classes can avail themselves of the first class confinement homes and sanatoriums, and for the poor people we have excellently equipped hospitals, clinics and wards; but the middle classes were and are worse off, just as in every other respect.

Vital Statistics for 1921

The statistic department of the ministry of health has published a few data referring to the fluctuations of the population in Austria last year which give a very interesting insight into the slow but constant improvement in the general health conditions of this country. Thus, the number of marriages has increased by 6,166, the total being 83,575. Of course, the greatest number took place in Vienna, viz., 31,164, or 4,982 more than the year before; 142,133 children were born, while 117,023 persons died. Among the latter figures, we find in the whole country 4,351 cases of stillbirth and 21,701 children under 12 months. Deplorable as these figures are, they nevertheless show that the mortality of children over 1 year of age is markedly less, because of the greater care bestowed on them by the welfare centers, just as in the case of older persons, who are also looked after in a more effective way.

As regards the causes of death, we find a distinct drop in tuberculosis, whooping cough, dysentery and organic heart disease, as causes of death, while measles, pneumonia, cholera infantum (due to the hot summer) and infectious diseases claimed more victims than last year. There died in Vienna alone 33,672 persons, while only in two provinces was the number of deaths higher than last year (in Upper Austria and the Tyrol).

Marriages

HENRY RICHMOND SLACK, JR., Baltimore, to Miss Elizabeth Blanchard Randall, at Catonsville, Md., June 14.

JOHN MINOR, Washington, D. C., to Miss Mildred Angevine Truslow of Summit, N. J., April 22.

SAMUEL B. BARISHAW, Jersey City, N. J., to Miss Rena R. Harris of Newark, N. J., April 6.

PAUL FORREY STOOKEY, Kansas City, Mo., to Miss Clara Sachse, at Kansas City, recently.

WILLIAM EDGAR MATTHEWS to Miss Eva Mildred Waters, both of Johnstown, Pa., June 11.

MARTIN ROBERT LORENZEN, Curtice, Ohio, to Miss Pearl A. Bush of Howell, Mich., June 10.

UREY GUESS DAVIS to Miss Emma Cooke Pickering, both of Hopkinsville, Ky., June 14.

BERNARD JOHN MCCORMICK to Miss Cecelia Virginia Lee, both of Pittsburgh, May 10.

EDWIN LOUIS FREDERICK to Miss Bertha D'Unger, both of Catonsville, Md., June 7.

LEON E. SEVEY to Miss L. May Glover, both of Grand Rapids, Mich., May 20.

ALBERT STEIN, Springfield, Mass., to Miss Ida Tobackman, at Springfield, June 4.

HERBERT N. MCCOY to Mrs. Ethel M. Terry, both of Chicago, June 13.

Deaths

Crawford Lester Hall ⊕ Kansas City, Mo.; Jefferson Medical College, Philadelphia, 1867; professor of diseases of women, and president of the board of directors of the Medical Chirurgical College of Kansas City; professor of diseases of women, Kansas City Postgraduate Medical School and Hospital; at one time professor of gynecology at the University of Kansas School of Medicine, Rosedale, Kan.; member of the Western Surgical and Gynecological Association; president of the Missouri State Medical Association, 1895-1896; served as president of the Kansas City Academy of Medicine, 1893; secretary of the Section of Obstetrics and Gynecology of the American Medical Association, 1897-1898; died at his home, June 10, aged 76, from cerebral hemorrhage.

Winifred Estelle Thomas Heston, East Jordon, Mich.; Laura Memorial Woman's Medical College, Cincinnati, 1901; associate physician at the General Hospital, Miraj, India, 1903-1907; later in general practice at Kohlapur, and in charge of the Good Samaritan Hospital, Jhelum; author of "A Blue Stocking in India," 1910; died, recently, from an overdose of an opiate, taken accidentally, following a long illness, at East Jordan, aged 49.

Russel Herbert Boggs ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1897; member of the American Roentgen Ray Society, and the New York Roentgen Ray Society; formerly radiographer at the Allegheny General Hospital and professor of radiography and phototherapy, Western Pennsylvania Medical College and Pittsburgh Dental College; died, June 2, aged 47.

Frederick Kellum Blair, Morehead, Ky.; University of Louisville Medical Department, Louisville, 1914; member of the Kentucky State Medical Association; served in France, M. C., U. S. Army, with the rank of lieutenant; died, June 1, at the St. Anthony's Hospital, Louisville, aged 32, from a valvular lesion of the heart.

Sampy Davis Hatfield ⊕ Kokomo, Ind.; Louisville Medical College, Louisville, 1906; died, June 2, aged 41, at the Good Samaritan Hospital, from a bullet wound through the abdomen, received in his office when the revolver of Patrolman Randall of the Kokomo police force dropped to the floor and exploded accidentally.

Rollo Howard Hoey, Easton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1909; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; died, May 23, aged 36, at Morristown, N. J., from cardiorenal disease.

Oliver George Winters, Des Moines, Iowa; Bellevue Hospital Medical College, New York, 1888; formerly city physician, member of the city council and school board of La Crosse, Wis.; member of the Iowa State Medical Society; died, June 4, aged 63.

Richard Proctor Huger, Anniston, Ala.; Medical College of the State of South Carolina, Charleston, 1871; member of the Medical Association of the State of Alabama; formerly mayor of Anniston; died suddenly, June 3, aged 72, from heart disease.

Henry F. Scott, Atlanta, Ga.; Atlanta Medical College, Atlanta, Ga., 1874; for thirty years secretary to the Central Bank Block Association; formerly demonstrator of anatomy at the Atlanta Medical College; died, May 17, aged 69, from heart disease.

Abner Byron Bailey, Fennimore, Wis.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; for several years a member of the state board of medical examiners, and president of Fennimore Village; died, May 23, aged 71, from paresis.

Frederick V. Matlock ⊕ Salem, Ky.; Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1907; died, May 10, aged 55, at the Riverside Hospital, Paducah, from chronic interstitial nephritis.

Ernest H. Wiedrich, Newark, N. Y.; Syracuse University College of Medicine, Syracuse, 1908; member of the Medical Society of the State of New York; died, May 24, aged 36, at the home of his father in Bergen.

Emmett James Hinton, Wrightsboro, Texas; Medical Department, University of Tennessee, Memphis, 1904; member of the State Medical Association of Texas; died, May 13, aged 40, from chronic nephritis.

Jonathan Larkin Forward ⊕ Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1857; for several years mayor of Chester; chief of staff at the Chester Hospital; died, June 7, aged 90.

William A. Justice, Greenfield, Ind.; Kentucky School of Medicine, Louisville, 1878; member of the Indiana State Medical Association; formerly county coroner; died, June 6, aged 63, from cerebral hemorrhage.

Helen McNicholl English, Seaside Heights, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1906; hanged herself, June 7, at the home of a friend in Burlington, while temporarily insane, aged 38.

John H. Stuckey, Rosenberg, Texas; Memphis Hospital Medical College, Memphis, 1901; member of the State Medical Association of Texas; died, May 12, aged 49, at Sanatorium, from tuberculosis.

George Newlands ⊕ Seattle; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1879; died, May 1, aged 70, at the Providence City Hospital, Seattle, from meningitis.

David F. Unger, Mercersburg, Pa.; Bellevue Hospital Medical College, New York, 1869; member of the Medical Society of the State of Pennsylvania; Civil War veteran; died, June 2, aged 78.

Oliver P. Norris, Waltonville, Ill.; Cincinnati College of Medicine and Surgery, Cincinnati, 1871; president of the Waltonville State Bank; Civil War veteran; died, June 1, aged 78.

Winfield S. Ferguson, Kansas City, Kan. (licensed, Kansas, 1892); also a veterinarian; was found dead, June 6, with a bullet wound through his head, presumably self-inflicted, aged 61.

Henry Calhoun Fleming ⊕ Denison, Texas; Louisville Medical College, Louisville, Ky., 1889; died, April 26, aged 69, at Henderson, Ky., from dilatation of heart.

George William Lane, Corning, N. Y.; University of Buffalo Department of Medicine, Buffalo, 1886; for several years mayor of Corning; died, May 24, aged 64.

Byron Garrett Van Horne ⊕ Englewood, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1896; died, May 20, aged 64, from cerebral hemorrhage.

Herbert S. Sleeper ⊕ Lewiston, Me.; University of Vermont College of Medicine, Burlington, Vt., 1891; died in May, aged 66, from angina pectoris.

John L. Kennard, Morrisville, Mo.; Medical College of Ohio, Cincinnati, 1878; died, May 17, at Fredonia, Kan., aged 68, from cerebral hemorrhage.

Edward W. Paul, Forest City, Ill.; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; died, May 26, aged 66.

Elzey V. B. Buckingham, Willard, Ohio; Miami Medical College, Cincinnati, 1872; died, June 5, aged 81, from carcinoma of the stomach.

James W. Mills, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1897; Confederate veteran; died, June 2, aged 89.

Salmon Giddings Howd ⊕ Winsted, Conn.; Jefferson Medical College, Philadelphia, 1883; died, May 10, aged 64, from interstitial nephritis.

William H. Palmer, Blair, Neb.; Rush Medical College, Chicago, 1870; Civil War veteran; was found dead in bed, June 2, aged 83.

John William Lilly, Toledo, Ohio; Starling Medical College, Columbus, Ohio, 1882; died, May 25, aged 65, from mitral stenosis.

Robert Furman Adams, Syracuse, N. Y.; Chicago Homeopathic Medical College, 1880; died, April 18, aged 74, from pneumonia.

Katherine B. Clapp, Chicago; Hahnemann Medical College and Hospital, Chicago, 1894; died, June 12, aged 71, from carcinoma.

Thaddeus N. Kabler, Bedford Springs, Va. (years of practice); died, April 28, aged 94, following fracture of the femur.

Charles Snyder, London, Ohio; Medical College of Ohio, Cincinnati, 1870; died, June 1, aged 73, from paresis.

Oscar J. R. Hanna, Jackson, Mich. (licensed, Michigan, 1900); died, June 2, aged 75, from heart disease.

James King, Leamington, Ont. (licensed, Ontario, 1893); died, March 24, aged 53.

⊕ Indicates "Fellow" of the American Medical Association.

Correspondence

"BLUISH DISCOLORATION OF THE UMBILICUS"

To the Editor:—About a week after the appearance of Dr. Novak's article on bluish discoloration of the umbilicus in the diagnosis of ruptured extra-uterine pregnancy (The Journal, March 4, 1922, p. 643) I was examining a tertipara who had come to me about a month earlier, and was surprised to find that a marked bluishness had developed below the umbilicus, in the interval. It was, if anything, even deeper in hue than that shown in the illustration. She was at that time in the beginning of the seventh month of pregnancy and had absolutely no evidence of anything abnormal in the pelvis or abdomen.

She progressed satisfactorily with her pregnancy and was delivered of a normal 6¾ pound (3 kg.) boy, after being in labor a little less than three hours, May 31.

During the last three weeks of pregnancy the discoloration gradually faded and had almost entirely disappeared at the time of delivery.

From this case it can be seen that the sign is not particularly reliable as evidence of ruptured tubes or uterus, when it appears late in pregnancy.

F. H. Stibbens, M.D., Oakland, Calif.

"PHYSICAL EXAMINATION OF FOOD HANDLERS"

To the Editor:—My reaction to the article of Dr. L. B. Gloyne on the physical examination of food handlers was similar to that of Col. P. M. Ashburn, whose letter appears in The Journal, June 3, and I feel that this point is of sufficient importance to be further emphasized.

In an experience of fifteen years, I do not recall a single case of accidental infection of either syphilis or gonorrhea, except in professional people, namely, nurses or physicians. I feel, therefore, that much of the propaganda emphasizing the dangers of accidental infection is greatly exaggerated and without real point. The law in Minnesota formerly removed automatically any venereally diseased person from an occupation of food handling of any kind. Realizing the injustice of this, changes were made in it in 1921 in order that it might be applied only in specific instances in which there seemed a real reason for temporarily removing the person from his occupation. This law is at present enforced by the food and dairy commissioner, but it will be noted that on discovery of such diseased persons, they are removed from their occupation only while the state board of health is making an investigation, and that their permanent removal depends entirely on valid reasons, as indicated by investigation of that board.

This section of our law reads:

> Chapter 495, Section 45. Employment of diseased person.—It shall be unlawful for any person to work in or about any place where any fruit or any food products are manufactured, packed, stored, deposited, collected, prepared, produced or sold, any person or persons whose condition is such that disease may be spread to his associates direct, or through the medium of milk, cream, butter, other food or food products, likely to be eaten without being cooked after handling, whether such condition be due to a contagious, infectious or venereal disease, in its active or convalescent stages, or to the presence of disease germs, whether accompanied by, or without, any symptoms of the disease itself.
>
> It shall be the duty of the state dairy and food commissioner, his assistants, inspectors or agents, to report to the state board of health for investigation any person suspected to be dangerous to the public health as provided for in this section, and immediately to exclude such person from such employment pending investigation and during the period of infectiousness, if such person is certified by the state board of health or its authorized agent to be dangerous to the public health.

It may not be esthetic to have persons venereally diseased handling food. On the other hand, with anything but the exceptional case of syphilis with very marked infectious skin lesions, it is certainly silly to keep a man away from his legitimate occupation for weeks or months at a time.

H. G. Irvine, M.D., Minneapolis.
Director, Division of Venereal Diseases,
Minnesota State Board of Health.

"THE PROPHYLAXIS OF VENEREAL DISEASE"

To the Editor:—The accompanying notes and figures appeal to me as being worthy of publication at this time as a complement to those by Dr. Walker (The Journal, May 20, 1922, p. 1510). One should also keep in mind that chemical prophylaxis is not applicable to women. Among a large group of adult males, with facilities for chemical prophylaxis at hand, and with punishment for failure to use prophylaxis if they became diseased, our figures definitely show that the more prophylactics administered, that is, the more admitted exposures, the greater the incidence of venereal disease. On the other hand, when opportunity for prophylaxis was reduced by curtailment of opportunity of exposures, the incidence of venereal disease became practically nil. That chemical prophylaxis alone will ultimately bring realization of the abolition of venereal disease is still far fetched.

TABLE 1.—CHEMICAL PROPHYLAXIS AND VENEREAL DISEASE, PANAMA CANAL DEPARTMENT

Month, 1918	Strength, Average	Number of Prophylactic Treatments	Monthly Rate per Thousand	Number of New Venereal Disease Cases	Monthly Average of New Venereal Disease Cases per Thousand	Annual Rate of New Venereal Disease Cases per Thousand
January	10,832	2,262	208.6	79	7.293	87.516
February	10,743	1,847	171.0	91	8.47	101.64
March	10,863	2,072	190.8	87	7.08	84.96
April	10,996	1,384	126.6	74	6.36	76.32
May	10,324	1,811	175.5	69	6.68	86.18
June	10,498	19	1.7	51	4.85	58.20
July	10,991	17	1.0	15	1.36	16.32
August	10,826	3	0.202	7	0.64	7.68
September	10,838	2	0.17	2	0.18	2.16
October	11,811	6	0.508	2	0.16	1.92
November	12,466	20	1.5	4	0.38	4.56
December	12,010	47	3.9	3	0.41	4.92
1919						
January	11,773	44	3.6	12	1.01	12.12
February	10,536	40	3.7	6	0.569	6.82
March	7,488	60	8.01	26	3.47	41.64
April	6,044	68	8.00	25	4.15	49.80
May	4,903	86	11.2	21	4.28	51.36
June	4,659	109	21.24	23	4.93	59.16
July	4,640	571	120.04	36	8.4	10.8
August	4,640	1,209	260.56	84	18.1	21.73
September	4,101	811	197.75	36	8.77	105.24

That it is possible to limit exposures, and hence to limit venereal disease in a community was definitely proved in Porto Rico as shown by the shorter table, from Camp Las Casas. The venereal admission rate for the American Army in Porto Rico in 1898 for the first six months was 467.8 per thousand.

TABLE 2.—CHEMICAL PROPHYLAXIS AND VENEREAL DISEASE AT CAMP LAS CASAS, PORTO RICO

Month, 1918	Average Strength	Number of Prophylactic Treatments	Number of New Cases of Venereal Diseases
June	2,055	10	0
July	8,614	13	2
August	11,656	8	7
September	12,216	5	7
October	12,311	2	1
November	12,389	4	3

The story of venereal disease prophylaxis in these communities is too long for retelling here. Some of the salient features may be learned by reviewing:

Goodman, Herman: Genital Defects and Venereal Diseases Among Porto Rican Draft Troops, The Journal, March 29, 1919, p. 907; Prostitution and Community Syphilis, *Am. J. Pub. Health* **9**: 515 (July) 1919; Prostitute in Jail, *Med. Rec.* **97**: 483 (March 20) 1920; Law Enforcement Reduces Venereal Disease Incidence, *Soc. Hyg. Bull.*, May, 1920, p. 7; Regulation vs. Abolition of Prostitution, *Med.-Legal J.* **37**:52, 73, 1920; Regulation vs. Suppression of Prostitution, *Western Med. Times* **40**: 270, 1921.
Report of the Governor of Porto Rico to the Secretary of War, 1919.
Notes and Comments, Social Hygiene **5**: 259 (April), 399 (July) 1919.

Conditions differ in various parts of the world, yet one could not ask for a more difficult place to demonstrate venereal prophylaxis by reduction of exposures than in a brigade of native troops in the tropics, as was done in Porto Rico, or among Americans in Panama.

Herman Goodman, M.B., New York.

THE CASE OF WILLETTA HUGGINS

To the Editor:—In The Journal, June 17, appeared an account of the remarkable sense-perceptions shown by Willetta Huggins before the Chicago Medical Society. This report is followed by Professor Jastrow's comment on the exhibition of the girl's astounding and to him incredible power of smell and touch. It is his comment that prompts this letter.

I have known of some remarkable feats in the way of touch and smell displayed by persons whose absolute blindness was beyond question. For instance, in the Philadelphia School for the Blind where I was a pupil in my boyhood was a girl born without sight whose delicacy of touch was such that she was able to read with ease through four thicknesses of a muslin handkerchief the books of raised letters ordinarily used by sightless persons. In the Perkins School for the Blind in Boston I believe was at one time a young woman (her name I do not recall) who was said to be able by the sense of smell alone to assort correctly the laundered clothes of the children of the institution.

Those are instances of such unusual development of special senses that it makes it not very difficult to accredit to Miss Huggins special powers of sense-perception without, as intimated by Professor Jastrow, the "will to believe." Indeed, so far am I from being willingly credulous as regards all that Willetta does, that I cannot but believe she must see and hear slightly. In fact, I so expressed myself in a letter to Mr. Hooper, superintendent of the Janesville School, last autumn. In his reply he stated that he and others had subjected her to tests that seemed to prove beyond question her total deafness and blindness. Nevertheless, I am so staggered by her seeming ability to read what is said by the vibrations imparted to a pole resting on the head of the speaker that I still question whether she cannot hear to a limited degree.

There is nothing impossible in Willetta's ability to understand words by resting her hand on the top of the speaker's head or on the chest. I am staggered again by her seeming ability to detect by smell the various colors in skeins of wool or silk, and still more by her recognition in the same way of the colors of natural flowers all of the same kind. Therefore, to set this whole matter at rest, I hope Mr. Hooper will see fit to shut out all possibility of light by sealing the eyelids by means of court plaster and of excluding all sounds by plugging the girl's ears with some substance, as putty or chewing-gum, and finally test the pole experiment by having some nonconductor, as glass, placed between the skull and the end of the stick.

In conclusion, let me say I am still of an open mind and only desire to have this question settled beyond the peradventure of a doubt.

Robert H. Babcock, M.D., LL.D., Chicago.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PENETRATION OF ROENTGEN RAY

To the Editor:—The theory of the roentgen ray as to distance is accepted as light: that it has a penetration in proportion to the square of the distance inversely. For example, 5 inches from the tube, 5 × 5 = 25; 7 inches from tube would be 7 × 7 = 49, or about one-half of the penetration; or you would say the same of feet in place of inches: 5 feet twice as strong as 7 feet. I do not believe that this is true at these different distances. The three rays given off the roentgen ray—alpha, beta and gamma—all have different velocity and penetration and are very unlike light in many ways. They cannot be refracted or deflected from a straight line, and they have many other properties unlike light. I would be glad to have expert view on this subject.

Paul Peniston, M.D., Newnan, Ga.

Answer.—The "inverse square of the distance" law has no reference to penetration by the roentgen ray. It simply refers to the intensity at different distances from a given roentgen-ray tube in operation. This intensity varies inversely as the square of the distance in spite of the fact that the beam of the roentgen ray is made up of a number of different qualities of roentgen ray, these variations in quality depending on the variations in wave length.

The beam of light from an ordinary lamp is also made up of various qualities of light, depending on the wave length; i. e., in the beam there is light of various colors from the red to the violet ends of the spectrum. However, disregarding the very small absorption in air, the intensity of light on any given surface falls off inversely as the square of the distance from the source of the light to that surface. Exactly the same thing is true of the roentgen ray. Disregarding the small amount of absorption in air, roentgen-ray intensity (not penetration) will fall off inversely as the square of the distance from the source.

There seems to be a misunderstanding in one part of our correspondent's letter in which he states that alpha, beta and gamma rays are given off by a roentgen-ray tube. Radium gives off these three kinds of rays. Alpha rays are ejected particles of gas; beta rays are electrons; gamma rays are electromagnetic waves.

Only the electromagnetic waves are given off from a roentgen-ray tube; i. e., only rays similar to gamma rays. It is probably misleading, however, to call them gamma rays, because they are very different in wave length and consequently in quality and penetration from the very short wave lengths given off by radium. The correspondent has been misled fundamentally by confusing intensity with penetration. Intensity refers to the amount of roentgen ray, and penetration to the quality.

SPINAL SUBARACHNOID BLOCK

To the Editor:—What is the cause of spinal subarachnoid block in spinal meningitis? I have wondered whether opisthotonos were not responsible, but can find no literature on the subject.

G. T. Spencer, M.D., South Bend, Texas.

Answer.—By "spinal subarachnoid block" a condition is meant in which the flow of cerebrospinal fluid is interrupted by an obstruction in the spinal canal, the usual cause of which is meningitic exudates or a spinal cord tumor. The condition has become well known since the method of suboccipital puncture into the cisterna magna has come into vogue. The patient is made to lie horizontally on one side, and needles are inserted into the cisterna and the lumbar sac at the same time and manometric readings are made. Normally the pressure is the same, while in "block" the cistern pressure is higher. Furthermore, the appearance and the chemical and cytologic condition of the two samples of fluid may vary greatly. Thus, in a case of meningitis with the "block" in the cervical or thoracic region, a small amount of clear or nearly clear fluid under low pressure and with a low cell count might be secured by lumbar puncture, while the cisterna fluid might be purulent and under high pressure. Another form of "block" occurring in meningitis is the "ventricular block" caused by closure by inflammatory exudate of the foramina of Magendie and Luschka by which the ventricles communicate with the subarachnoid space. In this case both the cisterna magna and the spinal subarachnoid space are distal to the obstruction. In order to demonstrate the different pressure and character of the fluid above and below the obstruction and to relieve the serious pressure symptoms due to the resulting acute hydrocephalus, ventricular puncture is necessary. As early as 1908, Cushing and Sladen (*J. Exper. Med.* **10**:548, 1908) reported successful treatment of ventricular block by puncture of a ventricle and injection of serum. More recently, De Witt Stetten and Dudley Roberts (The Journal, Jan. 25, 1919, p. 244) devoted a paper to this subject and advocated ventricular drainage by puncture of the corpus callosum. The subject of spinal subarachnoid block is discussed by Paul Wegeforth, J. B. Ayer and C. R. Essick (*Am. J. M. Sc.* **157**:789 [June] 1919), who describe fully the technic of cisterna puncture.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 11. Chairman, Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

Colorado: Denver, July 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 11-12. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 11. Sec., Eclec. Bd., Dr. James Edwin Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

District of Columbia: Washington, July 11. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Hawaii: Honolulu, July 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

Illinois: Chicago, June 26-29. Sept. of Registration, Mr. V. C. Michels.

Indiana: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, State House, Indianapolis.

Maine: Augusta, July 5-6. Act. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Massachusetts: Boston, July 11-13. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

New Mexico: Santa Fe, July 10-11. Sec., Dr. R. E. McBride. Las Cruces.

New York: Albany, Buffalo, New York City and Syracuse, June 26-29. Assistant, Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

North Dakota: Grand Forks, July 4-7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, July 11-12. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 4. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 11. Sec., Mr. Thomas E. Finnegan; State Capitol, Harrisburg.

Rhode Island: Providence, July 6-7. Sec., Byron U. Richards, State House, Providence.

South Carolina: Columbia, June 27. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

South Dakota: Waubay, July 18. Director, Dr. H. R. Kenaston, Bonesteel.

Utah: Salt Lake City, July 5. Director, Mr. J. T. Hammond, State Capitol, Salt Lake City.

Washington: Olympia, July 11. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 11. State Health Commissioner, Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 27-29. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Oklahoma January Examination

Dr. J. M. Byrum, secretary, Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 10-11, 1922. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Two candidates received duplicate licenses. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1901)	75
St. Louis College of Physicians and Surgeons	(1921)	85
Memphis Hospital Medical College	(1901)	80
Fort Worth School of Medicine	(1910)	87

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Atlanta Medical College	(1914)	Georgia
Chicago College of Medicine and Surgery	(1914)	Missouri
Rush Medical College	(1897)	California
Louisville and Hospital Medical College	(1908)	Kentucky
University of Louisville Medical Department	(1907)	Kentucky
Tulane University	(1911)	Missouri
John A. Creighton Medical College	(1905)	Nebraska
Barnes Medical College	(1904)	Iowa
Eclectic Medical Institute	(1892)	Kansas
Vanderbilt University	(1921)	Tennessee
Medical College of Virginia	(1915)	Virginia

Oregon January Examination

Dr. Urling C. Coe, secretary, Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 3-5, 1922. The examination covered 12 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 13, including 1 osteopath, passed, and 6, including 2 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
George Washington University	(1907)	1
Bennett Medical College	(1911)	1
Northwestern University	(1896), (1917)	2
Homeopathic Medical College of Missouri	(1900)	1
St. Louis University School of Medicine	(1921)	2
University and Bellevue Hospital Medical College	(1914)	1
University of Oregon	(1920), (1921)	2
Western University	(1904)	1
University of Bombay	(1919)	1
Osteopath		1
FAILED		
Hahnemann Medical College and Hospital of Chicago	(1921)	1
Southwest School of Medicine and Hospital	(1916)	1
University of Oregon	(1921)	2
Osteopaths		2

West Virginia January Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral, written and practical examination held at Charleston, Jan. 10-11, 1922. The examination covered 9 subjects and included 108 questions. An average of 80 per cent. was required to pass. Of the 12 candidates examined, 5 passed and 7, including one undergraduate, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University	(1920)	84
Tulane University	(1921)	81
University of Maryland	(1920) 91, (1921)	90
Meharry Medical College	(1917)	80
FAILED		
College of Physicians and Surgeons, Boston	(1915)	68
Barnes Medical College	(1907)	*
Meharry Medical College	(1916)	46
University of Lille	(1905)†	41
National University, Athens	(1913)† 66, (1915)†	67
Undergraduate		34

Dr. Henshaw also reports that from October, 1921, to January, 1922, eleven candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Georgetown University	(1916)	Dist. Colum.
Georgia College of Eclectic Medicine and Surgery	(1912)	S. Carolina
Tulane University	(1916)	Mississippi
Johns Hopkins University	(1916)	Maryland
St. Louis University School of Medicine	(1919)	Missouri
Washington University	(1919)	Wisconsin
Fordham University	(1918)	Connecticut
Ohio State University College of Medicine	(1915)	Ohio
Jefferson Medical College	(1916)	Penna.
Medical College of Virginia	(1916)	Virginia
University of Virginia	(1896)	Virginia

* No grade given.
† Graduation not verified.

Connecticut March Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, March 14-15, 1922. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 17 passed and 4 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1917)	*
Baltimore Medical College	(1913)	75
College of Physicians and Surgeons, Baltimore	(1904)	75
Johns Hopkins University	(1914)	*
Harvard University	(1904)* (1921)	87.2
Tufts College Medical School	(1914),* (1921) 79.6,	80
Columbia University	(1913) 77.1, (1921)	85
Jefferson Medical College	(1920)	88
Temple University	(1921)	80.4
University of Pennsylvania	(1920)	85
University of Vermont	(1921) 81, 82.5,	84.9
FAILED		
Medical School of Maine	(1898)	*
University of Pennsylvania	(1918)	*
University of Naples	(1913)† 60, (1920)†	59.7

* No grade given.
† Graduation not verified.

Social Medicine

THE DISADVANTAGES AND LIMITATIONS OF CLINIC OR GROUP MEDICINE

GORDON WILSON, M.D.
Professor of Medicine, University of Maryland School of Medicine
Baltimore

The terms "group practice" and "clinic medicine" have been applied to quite a number of methods of practice, the main factor in all, however, being that the patient is attended, the word "attend" being used in its broadest sense, by a group of physicians rather than by one.

For the purpose of this paper I have limited the discussion of "Group Practice" to what is generally understood as consultation practice, in which the patient seeks other advice than that of his usual medical adviser or his physician seeks consultation.

It was the custom of Osler, and is the custom of all good internists of today, to seek special advice when they deem it necessary; but this advice is sought in each case from the specialist who, in the given case, can best advise, and not necessarily from the specialist who is allied with the group head; and it is on this fundamental point that group practice differs today from good consultation practice.

In a critical study of any popular movement; it is desirable to know its origin and ascertain, if possible, the underlying causes for its beginning and growth.

The successful start of group medicine might be said to date from the recognition of the excellent work done by the Mayo brothers and their associates at Rochester, Minn., such recognition occurring between the years 1905 and 1910.

FACTORS IN GROWTH OF GROUP PRACTICE

In trying to ascertain the causes leading up to this radical change in procedure, it is well to try to visualize the conditions of medical learning and education, and the advance in medical and allied sciences during the preceding quarter century.

Medical education in this country was essentially clinical, and showed but moderate advance and improvement from its beginnings in the opening of the nineteenth century up to 1906, at which time the number of schools had increased to a total of 162, the maximum number ever reached, the greatest number of matriculates, however, being in 1904, in which year more than 28,000 students were matriculated. The brilliant work of Pasteur and other scientists had by this time become so generally recognized that it was necessary to recast medical education entirely and give the necessary training in what we term today the scientific branches, which meant that no college could exist on the fees paid by students; and as a result of this, as well as the pressure of an enlightened medical public opinion, the number of colleges has decreased since that date to sixty today, which are recognized as giving a satisfactory four year course in medicine. The leading physicians of the country, as a class, at the time of the first broad recognition of the success of the Mayo Clinic, were men who had graduated in the period prior to the marked improvement in medical education, and for that reason many of them had only a theoretical knowledge of scientific advances, and were, in a measure, incapable of using these advances to their best advantage. It was during this quarter of a century that specialism made its great advance, as a result not only of the advances in medicine proper during this period, but also of advances and discoveries in kindred sciences, the roentgen ray and the electric light being examples. While these advances tended, as a whole, to develop specialism, there were a few which, on the other hand, allowed the general practitioner to encroach upon the specialist's field, such an advance being in the development of the electrical ophthalmoscope, which permits the trained internist of today to know the fundus of the eye as he never knew it prior to the use of this instrument.

The formation of new specialties, and growth in all, made it impossible for the internist to keep abreast of this rapid advance in knowledge, though to a far less extent than is generally supposed in the diagnostic side, as contrasted with the operative or therapeutic.

FOCAL INFECTION THEORY

An even greater factor in the growth of group practice has been the wide acceptance of the "focal infection" theory of disease, and the development of surgical technic to the point at which the immediate dangers from an operation are so slight that frequently an operation is used, like quinin, as a therapeutic test, and, like quinin, frequently fails to cure the condition.

The history of the growth of the "focal infection" theory is of interest. From the standpoint of therapy it might be said to date from the report[1] on rheumatic fever, of a committee of the British Medical Association, published in 1889, which called attention to the frequency with which rheumatic fever was preceded or ushered in by a sore throat. An even earlier paper bearing on this theory was that of Riggs[2] in 1875, in which he called attention to the association of pyorrhea and "rheumatism," and showed that, following the curing of the pyorrhea, the rheumatism had disappeared. Riggs insisted that the systemic condition was due to the pyorrhea, and not the reverse, as was generally accepted then. This paper made no impression at the time beyond the giving of a personal name to pyorrhea.

The report of the British Medical Association committee did, however, bear fruit, and slowly from this time onward the tonsils were recognized as the portal of entry for the organism causing rheumatic fever, with its serious complication of carditis, and there resulted the practice of removing the tonsils and thus preventing other attacks.

The wide acceptance of the "focal infection" theory, both by the profession and by the public at large, played a large part in the growth of specialism, since it was believed by the public and by the profession that only the specialist was able to decide whether or not a tissue (or organ) was diseased. The ground for this belief on the part of the profession was the vast literature that had accumulated, so vast that no one mind could keep abreast of it, and few realized that this literature contained relatively little pertaining to diagnosis, and that even that was controversial to a large degree.

Today, the difficulty in determining the focus of infection, or portal of entry, is not in finding a tissue that is pathologic but in deciding whether the lesion is "historical" or healed, or whether it is active. In discussing this point let us take up that small area of the body that accounts for more than 90 per cent. of "foci" that are treated medically or surgically, namely, the mouth and nose, and the structures adjacent. Here, the tonsils and teeth are most frequently looked on as the offending members; and can we tell always, or even frequently, whether a lesion is healed or not? Today, laryngologists differ as to the tonsils, some condemning the submerged tonsils, others the hypertrophied, others again those showing adhesions, or atrophic, while some judge by the degree of enlargement of the tonsillar glands. Within the past year I have asked three prominent laryngologists of my home city as to who was the better judge of the need of a tonsillectomy, the laryngologist or the good family physician, and all three unhesitatingly said the latter.

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[1] Cheadle, W. B.: Harveian Lectures on the Various Manifestations of the Rheumatic State as Exemplified in Childhood and Early Life, Lancet **1**: 872, 1889.

[2] Riggs, J. W.: Suppurative Inflammation of the Gums and Absorption of the Gums and Alveolar Process, Western Dental J. **12**: 529, 1898 (republication).

If a tonsillectomy were a minor operation, this difference of opinion would matter little in most cases; but this is far from being the case, save in young children, and even here the growing list of lung abscesses following tonsillectomy makes one hesitate to say that there is little or no danger in the operation.

With reference to the teeth there is an equal divergence of opinion. A few years ago any tooth was condemned at once if a roentgenogram disclosed bone absorption around the apex; but careful scientific work, such as that recently reported in a dental journal,[3] has taught us that these areas are frequently sterile and remain so, and play no part in metastatic disease. I recall vividly two cases in the past bearing on this point. In one, the patient was an extremely good looking middle aged woman suffering from infectious arthritis of the knee, who had been advised by her physician and her dentist to have extracted a second molar and an upper central incisor. She did not mind losing the molar, but objected strongly to parting with the incisor, and consultation was sought. As a compromise, only the molar was extracted; the patient saved her front tooth, and there was recovery from the arthritis and no return of it in the six years that have elapsed. The other case was that of a young girl, a psychasthenic who had had all of her teeth extracted on account of a mild arthritis; following this extraction, and undoubtedly caused by it, there had developed the mental attitude that made life almost unbearable.

These two cases are cited to show that even extractions of eeth are not always minor events.

The difficulty of determining activity of disease elsewhere han in the area cited is, on the whole, more difficult than when tissues can be seen. Brown,[4] in discussing the aftereffects of operations on the upper abdomen, has shown that diagnostic operations, unlike quinin, are not harmless.

THE INDIVIDUAL AND THE GROUP

All that I have so far said with reference to "focal infection" would apparently apply with equal force to the conultant of the Osler type as to the head of a diagnosis clinic, ave in two important factors. The first factor of importance have already referred to in contrasting the choice of speialists afforded in one case in getting advice, as compared ith its lack in the other. An even more important factor the feeling of individual responsibility that cannot be resent to the same degree when the "buck can be passed" o readily as in the diagnostic clinic.

Professions and occupations differ widely in their technic, ut have many points of contact where organization is conerned, and in that broad twilight zone having to do with uman nature.

Business has learned, as indicated by such terms as "soulss corporation," that superorganization has its penalties, nd the trend today in political development is to individualize sponsibility, as leading to efficiency.

A claim made frequently for the diagnostic clinic is that, rough the thoroughness of numerous examinations, diagses are arrived at that would be missed by the trained agnostician. This is true in a very small percentage of ses, this percentage depending entirely on the ability and utine of the consultant, as compared with that of the diagnostic head of the group. If all diagnostic tests caused no discomfort, pain or danger it would undoubtedly increase the percentage of early diagnoses to use all tests on every patient; but I doubt whether any clinic or group has adopted, for example, routine cystoscopic examination which would from time to time disclose a bladder tumor when no signs or symptoms had arisen to direct attention to its possibility.

A danger today of clinic or group medicine is the doing of unnecessary things at the patient's expense in time, pain, danger or cash expenditure. Sir James Mackenzie[5] has called attention to this, saying:

> Suppose a physician directs these researches: the very fact that he has to call in the help of others implies that he is not able to detect the phenomena produced by disease; and if he is not capable of doing this, how can he be qualified to assess their value?

The discussion so far has dealt more with what interests the physician—diagnosis—as contrasted with what interests the patient—therapy; and there is evidence that group medicine today is leaning to that fallacy of all medical cults, the treating of disease rather than the patient. Any one who has had experience with good hospitals and sanatoriums, both large ones and small ones, knows that the therapy is better in the small one through individualism, necessarily lacking to the same degree in a large hospital, which must have organization to exist.

CONCLUSION

I cannot help recalling a remark I laughed at some years ago, when a very shrewd countryman surprised me by saying that he preferred an elder physician to a younger and better trained man, and gave as his reason that "he knew his constitution." If he had only said "psychologic reaction" I would not have laughed.

4 East Preston Street.

Book Notices

Manual of Obstetrics. By John Osborn Polak, M.Sc., M.D., F.A.C.S., Professor of Obstetrics and Gynecology in the Long Island College Hospital. Second edition, containing a special section on Endocrinology. Cloth. Price, $6. Pp. 488, with 122 illustrations. New York: Physicians and Surgeons Book Company, 1922.

This book suffers mostly from inadequate editing and proofreading. For instance, in the competent execution of these offices the proofreader would have corrected the disparity in spelling between Haas' rule on page 55 and Haase's rule on page 105, while the editor would have eliminated at least one appearance of this unimportant item. The proofreader would have put only one t in vitelline, and the editor would have reconciled the statement on page 180 that, among primiparas, 34 per cent. are lacerated in labor, with the figures six pages later of from 10 to 40 per cent. The editor, again, would have made the measurements of the fetal head as given in the text correspond with those printed on the accompanying illustration, and he would have omitted one of the two pictures of the fetal circulation, though both are good. We do not approve of the use of 2 per cent. solutions of silver nitrate in the eyes of the new-born when a 1 per cent. solution is adequate. However, if the stronger solution is employed, it should be neutralized by physiologic sodium chlorid solution, as advised on page 221; but the editor should have seen to it that the same routine was prescribed on page 235, lest the observance of only the second admonition might lead to the injury of some eye. Differences of opinion are wholesome, of course; but in a work written professedly to hand down accepted doctrine to students and practitioners it would be fairer to admit that the causes of labor are unknown than to attribute etiologic importance to merely associated phenomena like the menstrual epoch, increased fetal movements, and a loose attachment of the egg. It would be more conservative and more in harmony with authority also to give the length of the mature fetus as from 48 to 53 cm. rather than from 45 to 50 cm. We regret to note also that in the treatment of mastitis the author still advises the use of the archaic binder. In his description of episiotomy, both the student and the practitioner would be grateful to have the reasons and advantages of this excellent operation as fully set forth as the technic of its performance. It seems, too, that the prognosis in hemophilia of 80 per cent. mortality is unduly high when probably 90 per cent. recover under treatment by transfusion, which is not mentioned. Probably the most serious objection to the work is the habitual use of illustrations in which neither the hands of the operator are gloved nor the vulva is shaved. The author gives an elaborate and satisfactory preparation for aseptic interference, while the accompanying pictures would indicate that the routine is not carried out. As a whole, the book represents the standards of work that are recognized in all the better clinics. The operative technic is good, the chapter on ectopic gestation excellent, and the introduction of endocrinology a novel and valuable feature. Probably in the next edition the author can secure a better balance of his material, as well as more coherence and unity.

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[3] Rickert, U. G.: Report of Research Committee, Financed by the chigan State Dental Society, J. Nat. Dental A. **9**: 300, 1922.

[4] Brown, T. R.: Late Results of Supposedly Successful Abdominal erations on the Digestive Tract, J. A. M. A. **73**: 1501-1504 (Nov. 1919.

[5] Mackenzie, James: The Future of Medicine.

The Clinical Study of the Early Symptoms and Treatment of Circulatory Disease in General Practice. By R. M. Wilson, M.B., Ch.B. With a foreword by Sir James Mackenzie, M.D., F.R.S., F.R.C.P. Cloth. Price, $4.75. Pp. 245, with 111 illustrations. New York: Oxford University Press, 1921.

Sir James Mackenzie has many times, and with good reason, urged the importance of a restudy of symptoms. Largely through his influence Wilson has begun an investigation whose results are embodied in this volume, which is in the nature of a preliminary report. The effort has been not so much to seek for new symptoms of circulatory disease as to reconsider the nature and significance of symptoms with which we have long been familiar, such as exhaustion, pulse rate, breathlessness and pain. The book is well worth reading. One may, perhaps, question the justness of some of the conclusions of the author, but one is nevertheless impressed by the many facts that are presented in a new light, and is stimulated to a keener and more intelligent interest in the common, everyday symptoms of disease. It is to be hoped that reports of the progress of these investigations may from time to time appear.

Nutrition and Growth in Children. By William R. P. Emerson, A.B., M.D., Professor of Pediatrics, Tufts College Medical School. Cloth. Price, $2.50. Pp. 342, with 38 illustrations. New York: D. Appleton & Co., 1922.

Dr. Emerson's methods for improving nutrition and growth of children have received considerable attention in medical literature during recent years. In the present book, prepared for the public as well as for the medical profession, he describes his method in detail, including directions for general care, as well as complete outlines on diet and food habits. The book is extensively illustrated, and contains numerous tables, diagrams and charts which constitute a part of the system. It will be found especially valuable by all interested in public school and other educational work in nutrition.

A Half Century of Public Health. Jubilee Historical Volume of the American Public Health Association in Commemoration of the Fiftieth Anniversary Celebration of Its Foundation. Edited by Mazyck P. Ravenel, M.D. Paper. Price, $3.75. Pp. 461. New York: American Public Health Association, 1921.

This book contains nineteen articles of an historical nature by members of the American Public Health Association. It is dedicated to Dr. Stephen Smith, founder and first president, who contributes an interesting article on the history of public health during the period 1871 to 1921. The articles by Ravenel and Bryce also contain much of interesting personal history in connection with the public health movement in this country and in Canada. The history of bacteriology, mortality, quarantine, governmental control of disease, water purification, sewage removal, stream of pollution and its control, food conservation and control, child welfare work, housing, including ventilation, industrial hygiene, entomology and public health nursing, with special reference to the last fifty years, is presented by recognized experts in the respective fields. The American Public Health Association is congratulated on having secured such a valuable and comprehensive historical review of public health activities to mark its fiftieth anniversary.

The Secret Places of the Heart. By H. G. Wells. Cloth. Price, $1.75. Pp. 287. New York: The Macmillan Company, 1922.

The most recent novel of the prolific H. G. Wells concerns principally the illness of a British fuel commissioner, and the advice tendered him by his physician and psychanalyst. The chief value of the book, however, lies not in its medical considerations, but in the picture drawn by the author of a motor tour through rural England, during which the principal characters discuss the application of psychanalysis to mental illness fervidly and profusely. American psychanalysts who follow closely the technic of Freud and his disciples will insist that the methods followed by Mr. Wells' physician were so far from correct that his case report has no scientific value. On the other hand, the experience was enlightening and instructive, especially as subsequent events in the novel confirm the diagnosis. As a novel, this book is not up to the standard of the author's best productions; but as a story with a purpose, it will be found to show all the craftsmanship of which so great a writer as Mr. Wells is capable.

Diseases of the Eye. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D., Professor of Ophthalmology in the University of Pennsylvania. Ninth edition. Cloth. Price, $10, net. Pp. 832, with 422 illustrations. Philadelphia: W. B. Saunders Company, 1921.

In this new edition, Dr. de Schweinitz has brought his book up to date, revising all of the various sections to accord with important ophthalmologic observations appearing in periodical literature. In his preface he records more than a score of new topics to which reference is now made for the first time, including, for example, new tests for color blindness, new operations, and several newly described forms of ophthalmic infection. An elaborate index of almost sixty pages makes reference to any special subject a very easy matter. Dr. de Schweinitz' book is the most complete single volume reference work on ophthalmology available in English, and is generally considered to be authoritative.

An Index of Treatment. By various writers. Edited by Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, and James Sherren, C.B.E., F.R.C.S., Surgeon to the London Hospital. Revised to Conform with American Usage by Warren Coleman, M.D., Assistant Professor of Medicine, University and Bellevue Hospital Medical College. Eighth edition. Cloth. Price, $12. Pp. 1029, with 88 illustrations. New York: William Wood & Co., 1921.

This encyclopedic work is prepared in England, and the American edition is edited so as to make the various prescriptions conform to the standards of the United States Pharmacopeia. It therefore represents an outline of therapeutics as conducted in Great Britain, which does not accord in every instance with American methods of practice. Virtually every disease known is referred to, and some form of treatment is suggested for each. A supplement provides references to the preparations described which are utilized only in the British methods of practice.

A Text-Book of Physiology for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Sc.D., Professor of Physiology in the Johns Hopkins University. Eighth edition. Cloth. Price, $6.50. Pp. 1053, with 308 illustrations. Philadelphia: W. B. Saunders Company, 1922.

In the three years which have elapsed since the publication of the last edition of Dr. Howell's well-known textbook on physiology, there have been no epoch-making advances. However, the points of view on many physiologic subjects have changed, and in particular the application of the knowledge of physiology to clinical medicine has been greatly broadened. Dr. Howell has revised his book to accord with these changes, and has brought it up to date.

Medicolegal

Powers of Public Health Boards and Officers

(Rock v. Carney et al. (Mich.), 185 N. W. R. 798)

The Supreme Court of Michigan holds that there is power to protect the public health; it is vested by law in public health boards to be exercised through reasonable rules and regulations duly promulgated. Whether such rules and regulations are lawful and reasonable, considering the true end in view and personal rights guaranteed citizens by the constitution, constitutes judicial questions beyond the power of the legislature to foreclose. Arbitrary power, beyond the reach of redress open to an injured citizen, is not vested in boards of health or anywhere else under our system of government.

While courts may well be loath to review health regulations, promulgated by an executive board under legislative delegated authority, yet in a proper case the duty exists, and no board by executive action can close the court and succeed in having its officers remain immune from judicial inquiry when a claimed unlawful exercise of authority has been visited on a citizen and redress is asked. Courts may be controlled by the determination of an executive board skilled as to what constitutes a dangerous communicable disease, and may not attempt to review such classification; but the method adopted or exercised to prevent the spread thereof must bear some true relation to the real danger, and be reasonable, having in mind the end to be attained, and must not transgress the security of the person beyond public necessity.

The board of health has no legislative power; it may under delegated power enact rules and regulations for the protection and preservation of the public health, but must steer clear of combining legislative with executive power; in other words, such a board cannot give itself power and then execute the power.

The law has not yet conferred on boards of health the old time custom of the Samnites of examining the conduct of the young people or of holding general inquisition for the discovery of venereal disease. Act No. 272, Public Acts of 1919, which expressly relates to venereal diseases, was enacted subsequently to the acts complained of in this case, in which the plaintiff sought to recover damages for the alleged unlawful acts in 1918 of the health officer of a city in which a number of soldiers were stationed, he also having been appointed an inspector by the state board of health. When the plaintiff, then 18 years of age, was brought to him by a deputy sheriff, he made an examination, stated that she had gonorrhea, and that she would have to go to a hospital where girls and women were detained and treated for venereal diseases. He, the plaintiff alleged, would not consent to her remaining at home and placarding the house. The court recognizes the need of full power to stay the spread of epidemic diseases, and finds such power in the statutes; but it cannot find there that, by the mere determination that a disease is dangerous and communicable, there follows power at the will of the health officer to refuse isolation in the home by quarantine and placard notice thereof and to commit the diseased person to a hospital. The question arose whether the exercise of the power by the defendant officer in refusing this girl right of quarantine in her own home was an unreasonable act and not warranted by menace to the public health, and whether her confinement in the detention hospital was an unlawful restraint of her person. This presented an issue of fact for the jury, and the trial judge was in error in directing a verdict for the defendant.

The restraint over the person of the plaintiff being made to appear, the burden was on the defendant to justify the same under the authority of some law. It would be an intolerable interference by way of officious meddling for health officers to assert and then assume the power of making physical examination of girls at will for venereal disease. The law of 1919 points out methods for bringing venereal cases to the attention of health officers, but does not sanction what the plaintiff claimed was done in this case; and surely the power of the defendant was not more without law on the subject than it is now with law. If the health officer had power at all to examine the plaintiff, he had no right to exercise it without reasonable cause; such cause to precede examination and in no way to depend on the result of examination. In any event, the defendant had no right to suspect and examine the plaintiff so long as she had no accuser. Wherefore the judgment which was rendered in favor of the defendant is reversed, the costs to abide the final result.

Reputation Not Deemed at Stake—Evidence and Questions in Sponge Case

(Cochran et ux. v. Gritman (Idaho), 203 Pac. R. 289)

The Supreme Court of Idaho, in affirming a judgment for $6,000 damages for injuries from the alleged negligent leaving of a gauze sponge in the abdominal cavity when an appendectomy was performed, says it was not only strenuously insisted that a new trial should be granted for certain alleged errors, but the consideration was urged that above and beyond the pecuniary amount awarded by the jury the professional reputation and good name of the defendant as a physician and surgeon, which it had taken him a lifetime to build up, was at stake. The court, however, does not entertain the view that this result usually follows a verdict of this kind, or that it should do so. In view of the great number of operations performed by surgeons, and the highly technical character of the work, it is greatly to the credit of the profession that comparatively few mistakes are made. The degree of perfection and avoidance of error that a finite being may reach is limited, and there is always a possibility of failure to exercise such care and diligence as is necessary to avoid disastrous results in highly technical work of this character. The law requires only that degree of care which is ordinarily and commonly recognized as reasonable under the particular facts and circumstances of a given case. Society is greatly indebted to modern surgery, and to the skilled and eminent men who devote their lives to alleviating pain and saving life. However, when unsatisfactory results follow an operation of this character, and it is claimed that they were the direct result of failure to exercise such reasonable care as is ordinarily used by surgeons under similar conditions, and there is competent proof offered in support of such claim, the question of whether such care was used as the law requires becomes a question of fact, to be determined by the jury under proper instructions.

The defendant contended that since this wound was septic, and yet healed, when all of the testimony of the experts was to the effect that it could not heal if a foreign body had been left in contact with it, it must conclusively be presumed that no such body was allowed to remain there. A case was cited in which it was held that, when the physical conditions are such as to preclude all reasonable probability that the testimony of a witness is true, it being contrary to well-known physical laws, the jury should be instructed to disregard such testimony. But this court thinks that principle had no application to the facts and circumstances of the case at bar, for the reason that the science of medicine and surgery has not reached such a state of perfection that it can be claimed that, since a given cause will produce a certain result, if such result does not follow it must be presumed that the cause does not exist. Moreover, there was substantial evidence in this case that the wound never did heal.

A prospective juror was asked whether he was a stockholder in any insurance company that insured physicians and surgeons. The trial judge sustained an objection, and instructed counsel for the plaintiff that he was not to mention that at all, and that if there was any insurance company in this case the jury was to know nothing about it; that it was error to suggest such a thing. But the supreme court intimates that this ruling was more favorable to the defendant than the law required, for it would not necessarily be reversible error to inquire of a prospective juror, in a case of this kind, whether he was a stockholder in an insurance company which insures physicians and surgeons.

It was not misconduct for counsel to read from medical authorities the questions he had asked the expert witnesses, when the matter read in each instance was the same matter, with the slight variation necessary to put it in the form of a question, which he asked of the expert witnesses; and when such expert witnesses had stated that the book was a standard authority; so that all of the objectionable matter read was merely a statement in argument of questions propounded to the expert witnesses. It was urged that a hypothetical question asked a surgeon called for his expert opinion with reference to the ultimate question for the jury to decide; but it may be put to the witness hypothetically whether, if certain facts testified to or shown to be within his own personal knowledge are true, he can form an opinion, and what that opinion is. That still leaves the ultimate fact for the jury's decision, giving due weight to the opinion.

Revocation of License for "Practice" of Criminal Abortion on Single Occasion

(Blumberg v. State Board of Medical Examiners (N. J.), 115 Atl. R. 439)

The Supreme Court of New Jersey says that in November, 1920, a complaint was made to the state board of medical examiners that in October, 1916, Blumberg, a licensed physician, "practiced a criminal abortion," the complaint praying that his license be revoked. A hearing, on due notice, such as the statute required, was accorded the accused, and in February, 1921, the board adjudged him "guilty of the practice of criminal abortion" in the case in question, and revoked his license. Thereupon, he sued on a writ of certiorari to have the proceedings and order of revocation reviewed by the court. In affirming the proceedings and order, the court is of the opinion that the action of the state board was right.

The statute provides, among other things, that the board may revoke a license for the "practice of criminal abortion." It was apparently not disputed that the evidence before the board showed that the accused physician performed a criminal abortion as alleged; but the sole contention was that the mere fact of having performed, on a single occasion, an act of criminal abortion did not justify the taking away of his license. He relied on the line of cases holding that to "practice" a calling does not mean to exercise it on an isolated occasion, but to exercise it frequently, customarily, or habitually. But those cases were not in point. The court was not here concerned with the practice of a calling, but rather with the "practice of criminal abortion," for which a physician's license might be revoked, and that did not mean, necessarily, continued or habitual practice of criminal abortion. The object of such a restrictive statute is the protection of the public, and as a member of the public is endangered by one act of criminal abortion, so a single act may be practicing.

Among other definitions of "practice" to be found in Webster's International Dictionary is: "To perform, to do." The court thinks that the term "practice," as used in the statute, means to perform or to do the thing specified in the statute, namely, criminal abortion. It followed that the proof before the board that the accused performed, on a single occasion, an act of criminal abortion, justified the revocation of his license. That such was the intention of the legislature is quite evident. The statute further provides that the license may be revoked for "conviction of crime involving moral turpitude." It must be and was conceded that, if the accused had been indicted and convicted for the single offense considered by the board, his license might have been revoked on such conviction, a plain indication that the legislature intended to authorize the board to revoke the license of one who is shown, by the evidence presented to them, to have performed a "single act of criminal abortion."

Incidentally, it seemed to be suggested that the license could not be revoked because, at the time the proceeding was instituted, the "prosecution, trial, or punishment" for the offense involved was barred by the statute of limitations respecting criminal proceedings. But that was not so. The statute authorizing revocation of the license was not intended as a punishment of the physician for the crime involved, but as a protection of the public, and the statute of limitations was no defense to this proceeding.

Society Proceedings

COMING MEETINGS

Colorado Congress of Ophthalmology and Oto-Laryngology, Denver, July 28-29. Drs. M. D. Brown and J. M. Shields, Metropolitan Bldg., Denver, Secretary.

Florida Medical Association, Havana, Cuba, June 30. Dr. Graham E. Henson, Jacksonville, Secretary.

Idaho State Medical Association, Wallace, July 10-11. Dr. E. E. Laubaugh, Overland Bldg., Boise, Secretary.

Maine Medical Association, Portland, June 27-28. Dr. B. L. Bryant, 265 Hammond St., Bangor, Secretary.

Montana, Medical Association of, Great Falls, July 12-13. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Seventh Annual Meeting, held in Washington, D. C., May 2-4, 1922

(Continued from page 1919)

The Simultaneous Variation in Acidity of Gastric Contents in Different Parts of the Stomach

Dr. Franklin W. White, Boston: I made about 500 analyses of gastric contents in fifty cases after an Ewald test breakfast, by rapid (one-half minute) and slow (from fifteen to twenty minutes) fractional methods. The position of the tube tip was located by the fluoroscope. The content of the stomach at the end of an hour is not usually a uniform mixture. The acidity of different fractures taken in rapid succession varies from twenty to thirty points or more in about 40 per cent. of observations. The acidity of single fractions taken at that time does not usually represent the acidity of the contents, as a whole. This simultaneous variation is due not to the variable position of the tube tip in the stomach (fluoroscopic observation) or, as a rule, at that time to variable duodenal regurgitation (tests for trypsin), but to very incomplete mixing of acid secretion with the contents of the stomach. Efforts to overcome this variation by artificial mixing of contents in the stomach and water test meals were partially successful.

DISCUSSION ON PAPERS OF DRS. FITZ AND WHITE

Dr. Julius Friedenwald, Baltimore: In quite a number of observations made with Dr. Gantt we have observed that this variation may be overcome by repeatedly extracting a large quantity of stomach contents by means of a syringe and returning it into the stomach, thereby producing a homogeneous mixture; the gastric contents will have a uniform acidity. I should like to make a plea for the recognition of the stomach tube as an American invention. It is generally believed that two English surgeons, Jukes and Bush, are the inventors of the stomach tube, a belief based on a paper published by Jukes in the London *Repository* of 1822. That the credit of this discovery is due to Dr. Physick, professor of surgery of the University of Pennsylvania, there can be no doubt. Physick published his original paper in October, 1812 (Account of a New Mode of Extracting Poisonous Substances from the Stomach, *Electic Repertory* **3**:111) under the title which is ten years prior to the appearance of Jukes' article.

Dr. Henry A. Christian, Boston: Failure to consider carefully the information obtained in these two ways leads to an unnecessary number of gastro-intestinal roentgen-ray studies. If routine roentgen-ray study of patients with gastric symptoms was to be of the greatest possible utility, it would reveal early unsuspected gastric cancers, but this it has failed to do in a single case in my clinic. The roentgen ray often has been useful in helping to differentiate pernicious anemia from cancer of the stomach, but even here the roentgen-ray result usually has been anticipated from the patient's history. Of course, the roentgen ray is very accurate and of great value in determining the presence of ulcer. However, I feel that it should be emphasized to the general practitioner that, by taking a careful history, making a thorough general examination and using the stomach tube intelligently, he can obtain most of the needed data for a diagnosis without recourse to the roentgen ray, and that it is better to have no roentgen-ray examination than a poor one.

Dr. Joseph Sailer, Philadelphia: Some years ago when attempting to determine the value of Mathieu's method for estimating the total gastric contents, I withdrew as much of the stomach contents as possible into a beaker, and then plunged a 10 c.c. pipet into the beaker, withdrawing 10 c.c. at a time from different parts and estimating the total acidity and the free acid. I found that the contents from different parts of the beaker showed considerable variation. This variation was greater if there was mucous and if the chyme was thick, and least if it was thin and clear. It was not entirely eliminated in thick chymes by vigorous stirring. This convinced me at that time that the method of Mathieu was entirely useless for the purpose of estimating gastric contents. One could not even estimate the amount of chyme in a beaker, the contents of which could be tested easily and the results checked. Other methods of estimating the gastric contents were equally futile, and when the method of fractional examination of the gastric contents was introduced, I realized that it could have no real scientific value except in cases of achylia gastrica, where it is still useful. It is just as important to show the fallacies in laboratory tests as it is to invent the tests. Dr. White has demonstrated the comparative uselessness of one of these time-consuming methods.

Dr. Emanuel Libman, New York: As often occurs when one group of men is in favor of one method for diagnosis and a second group in favor of another, both methods can be found of great value if one understands the restrictions attached to each of them. I have encountered a number of cases in which I could not, without the help of the roentgenologist, definitely diagnose the presence of a penetrating ulcer, of an ulcer of the lesser curvature, or of a carcinoma of the stomach. The reason the roentgenologic examinations are often not of as great value as they might be lies in the fact that the work may be done by men not having the proper training. If one obtains the cooperation of a roentgenologist who has studied the physiology of the digestive tract, and who has followed cases to the operating room and to the postmortem table, one can often be very much helped.

Dr. Franklin W. White, Boston: The only suggestion I make for overcoming the simultaneous variation in acidity of different portions of gastric contents in routine fractional gastric analysis is to take out larger fractions than 10 c.c., and to mix the gastric contents in the stomach before aspiration. Neither of these suggestions is entirely free from objections. Another important clinical point: Shall we give up fractional gastric analysis because of the large accidental variation in the acidity of the fractions, amounting at times to 50 or 100 per cent. of the actual figures obtained? I am inclined to say no, but we must surely remember that only gross changes in acidity are important; whether we have much free acid or little free acid or no free acid, mathematical details of the gastric acidity have little clinical value.

Recognition and Treatment of Mild Hyperthyroidism

Dr. Joseph L. Miller, Chicago: Exophthalmos is no longer essential for the diagnosis. Well recognized cases without visible or palpable enlargement of the thyroid are not infrequently observed. Tachycardia, tremor and increased nervousness are now accepted as the most constant clinical manifestations. To these may be added increased basal metabolism. It is still maintained, however, that these symptoms or signs must be present continually, and not transitory in character. The question arises, Are we, by adhering to this criterion, recognizing all cases of hyperthyroidism? In a disease dependent on extensive or abnormal glandular secretion it is highly probable that all gradations of intoxications occur from the very mild to the more severe type. In sixty-one cases of what we believe was mild hyperthyroidism, the symptoms were transitory, especially the tachycardia, tremor and extreme nervousness. At the time of examination these symptoms might not be observed, and hence the importance of a careful history. The basal metabolism was determined in only twenty-six of these cases. In two it was normal, in one + 7, in the remainder above + 10, and in 66 per cent. above + 20. All of these patients were treated by roentgen ray, with 74 per cent. so greatly improved as to consider themselves cured.

DISCUSSION ON PAPERS OF DRS. WILSON AND MILLER

Dr. J. H. Means, Boston: I agree with Dr. Miller regarding the limitations of the metabolism determination in diagnosis. One factor that is often not given its due importance is the effect of emotional disturbance. Sometimes an elevation in metabolic rate is found at a first observation which is interpreted as due to hyperthyroidism, when actually it is not. Dr. Lennox at the Massachusetts General Hospital has found that there is a considerable rise in the rate when a patient is told that an operation is to be done. These transient elevations, which may be confused with true hyperthyroidism, are actually, I believe, suprarenal effects. Repeated tests should be made to exclude this possibility in doubtful cases.

The Tremor Type of the Hepatocerebral Denegerations

Dr. J. Ramsay Hunt, New York: I wish to offer a clinical and pathologic contribution to a group of nervous disorders which includes the pseudosclerosis of Westphal-Strümpell; the progressive lenticular degeneration of Kinnier-Wilson, and the dystonia lenticularis of Oppenheim-Thomalla. This group of diseases is characterized pathologically by a progressive cerebral degeneration of peculiar histologic type, and is associated with nodular cirrhosis of the liver. The corpus striatum would appear to be the seat of election, although other portions of the brain, including the brain stem, cerebellum and the cerebral cortex are frequently affected. The histologic changes are characterized by degeneration of the neural structures and peculiar vesicular swelling of the glia cells (Alzheimer's glia cells). The clinical picture is a varied one, depending on the localization of the lesions. The chief clinical types are choreo-athetosis; dystonia musculorum deformans, and Wilson's disease (muscular rigidity and tremor), all of which are referable to the corpus striatum. A more diffuse form, the pseudosclerosis, has also been described with a more general symptomatology. The latter disorder bears a certain resemblance to multiple sclerosis, and is characterized by paralysis, ataxia, sensory symptoms, tremor and mental disturbances. In addition there is a tremor form of this disease, which is characterized by the progressive development of generalized atactiform tremors without other evidence of organic disease of the central nervous system, and also associated with nodular cirrhosis of the liver. The tremor disturbance is both cerebellar and lenticular in origin. One component is the intention tremor type; the other component is slow, rhythmical, and occurring during rest. This combined form of organic tremor I term striocerebellar tremor. Two cases are reported, one with necropsy and histologic examination.

DISCUSSION

Dr. Llewellys F. Barker, Baltimore: What percentage of cases show the influence of heredity?

Dr. J. Ramsay Hunt, New York: A very large percentage of this group of cases is of the heredofamilial type. According to Hall, who has analyzed very thoroughly the literature on this subject, it is as high as 50 per cent.

A Clinical Study of Migraine

Dr. Charles S. Bond, Richmond, Ind.: This phenomenon is unrelated to eyestrain or toxemia. Previous to the attack, the patient craves and takes more carbohydrates than the stomach can handle, and after some days this material passes from the stomach as fermented product, or there is almost complete gastric retention, as an effort is made to keep acid ferments and carbon dioxid out of the circulation. Preceding the attack, the patient is mentally overstimulated and suffers almost complete digestive stasis. The urine, skin and secretions smell musty. The urine is hyperacid and there is tendency to acidosis. The desire for excess of carbohydrates recalls that of diabetics. While migraine is not hereditary per se, there is no doubt that the mother transmits the vulnerable tissue and the bad table habits, which become fixed, so that it is difficult to correct the bad dietary. These patients must live free of stress and excitement, and on a low carbohydrate diet. A free use of hydragogue cathartics is advised.

DISCUSSION

Dr. L. F. Barker, Baltimore: In these cases, attention should be paid to the general health and environment. Dr. Starr's powder of sulphates, sodium phosphate and salicylate is very helpful. We can reduce the number of attacks and increase the ability of the patient to stand the attacks, but it is very difficult to get patients free from the attacks. It is distinctly a heredofamilial disease. The migraine disposition must lie in the germ plasm. It is time again to take up the study of constitution or predisposition, and not pay all attention to exogenous causes. We can, by starting in early life, do much to ward off outbreaks of the attack and modify the disposition.

Use of a High Fat Diet in the Treatment of Diabetes Mellitus

Dr. L. H. Newburgh, Ann Arbor, Mich.: A diet of 900 calories, derived chiefly from fat, produces the same fall in basal metabolism as does starvation. It has advantages over starvation in that it is more successful in desugarization and is a far less dangerous method. A low protein, low carbohydrate, high fat maintenance diet, fed a large group of diabetic patients since March 1, 1918, maintained an aglycosuric state, was not attended by acidosis, maintained nitrogen balance, did not cause a hyperlipoidemia and was attended by its disappearance in those patients in whom it was present at entrance; supplied sufficient energy to avoid the evils of undernutrition; permitted an amount of activity compatible with earning a livelihood, and, within the limits of our observation, was not attended by downward progress in uncomplicated cases.

DISCUSSION

Dr. E. P. Joslin, Boston: One case which shows the advantage of treatment with the Newburgh diet was that of a boy whose diabetes began five years ago at the age of 10 and who has since been under my care. During this period he has faithfully followed diet, but gained only 13 pounds and increased 2 or 3 inches in height. Recently, during seven weeks' stay at the hospital he failed to become sugar free, but when discharged on a diet based on the principles of the Newburgh-Marsh regimen with a few minor modifications, such as frequent meals, he not only became sugar free, but returned to the hospital at the end of two weeks with a normal blood sugar. Before resorting to a very low carbohydrate low protein and high fat diet as a routine method of treatment, one must be sure that the results with such a diet are as satisfactory as those with the older methods which have been adopted for the milder type of diabetic. Until the Ann Arbor statistics show that a considerable number of diabetics treated with low carbohydrate, low protein and high fat run a more favorable course than those treated with a higher quantity of carbohydrate, a gram of protein per kilogram of body weight, and a moderate number of calories, it would seem hardly justifiable to change the present plan of treatment.

Dr. R. T. Woodyatt, Chicago: A year ago I described a method of dealing with diabetic diets. Since then we have handled 425 cases in accordance with the principles described. Of these, 125 were managed in the hospital. Of these patients, only thirteen have died. The preponderance of the cases we handle are severe, and the patients range from early childhood to old age. Complete fasting or near fasting has not been used in a single case. All have been placed on diet from the beginning. In the most severe cases the patients have been given fat up to 2 gm. per kilogram of body weight, even when there were severe acidosis with symptoms of acid poisoning and depleted alkali reserves. I have seen no case in which I thought this quantity of fat did harm or delayed desugarization. In one uncomplicated severe case the patient went into coma while on a diet intended to desugarize. The fat in that case was above 2 gm. per kilogram. This is the only accident we have had with fat replacement diets, and we have never since exceeded the 2 gm. per kilogram of body weight rule during initial treatment of cases with acidosis.

Dr. F. M. Allen, Morristown, N. J.: I do not see how a patient starved for nine days can be made sugar free on a high fat diet. Were any of these patients children?

Dr. L. H. Newburgh, Ann Arbor, Mich.: It is not intended to advocate exactly this type of diet for all diabetics. Our intention was to do an experiment with certain rigid diets which we have used invariably with every patient from the beginning of the experiment. For patients with mild diabetes, larger amounts of protein and carbohydrate would not make any difference. However, if one is to make an experiment, one should adhere to the plan from the beginning to the end. For that reason we have used these four diets and have used them thoroughout the experiment without variation in principle. Dr. Allen says that a patient who has been starved for nine days cannot be made sugar free on a high fat diet. We have a thorough record of this case. There seems to be no reasonable question about the fact that she was starved in this way, and I think there should be no question as to the results of 900 calories derived chiefly from fat that she received under our care. She is one example of a group of patients whom we have had. The starved individual lives largely on his fat if he is well nourished when starvation is begun. If he is lean, he is thrown back on his body protein for energy, and the result is an increased protein metabolism with an increased liberation of glucose to the circulation to the extent of 58 per cent. of the metabolized protein. It seems to me that that is an adequate explanation of the fact that diabetics of the severe type who are all undernourished and are thrown back on their protein for calories often do not become sugar-free when starved. Once they are given fat they are supplied with energy in a form from which little or no sugar is derived. Of these 116 patients treated in the same period as Dr. Joslin's group we have had two under 10, seven under 20, seventeen under 30, and fifteen under 40, so that we have had a fair proportion of the juvenile type of diabetes. Not included in this tabulation are a number of children from 3 to 6 year of age who were treated by Dr. Cowie on the same plan with the same results. Hence, we have had children and young individuals in large numbers.

The Fate of Arsenic After Its Intravenous and Intrathecal Injection

Drs. R. D. Rudolf and F. M. R. Bulmer, Toronto: By the use of very delicate technic, based on the Gutzeit method, we noted that the percentage of arsenic in the blood, estimated one hour after intravenous administration, rises in proportion to the dose given, and the same relation holds good in regard to the liver; but we have been unable to demonstrate any arsenic in the spinal cord even on increasing the intravenous dose nine times (to an amount sufficient to produce profound degenerative changes in the liver). The Swift-Ellis method was tried in many animals, and still the cord remained free from arsenic. If arsenic is injected intrathecally in massive doses under pressure, it undoubtedly enters the spinal cord and will produce there nerve destruction with ascending paralysis and later death; but when small amounts are used (such as have been employed therapeutically), no such entry can be demonstrated.

The Value of Vital Capacity Determinations in the Diagnosis and Treatment of Heart Disease

Dr. Joseph H. Pratt, Boston: The vital capacity determination is of aid in the diagnosis of organic heart disease. In 100 persons with normal hearts, the mean vital capacity was between 3,500 and 4,000, while in 100 cases of heart disease it was between 1,500 and 2,000. With increase of cardiac weakness, the vital capacity falls rapidly. A drop in the vital capacity may precede other symptoms and signs of cardiac insufficiency and serve as a valuable warning. A chart of the vital capacity reading over the period of treatment often gives the best and most convincing record of the progress of a case. In a case of acute rheumatic myocarditis the vital capacity fell to 1,000 and slowly rose to 3,500 during five months of strict rest treatment. Graduated exercise was rarely followed by a rise in vital capacity. In cases of regular heart action, increased by two weeks' rest in bed, digitalis produced no further increase.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Surgery, Chicago

May, 1922, **4**, No. 3

*Review and Classification of Bone Sarcomas. J. Ewing, New York.—p. 485.

Generalized Type of Osteitis Fibrosa Cystica. J. J. Morton, New Haven, Conn.—p. 534.

*Acute Hematogenous Osteomyelitis. C. L. Starr, Toronto, Can.—p. 567.

Open Pneumothorax in Its Relation to Extirpation of Tumors of Bony Chest Wall. C. A. Hedblom, Rochester, Minn.—p. 588.

*Fracture-Dislocation of Spine. R. A. Hibbs, New York.—p. 598.

*Carcinoma of Lung. M. Barron, Minneapolis.—p. 624.

*Comparative Results of Ligation of Hepatic Artery in Animals. M. Behrend, H. E. Radasch, Philadelphia, and A. G. Kershner, Norristown, Pa.—p. 661.

*Inguinal Hernia: Study of Principles Involved in Surgical Treatment. P. W. Harrison, Bahrein, Persia.—p. 680.

*Unusual Case of Intestinal Obstruction. A. M. Willis, Richmond, Va. —p. 690.

Seventeenth Report of Progress in Orthopedic Surgery. R. B. Osgood, R. Soutter, H. C. Low, M. S. Danforth, L. T. Brown and P. D. Wilson, Boston.—p. 693.

Bone Sarcoma.—The forms of neoplastic diseases originating in bone and bone marrow are classified by Ewing as follows: Osteoma: spongy, ivory. Chondroma: pure chondroma, chondromyxoma. Myxoma: capsular, periosteal, central. Angioma: cavernous. Endothelioma: angio-endothelioma, diffuse: solitary, multiple. Benign central giant cell tumor and its variants: bone cyst, giant cell tumor, xanthosarcoma, myxosarcoma (benign). Osteogenic sarcoma: Periosteal (extraperiosteal), solid medullary and subperiosteal, telangiectatic, sclerosing. Myeloma: plasma cell, lymphocytic, myelocytic, erythroblastic. The existence of telangiectatic osteogenic sarcoma as a distinct disease has not yet gained general acceptance; however, Ewing is convinced that this lesion is one of the most specific of bone tumors, both in its gross anatomy and in its clinical course. One type of malignant bone aneurysm is a vascular osteogenic sarcoma. Its possible relation to cavernous angioma must be considered. In spite of recent contributions to the contrary Ewing believes that the existence of four specific types of myeloma is firmly established. The knowledge of endothelioma of bone has reached a stage which calls for definite recognition of this disease. The condition is generally submerged under the general diagnosis of round cell sarcoma or myeloma, since both are composed of small diffusely growing cells with round nuclei. Ten cases have come to Ewing's notice within the past year. These various varieties of malignant bone tumors are discussed in detail both as to their pathology and their treatment.

Acute Hematogenous Osteomyelitis.—The diagnosis being made early, Starr says, treatment should consist of incision over the area of greatest tenderness, through the skin, subcutaneous tissue and periosteum to the bone. Care should be exercised to keep the incision clearly on the diaphyseal side of the epiphysis to preserve the periosteal attachment to the epiphyseal line. This safeguards to a large extent the possibility of extension to the joint. If frank pus is encountered, this incision is sufficient, if a drain is kept in for a time. If no gross pus is encountered, the periosteum is stripped for a short distance on either side of the incision, to be sure that the incision is not in the wrong place. If still no frank pus is seen, a series of possibly three drill holes is made from the cortex, obliquely downward toward the epiphyseal line. These are about one-fourth of an inch apart up the cortex, and extend at least into the center of the shaft at the epiphyseal line, as shown in the diagram. The treatment usually advocated of trephining an opening into the medullary canal, 2½ inches or more up the shaft, Starr says, seems to be pernicious. If the periosteum is opened and holes drilled into the shaft at the metaphysis, one can hope to relieve the symptoms and prevent necrosis sufficient to produce sequestration. In the later stages the plan of treatment adopted by Starr is this: After efficient drainage has been established, operation is delayed until the sequestrum is separated. Then a channel sufficiently large to remove the sequestrum is chiseled through the involucrum; the cavity is gently curetted until it is free of dirty granulations; the cavity is sponged with iodin, and packed tightly for forty-eight hours with iodoform gauze, after which all packing and drains are removed. If the cavity left is too large to fill easily by granulation, the edges are made saucer-shaped, or flattened, to permit the soft tissues and periosteum to fall in and obliterate it. The practice of attempting to chisel away necrotic bone before it has delimited itself is condemned, as it is impossible to determine where the necrotic bone ends and where the living bone begins. Living bone is thus either taken away or necrotic bone left. The blind curetting of a bone where there may or may not be a sequestrum is not a procedure which is likely to produce any beneficial results. Sequestrotomy should be performed in a bloodless field, using a tourniquet wherever it can be safely used. Ill-considered and incomplete operations in the latter stage are largely responsible for the fact that in so many of these bone cases discharging sinuses continue for years, and the patients are subjected to operations without number.

Fracture-Dislocation of Spine.—Of the twenty-two cases of fracture-dislocation of the spine reported by Hibbs one was in the cervical region, two were in the dorsal region, two in the dorsolumbar region, and seventeen in the lumbar region. Of the last named, eleven were of the fifth lumbar vertebra. There was a definite history of severe traumatism in the cervical case, in the two dorsal cases, in the two dorsolumbar cases, and in twelve of the lumbar cases. In five of the last, the injury had occurred in childhood. The symptoms in three cases, except those of short duration occurring immediately after the injury, did not appear until adult life when ossification of the vertebrae was complete. In one case there was a history of slight injury, and in four cases no history of injury. Four patients with displacement of the fifth lumbar vertebra had imperfect first sacral arches. In each the fusion was made to include at least one healthy vertebra above and one below the injured vertebra. The patient was kept in bed for eight weeks and required to wear a support for from two to four months longer. The support in each instance was of the Taylor spine brace model, except in the lumbar cases, when it was shortened above to extend only to the tip of the scapula, and lengthened below to grasp the pelvis. The result in virtually all cases was complete relief from symptoms with resumption of usual activities.

Carcinoma of Lung.—The study of the thirteen cases reported by Barron shows the importance of assuming a new attitude toward this disease with reference to its prevalence and diagnosability. Two cases encountered during the past year were both recognized clinically; but ten of the remaining eleven of this series were not diagnosed correctly. This fact points strongly to the necessity of greater familiarity with the signs, symptoms and pathology of the disease.

Results of Ligation of Hepatic Artery.—Ligation of the hepatic artery is dangerous at all times. This has been proved in the few cases reported in which a deliberate ligation in man was one of necessity on account of aneurysm or other pathologic conditions. Only one patient recovered. Rabbits and guinea-pigs always succumb to successful peripheral ligation. Dogs and cats resist the ligation and continue to live indefinitely in spite of a combination of a peripheral and central ligation. An important point to be kept in mind is that histologically degeneration of the liver cells has been found in all animals in which ligation was performed.

Operation for Inguinal Hernia.—In the operation used by Harrison for inguinal hernia an effort is made to repair and strengthen the transversalis fascia. Local anesthesia is used (procain and epinephrin), except in small children. Silk is used for suture material. The external oblique fascia is split in the direction of its fibers, up from the external ring as far as seems indicated. The peritoneum is grasped high up, next to the internal oblique muscle, and its isolation is carried to the level of the public bone. At this point, the sac is opened, the intestines are replaced in the abdomen, if necessary, and the neck of the sac is reinjected with anesthetic solution from within, as high up as desired. The neck of the sac is then completely isolated from surrounding structures, and the sac is amputated. No effort is made to dissect the sac out and remove it, except in unusual cases. The dissection of the neck of the sac is then carried very high up. A dissection which does not demonstrate the deep epigastric vessels, Harrison regards as insufficient. The second part of the operation, namely the repair, is begun by dividing the neck of the sac into an upper and a lower leaf, by means of two lateral divisions. The lines of division are carried down on each side, well to the limit of the dissection. The lower leaf is then carried up inside the abdomen for an inch, or more, to the limit of the operative field, pulled fairly taut, and sutured into place. The upper leaf is carried down, overlapping the lower, and sutured to the lowest point that the dissection makes available. The overlap should amount to at least 1 inch, or 1½ inches. Following this, the cremaster is sutured under the internal oblique muscle and the conjoined tendon, thus making the repair snug and efficient. Harrison makes it a rule to test the operative repair at this point by having the patient cough violently and strain. The external oblique muscle is repaired, restoring the external ring, which is left more or less normal in size.

Sacculation of Ileum Causes Intestinal Obstruction.—Willis cites the case of a boy, aged 11, who was suddenly seized with severe, generalized abdominal pain. He soon became nauseated and vomited steadily for two hours. At the end of this time, the pain gradually subsided and soon ceased entirely. There was no recurrence of the pain for four days, when a similar attack occurred. Examination at this time revealed an oblong mass, about 4 inches long, in the right lower quadrant of the abdomen. The pain diminished, but some pain persisted until the following day. A provisional diagnosis was made of partial obstruction from appendiceal abscess, though the possibility of intussusception was borne in mind. Three days later the abdomen was opened. It was seen that the mass was due to a enlargement of the lower portion of the ileum, above the ileocecal junction, the enlargement suggesting strongly the presence of an intussusception of this portion of the bowel. The mass lay entirely in the pelvis. It was about 6 inches long and 3 inches across, somewhat ovoid in shape. The covering resembled the visceral peritoneum, except that it was somewhat paler. It proved to be a sac, formed from a membrane which appeared to cover the whole of the small intestine. Above and below the sacculated portion, this membrane was quite closely approximated to the intestine, somewhat like a loosely fitting glove finger. This sheath could be slipped about an inch in either direction, downward or upward; further movement was then prevented. The sacculated portion was split longitudinally, in the direction of the mesentery, and it was found that within the sac there were 30 inches of small intestine, much coiled and folded, the terminal portion showing multiple diverticula. There were no adhesions between the adjacent coils of intestine; but a few delicate strands of connective tissue ran from the intestine to the inner surface of the sac. It was apparent that the cause of the recurring attacks was a displacement of the mass of intestine contained in the sac. When this mass was fitted down into the pelvis, it caused no symptoms; when it was displaced upward, it caused an angulation of the intestine and the consequent obstruction. The absence of any evidence of an inflammatory process indicates that the condition was the result of some developmental defect.

Boston Medical and Surgical Journal

May 18, 1922, **186**, No. 20

*Leukemia and Severe Anemia in Childhood. J. L. Morse, Boston.—p. 657.

Report of Progress in Orthopedic Surgery. M. N. Smith-Petersen, Boston.—p. 665.

Speech Development in Crippled Children. Report of One Hundred and Two Cases. C. G. Stivers, Los Angles.—p. 669.

Aleppo Boil; Also Called Delphi Boil, Kandahar Sore, Oriental Sore. A. K. Yoosuf, Worcester, Mass.—p. 675.

The National Health Council. D. B. Armstrong and J. A. Tobey, Washington, D. C.—p. 677.

Leukemia and Severe Anemia in Childhood.—Among thirty-seven cases of leukemia and severe anemia in childhood seen by Morse, myelogenous leukemia was encountered but once, in a boy, aged 4 years. He died unexpectedly before the blood was examined. The liver and spleen showed the characteristic changes of myelogenic leukemia. There were twelve cases of undoubted lymphatic leukemia in which the mononuclear cells numbered at least 50,000, in most instances being in hundreds of thousands. The patients were from 2 to 13 years of age. In one instance in which the blood was examined and found normal before the development of scarlet fever in the hospital, leukemia developed during convalescence and ran its course in three weeks. In another instance the onset apparently followed a fall. In the other cases there was no apparent etiology. There were eighteen cases of severe anemia with moderate or low white counts, but with a high percentage of mononuclear cells. All the patients died. The duration of the disease varied between two weeks and six months. In one instance, the onset of the illness was immediately after an attack of measles, in another it followed an operation for the removal of tonsils and adenoids, and in another a fall on the head. In one case it was thought to have developed after an attack of malaria, but no plasmodia could be found in the blood. In another case there was a possible connection with an abscessed tooth, but there was no improvement after the tooth was removed. In the other cases there was no apparent etiology.

Journal of Nervous and Mental Disease, New York

April, 1922, **55**, No. 4

*Delirium Acutum and Primary Sinus Thrombosis. K. H. Bouman and B. Brouwer, Amsterdam, Holland.—p. 273.

Pachymeningitis Cervicalis (Syphilitic) with Unusual Features. M. Keschner, New York.—p. 294.

Delirium Acutum and Primary Sinus Thrombosis.—Two cases are described by Bouman and Brouwer which occurred in persons suffering from manic depressive psychosis. In the postmortem examination a primary sinus thrombosis was found which proved to be of recent date and was not the cause of the delirium acutum. Both affections were the consequence of a general infection of the body. There was extensive degeneration in the nerve cells. The lesion was most severe in the frontal area of the brain and the larger cells showed more inclination to suffer than the smaller cells.

Journal of Radiology, Omaha

May, 1922, **3**, No. 5

*Errors in Roentgenologic Diagnosis of Duodenal Ulcer. R. D. Carman, Rochester, Minn.—p. 163.

Practical Applications of Ionization Measurements of Roentgen Rays. A. W. Erskine, Cedar Rapids, Ia.—p. 169.

*Treatment of Malignant Neoplasms of Tonsils. D. Quick, New York.—p. 173.

Fractures of Carpal Scaphoid. A. M. Pfeffer, Baltimore.—p. 179.

Errors in Roentgenologic Diagnosis of Duodenal Ulcer.—The principal causes of affirmative error in the diagnosis of duodenal ulcer, in the order of their importance, Carman says, are reflex spasm, periduodenal adhesions and gastric lesions near the pylorus. Duodenal spasm from extrinsic causes is most often associated with cholecystitis or chronic appendicitis. Juxtapyloric gastric lesions may implicate the duodenal bulb or alter land marks so that exact diagnosis may be difficult. Tumors of the duodenum, either benign or malignant, and diverticula are rare sources of error. Confusion of the bulbar shadow with that of other parts of the duodenum or with the shadows of adjacent concretions is a technical fault which can usually be avoided. The percentage of negative errors in this series slightly exceeds the percentage of affirmative mistakes. Many of these diagnostic failures are explainable by the absence of bulbar deformity, either organic or spastic. Failure to diagnose a duodenal ulcer associated with a demonstrable gastric ulcer is not a grave oversight. Ulcers situated beyond the bulb can hardly be diagnosed as such, although obstruction may be demonstrable. They constitute a very small percentage of the total. Many negative errors are avoidable. Some of them are due to technical faults, others are solely the result of careless observation and are indefensible. Perfection is admittedly unattainable, but the roentgenologist should not criticize himself too charitably.

Radium Treatment of Malignant Neoplasm of Tonsils.—During the past five years Quick has treated 149 cases of malignant neoplasms of the tonsil with radium. Of 124 cases of carcinoma of the tonsil, twenty-eight are now clinically free from disease. Two other cases were free from clinical evidence of disease for fifteen months, at which time they were lost track of. Twenty cases at present under treatment are progressing favorably and a fair number at least bear promise of a complete clinical regression. Forty-one patients were definitely improved for varying periods of time, but finally either died of the disease or are steadily becoming worse. Twenty-seven patients were absolutely unimproved by treatment and ten more were completely lost track of, so that they must be classified with those totally unimproved. Of the carcinomas, ten were recurrent cases, two of which were with recurrent cervical nodes and an unrecognized primary lesion in the tonsil. Twenty-four cases belonged to the group of lymphosarcomas or malignant granulomas. Of this group six cases are now free from clinical evidence of disease. One shows an excellent palliative result of over three years' duration, but at no time has he been entirely free from clinical evidence of disease. Six of these cases were recurrent. One case of rhinoscleroma of the tonsil has been under treatment for over three years, at times showing an apparent complete regression, only to reappear in some adjacent area of mucosa. Of the twenty-eight cases of carcinoma of the tonsil reported clinically free from disease at present, the average duration since the initial treatment is twenty-six months. The longest period is fifty-six months and the most recent four months. In ten cases, neck operations were performed and in these the average duration is twenty-eight months. The oldest is fifty-six months and the most recent six months. Quick states that best results can only be obtained in these cases by interstitial radiation—either by means of radium emanation or lightly filtered needles containing radium element embedded in the growth. This should be supplemented by heavily filtered external radiation—either roentgen rays or radium. The treatment of cervical metastases of carcinoma of the tonsil is best managed by a combination of radium, roentgen ray and conservative surgery. In lymphosarcoma or the malignant granulomas of the tonsil, surgery plays no part whatever. Metastases to the cervical nodes or elsewhere should be managed entirely by a combination of radium and roentgen rays.

Journal of Urology, Baltimore

May, 1922, 7, No. 5

*New Method of Perineal Prostatectomy Which Insures More Perfect Functional Results. J. T. Geraghty.—p. 339.

Diverticula of Bladder. Report of Cases. A. H. Crosbie, Boston.—p. 353.

*Sphincterotomy Per Urethram. Simple and Safe Procedure for Cure of Contracture of Vesical Orifice. J. T. Geraghty, Baltimore.—p. 367.

*Structural Basis for Congenital Valve Formation in Posterior Urethra. E. M. Watson, Buffalo.—p. 371.

*Bone Metastasis from Primary Carcinoma of Urinary Bladder. H. G. Wells, Chicago.—p. 383.

*Cure of Prostatic Abscess by Aspiration. B. S. Barringer.—p. 397.

Case of Prostatic Infection Complicated by Osteomyelitis. J. Pedersen, New York.—p. 405.

*Physiologic and Pharmacologic Studies of Prostate. IV. Response of Prostatic Muscle to Drugs. D. I. Macht.—p. 407.

New Perineal Prostatectomy.—The operation described by Geraghty differs essentially from the technic described by Young in that the membranous urethra is not exposed or at any time in the field of operation. Its intrinsic and extrinsic musculature, as well as the nerve supply, are neither disturbed nor injured.

Sphincterotomy Per Urethram.—The instrument employed by Geraghty for dividing the sphincter consists of a wedge-shaped concave knife which accurately fits a F 28 endoscopic tube similar to the outer sheath of the Young punch. The anterior and posterior urethra are anesthetized with a 4 per cent. procain solution and the bladder filled with 200 c.c. of water, if possible. The sheath with its obturator is passed, after which the latter is withdrawn. After the removal of the obturator the sheath is withdrawn until fluid ceases to escape which indicates that the fenestrum has engaged the vesical orifice. In rare instances in which the trigone is markedly hypertrophied the ligamentum interuretericum may engage the fenestrum. This may be readily recognized by rotating the instrument 90 degrees when water will begin to escape unless the fenestrum lies at the level of the orifice. The vesical orifice now being engaged in the fenestrum, the knife is introduced and the fibrotic ring divided. In cases in which it is desirable to incise deeply, especially when the fibrosis is unusually thick, a forked spear lifts the fibrous ring into the fenestrum. While the spear mobilizes the tissue to be incised the knife is then passed and a deeper cut obtained.

Origin of Congenital Valve Formation in Posterior Urethra.—Watson states that the so-called valves or congenital strictures of the prostatic urethra may have their origin as early as the fourteen weeks of fetal life, at which time there were present in the specimens studied no associated secondary sequels such as the dilated posterior urethra, dilated trabeculated bladder with hydroureters and hydronephrosis as is usually found in the latter pictures of this condition. The valve formation is due to the growth and attachment of the tip of the colliculus to the roof of the urethra and occurs at the time of marked epithelial activity of this and associated parts, namely, the invagination of the verul mucosa to form the first observed tubules of the verumontanum.

Bone Metastases from Bladder Cancer.—In five cases of carcinoma of the bladder in which Wells performed a necropsy none showed any metastasis. In another case a comparatively small carcinoma of the urinary bladder gave rise to a remarkably large secondary tumor of the sternum, metastases in left axillary lymph glands, left lung, right kidney and liver; also in right first and fourth and left first and fifth ribs and right ilium. The absence of any mention of symptoms referable to the bladder was notable in this case. While he was in the hospital there was frequency of urination. The urine was reported as containing albumen but no casts or cells, although alkaline in reaction. It was recorded that the protein was not of the Bence-Jones type. Examination revealed no physical changes of importance except for a great symmetrical rounded swelling on the anterior chest wall, hard, not pulsating and without murmurs. The lungs and heart showed no noteworthy abnormalities, beyond pulmonary emphysema. There was a bilateral hydrocele. A specimen of blood examined by the Abderhalden method gave a positive reaction with carcinoma substrate. After the patient was in the hospital a few days he became delirious, gradually grew weaker, dyspnea developed and he died. A detailed necropsy report is given by Wells.

Treatment of Prostatic Abscess by Aspiration.—Fifteen patients have been saved general anesthesia, perineal section, damage to the prostatic urethra and long convalescence by aspirating pus from the prostate by the needle method described by Barringer. No untoward results have followed this method, and no patients have had to be operated on subsequent to the aspiration. Experience has indicated that the method should be restricted to gonococcus infections. Abscesses of the prostate caused by streptococcus, staphylococcus or colon bacilli do not do well after aspiration. The method should not be used when the abscess has broken through the capsule of the prostate and is pointing in the ischiorectal fossa or has extended toward the seminal vesicles. Here operation is indicated.

Response of Prostatic Muscle to Drugs.—The effects of various drugs were studied by Macht on strips of surviving excised prostate glands of different animals. The preparations responded promptly with contraction to barium chlorid and with relaxation to papaverin hydrochlorid, thus indicating the presence of muscle tissue. The preparations responded distinctly to treatment with epinephrin and ergotoxin but failed to respond (with the exception of the rabbit's prostate) to treatment with pilocarpin, physostigmin, muscarin and atropin. These observations speak in favor of a true sympathetic innervation of the prostate gland.

Kansas Medical Society Journal, Topeka

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Whooping Cough. R. L. Von Trebra, Chetopa.—p. 133.
Pulmonary Abscess and Its Surgical Treatment. R. B. Stewart, Topeka.—p. 135.
Epidemic Encephalitis: Summary of Present Knowledge. K. A. Menninger, Topeka.—p. 139.
Hexamethlenamin: Its Use and Misuse. A. G. Dumas, Osawatomie.—p. 146.

Minnesota Medicine, St. Paul

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Herpes Cornea. E. Boeckmann, St. Paul.—p. 277.
Progress in Urology. W. F. Braasch, Rochester, Minn.—p. 286.
Treatment of Duodenal and Gastric Ulcers. A. C. Strachauer, Minneapolis.—p. 290.
Common Conditions Simulating Pulmonary Tuberculosis. F. W. Spicer, Duluth.—p. 295.
Maxillary Sinusitis of Dental Origin. K. A. Phelps, Minneapolis.—p. 299.
Heliotherapy. J. H. Bendes, Oak Terrace.—p. 302.
Complications Following Surgery of Gallbladder and Bile Ducts. W. C. Carroll, St. Paul.—p. 307.
Blastomycosis: Clinical Pathology and Therapeusis. B. F. Davis, Duluth.—p. 311.
Pyelitis. A. E. Sohmer, Mankato.—p. 316.

New Orleans Medical and Surgical Journal

May, 1922, **74**, No. 11

Pituitrin in Obstetrics. C. H. Cleveland, Anniston, Ala.—p. 700.
Problems to be Solved by Medical Profession in Co-Operation with Public. J. E. Knighton.—p. 704.
Tropical Diseases. L. Ambrose, New Orleans.—p. 717.

U. S. Naval Medical Bulletin, Washington, D. C.

Hospital Corps Quarterly

April, 1922, **6**, No. 2

Old and New Hospital Corps. C. F. Wood.—p. 1.
Modern General Anesthesia. J. G. Poe, Dallas, Tex.—p. 5.
Possible Simple Method to Determine Presence of Foreign Fat in Butter Fat. J. C. Fagan.—p. 11.
Mushrooms and Toadstools. E. H. Winston.—p. 16.
Good Old Days. S. J. Kinkaid.—p. 18.
Tenth Revision of United States Pharmacopeia. E. F. Cook.—p. 33.
Hospital Corpsman's Field. F. Doty.—p. 43.
Equipment for Base Hospital of 1,000 Beds Capacity. T. J. Murphy.—p. 48.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

April, 1922, No. 261

Radiology and Physics. G. W. C. Kaye.—p. 336.
*Foreign Body in Duodenum. G. Vilvandre.—p. 349.
Two Cases of Idiopathic Dilatation of Colon in Adults. R. M. Beath.—p. 350.
Selection of Gamma Rays or Roentgen Rays for Radiotherapeutic Purposes. W. S. Lazarus-Barlow.—p. 355.

Foreign Body in Duodenum.—A nail swallowed by a mentally unstable woman, aged 57, remained in the second portion of the duodenum for at least three days before its removal; and in spite of its sharp end and inability to enter the third stage of the duodenum, did not perforate the intestine. A large safety pin was also ingested, but being closed and of more rounded contour gradually passed through and caused no trouble.

British Journal of Experimental Pathology, London

April, 1922, **3**, No. 2

*Effect on Arterial Hypertension of Increased Fluid Intake. J. B. Orr and I. Innes.—p. 61.
Details of Technic Adopted in Following Weigl's Plan of Feeding Lice Infected with Virus of Typhus Fever by Rectal Injection. A. W. Bacot.—p. 72.
Poisonous Properties of Colloidal Silica. I: Effects of Parenteral Administration of Large Doses. W. E. Gye and W. J. Purdy.—p. 75.
Poisonous Properties of Colloidal Silica. II: Effects of Repeated Intravenous Injections on Rabbits; Fibrosis of Liver. W. E. Gye and W. J. Purdy.—p. 86.
*Association of Virus of Typhus Fever with Various Blood Elements. J. Segal.—p. 95.
Anoxemia and Increased Electrical Excitability of Neuro-Myone. N. Morris.—p. 101.

Effect of Increased Fluid Intake on Arterial Hypertension.—Orr and Innes report on an investigation on the influence of increased water ingestion on the blood pressure of some apparently normal subjects and also of persons with high arterial tension. The addition of from 2 to 3 liters of water to the normal daily consumption is followed by a distinct fall in both systolic and diastolic pressures. The fall is not accompanied by an increase of either the rate or force of the heart beat, and the decreased pressure is maintained for some time after the extra water has been excreted. Reasons are put forward in support of the suggestion that the chief factor in producing the fall of pressure is the elimination of pressor substances that cause arterial constriction and thereby produce an unnecessarily augmented arterial tension. When diuresis is unable to keep pace with the intake of water, especially in cases of high arterial tension, the fall in pressure is sometimes preceded by a rise beyond the original level, which persists until the bulk of the extra fluid has been eliminated.

Virus of Typhus Carried by Blood Platelets.—According to Segal leukocytes obtained from peritoneal exudates of typhus infected guinea-pigs do not carry the virus. The virus seems to be intimately connected with the platelets. By the separation of these cells from a large quantity of blood a high concentration of virus can be obtained for experimental purposes.

Journal of Laryngology and Otology, Edinburgh

May, 1922, **37**, No. 5

Saccular, Utricular and Allied Reflexes. A. R. Tweedie.—p. 213.
Epithelial Inlay in Radical Mastoid Operations. E. H. White.—p. 223.
Diagnostic Value of Transillumination of Maxillary Antra. E. Watson-Williams.—p. 227.
*Influence of Oral Sepsis on Course of Cancer of Throat. D. M'Kenzie.—p. 230.
Intranasal Dacryocystostomy: Easy Method of Approach. A. Campbell.—p. 232.
Instrument for Measuring "Bridge" in Mastoid Operation. T. B. Jobson.—p. 233.

Influence of Oral Sepsis on Course of Throat Cancer.—It occurred to M'Kenzie that in a small group of cases of untreated throat cancer the progress of the disease is curiously slow. Examination showed that the slow cases were in people who were edentulous, and who had been edentulous before the symptoms of cancer appeared; while, on the other hand, in the ordinary, or what may be called the septic class, teeth were still present in the mouth. It does not seem to matter whether the teeth be few or many. M'Kenzie suggests that when all the teeth have been removed the mouth secretions are much less virulently infective than when the teeth are present, and that the progress of the cancerous growth is rendered slow or rapid in consequence of this very simple circumstance. Another point which favors his suggestion is that many, if not most, patients with throat cancers die not of hemorrhage, nor of asphyxia or starvation, but of septicemia. The cervical glands enlarge rapidly and break down, while the patient succumbs with all the signs of severe septic intoxication.

Journal of State Medicine, London

April, 1922, **30**, No. 4

*Cultural Characteristics and Virulence of Mammalian Tubercle Bacilli and Circumstances Under Which They May Vary. A. S. Griffith.—p. 139.
Rôle of Three Types of Tubercle Bacilli in Human and Animal Tuberculosis. L. Cobbett.—p. 160.

Study of Mammalian Tubercle Bacilli.—Griffith discusses the properties of the standard strains of each type of tubercle bacilli, the experimental variations, and the variants which occur in nature. Griffith considers that the bovine tubercle bacillus is at least as virulent for man as is the human tubercle bacillus. The bovine tubercle bacillus is less frequently than the human tubercle bacillus associated with the severe and fatal forms of human tuberculosis, but this is because the bovine tubercle bacillus invades the body almost exclusively by way of the alimentary tract, whereas the human tubercle bacillus gains access mainly by the channel of the respiratory passages. Hence, cases of primary intrathoracic tuberculosis due to the bovine tubercle bacillus are extremely rare, and there are very few cases of primary abdominal tuberculosis due to the human tubercle bacillus which do not also show evidence of concurrent infection via the respiratory tract. Of the two modes of infection, ingestion is much less certain and sereve in its effects than inhalation. Although the bovine tubercle bacillus has the more difficult channel of entry, nevertheless it is able to produce all the chief varieties of human tuberculosis, including ulcerative pulmonary tuberculosis, and in children is often the cause of severe and rapidly fatal general tuberculosis. When cases of tuberculosis which are usually not fatal, e. g., lupus, bone and joint tuberculosis, are considered, there is not any clinical difference indicating that bovine tubercle bacilli produce a less severe form of disease than human tubercle bacilli.

Lancet, London

May 13, 1922, **1**, No. 5150

Endocrine Insufficiency and Chronic Intestinal Disease. F. J. Sadler.—p. 929.
Modern Methods of Research in Cardiology. I. Harris.—p. 931.
*Adrenalin in Stokes-Adams Syndrome. A. G. Phear and J. Parkinson.—p. 933.
Suction Difficulties of Young Infants. H. C. Cameron.—p. 936.
Studies from Royal Mineral Water Hospital, Bath. J. M. H. Munro.—p. 938.
*Some Uncommon Abdominal Emergencies. H. W. L. Molesworth.—p. 943.
*Case of Congenital Pyloric Stenosis. R. E. Smith.—p. 944.
Case of Renal Dwarfism. D. Paterson.—p. 944.

Epinephrin in Stokes-Adams Syndrome.—In a woman of 49 with complete heart block, who was under observation for seven days and nights, severe Stokes-Adams attacks were recurring almost every minute. The subcutaneous injection of epinephrin was followed by complete cessation of the attacks within fifteen minutes. While it seems probable that only in isolated cases will such a beneficial effect be obtained Phear and Parkinson urge that a trial should be made of a subcutaneous injection of 5 minims (0.3 c.c.) of epinephrin (1:1,000), and if this fails, larger doses of from 10:30 minims should be used.

Abdominal Emergencies; Henoch's Purpura; Perforating Ovarian Dermoid.—Molesworth reports a case of Henoch's purpura in which the abdominal symptoms led to a preoperative diagnosis of perforated appendix. A case of sudden severe abdominal pain with repeated vomiting proved to be a right ovarian dermoid cyst with a perforation one-fourth inch in diameter exuding pus and hair. This was removed and the abdomen dry-mopped and drained. In another case of abdominal pain of an intermittent character with vomiting a rounded oval tumor situated centrally in the abdomen with its long axis vertical slightly movable, led to a preoperative diagnosis of intussusception. Laparotomy showed that the tumor was retroperitoneal presenting through the mesosigmoid. It was an enlarged ectopic left kidney. The specimen was a hydronephrosis due to congenital stricture at the ureteropelvic junction. A man, aged 55, had sudden severe abdominal pain, constipation and vomiting. The abdomen was slightly distended. Just above the right internal abdominal ring was an elusive rounded lump; but while its characters were being sought it slipped away. Diagnosis was intestinal obstruction due to unknown cause. On opening the abdomen the lump was found to be in the small intestine about a foot from the ileocecal valve. It proved to be two thirds of an orange complete with its skin, rolled into an ellipse rather like a shark's egg. Three days later he had another attack of abdominal pain, vomiting, and constipation. Preparations for a second laparotomy were afoot but quite suddenly he announced that he was better. The following morning he passed the remaining third of the orange rolled into a similar though smaller ellipse.

Incarcerated Appendix Causes Pyloric Stenosis.—A case is recorded by Smith to suggest that an incarcerated appendix in a hernial sac may be one of the factors not only of primary causation but also of continuation of congenital pyloric stenosis. A male infant, aged 3 weeks, was admitted to hospital with all the classical signs and symptoms of congenital pyloric stenosis. The stenosis was of the rarer type, being complete at birth and giving rise to immediate vomiting from the first feeding, associated with absolute constipation and very marked emaciation. A bismuth meal confirmed the completeness of the block and Rammstedt's operation was at once resorted to. Fourteen days after operation a normal stool was obtained. On the sixteenth day, the infant again had severe gastric upset, with alarming vomiting, at first uncontrolled even by a very strict dietary and saline for two days. Circumcision was performed, and again progress was resumed. At the age of 6 months the mother observed a swelling in the right inguinal region, not previously noted by the mother or by the surgeon. Not until the child was 2 years of age was an operation performed. The hernial protrusion, although scrotal, was very slight in bulk and was noted to be thickened and irreducible, very suggestive of the association of a hydrocele of the cord with a hernia. At the operation for radical cure the sac was opened and found to contain a large appendix, 3¾ inches long. It contained a small soft fecal mass about 1 inch from the base. There were no definite adhesions, but the appendix was firmly planted in the sac by a short meso-appendix, the layers of which were part and parcel of the posterior wall of the peritoneal protrusion of the sac. The condition at operation suggested that the appendix was in the sac before birth.

Medical Journal of Australia, Sydney

April 1, 1922, **1**, No. 13

*Complement Fixation Test for Hydatid Disease and Its Clinical Value. N. H. Fairley.—p. 341.
Analysis of Thirty-Three Cases of Hydatid Diseases of Lung. K. D. Fairley.—p. 346.
Death of Fetus in Utero, Missed Labor and Delivery by Cesarean Section. A. H. Hughes.—p. 355.

April 8, 1922, **1**, No. 14

Prevention of Tuberculosis. R. C. Merryweather.—p. 379.
Routine of a Syphilis Clinic. W. J. Beveridge.—p. 382.
Case of Xanthoma Diabeticorum. G. R. Hamilton.—p. 385.

April 15, 1922, **1**, No. 15

Some Aspects of Insanity. J. E. F. McDonald.—p. 399.
Preventive Medicine in Mental Diseases. W. A. T. Lind.—p. 403.
Plague Experiences. R. W. Hornabrook.—p. 408.
Diffuse Cranial Osteomyelitis as Sequel to Nasal Accessory Sinus Suppuration. G. A. D. McArthur.—p. 410.

Complement Fixation Test for Hydatid Diseases.—In the last twelve years, thirty-three patients with hydatid disease of the lung have been admitted to the wards of the Melbourne Hospital. In each case, the diagnosis has been confirmed by the surgeon at operation or by the pathologist. This paper comprises the results of an analysis of the case histories of these patients. In 39.4 per cent. of these thirty-three patients there was evidence of multiple infestation. In four of these cases the cyst was situated in the left lung; in two it was at the apex of the right lung. The affected site in the remaining twenty-seven cases was the lower portion of the right lung. In nine patients the cyst was suppurating, while it had ruptured in thirteen patients. In five of these ruptured cysts there was evidence of secondary infection, while in two the cyst had undergone degeneration. In only nine instances was the condition diagnosed before the onset of any complication. The cyst wall also showed retrogressive changes in two other patients. Degeneration was, therefore, present in four (12.1 per cent.). In four of the five patients who dated their symptoms from a previous attack of pneumonia, secondary infection of the cyst was present, while no such unusual incidence of superadded infection was noted in patients with a previous history of pleurisy. A detailed analysis of the clinical history of these cases is made by Fairley. Ten patients were not subjected to operation. Two of these had suppurating cysts and both died. In the other eight the cyst had ruptured and roentgen-ray examination or exploratory needling disclosed nothing grossly abnormal. These all progressed satisfactorily. One partially ruptured degenerated cyst was aspirated with excellent result. The remaining twenty-two patients were operated on and two died. In one the cyst was uncomplicated, while in the other suppuration had occurred. One degenerating cyst was successfully closed without drainage, but another similar case closed without drainage had to be reopened and drained. In the other twenty cases the cysts were all drained, the operation being done in nearly every instance at one sitting.

Archives Franco-Belges de Chirurgie, Brussels

February, 1922, **25**, No. 5

*Aneurysm of Internal Carotid. G. Cannuyt.—p. 399.
*Osteoma Involving Four Facial Sinuses. C. Goris.—p. 411.
*Trauma of Maxillary Sinus. M. Le Jemtel and F. Rousseau.—p. 417.
Fracture of Maxillary Sinus. J. Moreau.—p. 421.
Extradural Hematoma in Child. H. Mondor.—p. 425.
*The Oscillometer in Surgery. G. Jeanneney.—p. 429.
Congenital Coxa Valga. M. van Neck.—p. 469.
Genu Valgum from Osteomyelitis. M. van Neck.—p. 487.

Aneurysm of Internal Carotid.—Cannuyt encountered a number of cases during the war in which a projectile had injured the ninth, tenth, eleventh and twelfth cranial nerves where they are bunched as they leave the skull. Paralysis of these four nerves from injury at this point is rare in peace times, but he reports here two cases of pure and total paralysis, the result of pressure from an aneurysm in the left internal carotid in a woman of 58 and of a branchioma in a man. Colored plates show the conditions and the differential points.

Giant Osteoma.—The tumor filled the left frontal, ethmoidal, sphenoidal and maxillary sinuses, but was successfully removed. It was as hard as marble, and it took two hours to chip it all out, after tracheotomy. The fragments weighed 320 gm. and the man left the hospital apparently entirely cured the sixth day.

Trauma of Maxillary Sinus.—A long sliver of wood was driven through the nose and maxillary sinus, involving the orbit. After removal of the splinter, visual disturbances for several months were finally cured by covering up the sound eye, although diplopia can still be brought on by looking down toward the right.

Surgical Applications of the Oscillometer.—Jeanneney's illustrated description of the Pachon oscillometer is accompanied by the detailed reports of twenty-eight cases in which the surgeon was materially aided in the diagnosis and operation by this cuff and manometer device with a long needle that wavers at the slightest change in pressure. Among the different types of cases is one of gangrene of the leg in which amputation seemed inevitable, but the oscillometer revealed circulation in the vessels in the depths below the superficial gangrene, and conservative treatment was successfully applied.

Archives de Médecine des Enfants, Paris

April, 1922, **25**, No. 4

*Influenza in Children. T. Suzuki.—p. 193. Conc'n No. 5, p. 268.
A Small Epidemic of Diphtheria. J. Camescasse.—p. 215.
*Juvenile Tabes. M. Acuña and J. M. Macera.—p. 224.
*Orchitis in Serum Sickness. F. Carrieu.—p. 230.
Infant Welfare Work in Morocco. J. Comby.—p. 232.

Influenza a Pneumonia.—This study of 1,560 cases in children was made in Manchuria, utilizing the roentgen rays in diagnosis from the first, and supplementing clinical data with experimental research. On this basis, Suzuki asserts that by the second day of the fever the lung shows roentgenoscopic signs of pneumonia although it does not become apparent otherwise until from the third to the tenth day. This hemorrhagic pneumonia is not a complication of the influenza; it is the influenza itself, and the pneumococcus is responsible for it. He always found the pneumococcus from the very first and onward. There were three epidemics of influenza in his region, and the mortality among his child patients was about 9 per cent. Necropsy showed the typical pneumonia even when the clinical picture had been that of meningitis. Rabbits injected with pneumococci isolated from the child cases developed the same hemorrhagic pneumonia by the second day. Forty-six roentgenograms are reproduced.

Juvenile Tabes.—The first symptoms in the boy of 12 with inherited syphilis were swelling and pain in the knees, but this subsided under local treatment. Then followed fracture of the femur and symptoms suggesting tabes during the two years to date. In children, the ataxia and the pains of tabes are not very pronounced, but there may be ocular and bladder disturbances, swelling of joints, and pains in stomach and bladder, besides bone and reflex changes. Under arsphenamin the disease seems to have been arrested in his case; there have been no further visceral crises and the reflexes are livelier, but the cerebrospinal fluid shows no change.

Orchitis During Serum Sickness.—Carrieu ascribes to the serum sickness the orchitis which developed in the boy of 13 after a course of 90 c.c. of diphtheria antitoxin for a mild brief diphtheria. The orchitis had been preceded by a day of fever and an itching eruption, and pain in passively moved joints. The testicles were swollen and painful for nearly six days although the other symptoms of serum sickness soon subsided after 2 gm. of calcium chlorid had been given. Carrieu prescribed, further, 0.5 gm. of quinin plus 0.2 of acetylsalicylic acid.

Bulletin de l'Académie de Médecine, Paris

April 25, 1922, **87**, No. 17

Homes for Nursing Mothers. General Discussion.—p. 434. Cont'n.
*Laceration During Labor. A. Le Roy des Barres.—p. 455.
*Therapeutic Oleothorax. A. Bernou.—p. 457.

Management of Laceration During Labor.—In des Barres' case there was a slightly contracted pelvis and the maneuvers of the midwife had resulted in laceration of the lower segment of the uterus and vagina, with infection, the child putrefied. He saved the woman by opening the abdomen and protecting the laceration and the peritoneum while the midwife evacuated the uterus by the natural route. After this he removed the uterus. By this means, infection of the peritoneum was kept down to the minimum.

The Oleothorax.—Bernou injects oil into the pleural cavity after evacuation of pus, and in treatment of perforation of the lung in the course of artificial pneumothorax. The normal pleura would not bear this direct treatment, but in such pathologic conditions the oleothorax answered the desired purpose in the two cases described. The fistula healed and the medicated oil prevented adhesions. The oil is rapidly absorbed at first and has to be renewed. In his second case, the pyothorax was secondary to artificial pneumothorax, and after a vomica he aspirated a liter of pus and injected in its place 600 c.c. of oil. Twenty-four days later he withdrew 600 c.c. of pus, replacing it with the same amount of oil, and repeating with smaller amounts as the pus grew less. The oil floats on the pus.

May 2, 1922, **87**, No. 18

*Results of Cholecystectomy. H. Hartmann and Petit-Dutaillis.—p. 481.
*Training of Deafmutes. Castex and Thollon.—p. 489.

Remote Results of Cholecystectomy.—This study of 100 persons from one to twenty years after removal of the gallbladder shows that 92 per cent. were completely cured of their former disturbances. Only 2 per cent. required intervention later on account of adhesions. In another case a calculus in the common bile duct had been overlooked. In 13 per cent. the pathologic appendix had to be removed.

Training of Deafmutes.—Castex calls attention to the great assistance rendered by special cinematographic films in teaching deafmutes to talk.

Bulletins de la Société Médicale des Hôpitaux, Paris

April 7, 1922, **46**, No. 13

Autohemotherapy in Dragging Infectious Diseases. F. Ramond.—p. 578.
Radioscopy of Intratracheal Injections. Claisse and Serrand.—p. 579.
Liver Reaction in Serum Sickness. Oudard and Jean.—p. 580.
The Blood During Thorium X Treatment of Chronic Rheumatism. C. Aubertin.—p. 582.
Serotherapy in Acute Pneumonia. D'Oelsnitz et al.—p. 588.
Gangrene of Lung. E. Lenoble and Y. Jegat.—p. 591.
*Emetin in Amebiasis. E. Lenoble and Y. Jegat.—p. 595. Idem. F. Laporte and E. Roques.—p. 603. Idem. V. de Lavergne.—p. 620.
*Intolerance for Arsenicals. Gougerot and Blamoutier.—p. 598.
*Myxedema. Nobécourt and H. Janet.—p. 608.
*Abscess in Lung. G. Paisseau and Iser-Solomon.—p. 611.
*Artificial Pneumothorax in Child. A. Delille et al.—p. 618.
*Bleeding Time in Purpura. P. Emile-Weil and Bocage.—p. 624.
Vaccine-Serotherapy in Pneumonia. D'Oelsnitz and Colle.—p. 632.
*Compression of Pulmonary Artery. C. Laubry and D. Routier.—p. 636.

Emetin in Amebiasis.—In Lenoble's case tne amebic liver abscess showed the benefit from the emetin in twenty-four hours, and the cure soon seemed complete of both the chronic dysentery and the liver abscess. Laporte reports likewise a case of old amebic hepatitis, with fever of the undulant type, in which a speedy cure followed emetin treatment. De Lavergne reports four cases of the localization in the rectum of spirochetosis — the fusospirillar infection of Vincent's angina—secondary to amebic dysentery.

Intolerance to Arsenicals.—Gougerot noted a diffuse rash in three syphilitics under arsphenamin treatment, and each of them responded positively with the hemoclastic crisis to ingestion of a glass of milk, fasting. Analysis of the cases demonstrated that the rash is an evidence of intolerance for arsenicals, and they should not be given in any form, as the colloidoclastic shock indicates special susceptibility of the liver. He advises inquiry as to a rash under arsphenamin treatment, as this imposes extra caution, if not forbidding arsphenamin treatment entirely. There was no hemoclastic crisis with mercury or bismuth in his cases, but any arsenical brought it on, and this susceptibility probably persists for years.

Thyroid Treatment in Myxedema.—The basal metabolism in children under thyroid treatment for myxedema showed clearly the effect of the organotherapy. The basal metabolism increased while the weight declined.

Large Abscess of the Lung.—Paisseau emphasizes the ovoid shape of the abscess in the roentgenograms, the large vertical diameter and the regular limitation by a distinct shadow. In two cases reported the large abscess followed pneumonia or a streptococcus bronchopneumonia, and healed spontaneously after a vomica. The gradual subsidence of the cavity could be seen with roentgenoscopy in the young woman and in the man of 49.

Artificial Pneumothorax in Children.—In the case reported, tuberculous meningitis developed after the artificial pneumothorax. The case warns against artificial pneumothorax in children unless only one lung is affected. In this case, lesions in the other lung were probably responsible for the meningitis.

The Bleeding Time in Purpura.—Weil and Bocage refer to cases showing waves of purpura with multiple hemorrhages, a condition to which they have applied the term "hemogenia." They here explain that the tendency to this condition can be recognized by the fluctuations in length of the bleeding time, "an actual arrhythmia of the bleeding time." In the normal, this is stable. They report the application of various tests to explain the nature of the hemogenia and means to influence it, but all with negative results to date.

The Heart as Affected by Pressure on the Pulmonary Artery.—The robust man of 30 died with symptoms of insufficiency of the right heart. Necropsy disclosed that this was of mechanical origin from pressure on the pulmonary artery by a bunch of enlarged mediastinal glands. The artery itself was intact.

Gynécologie et Obstétrique, Paris

April, 1922, **5**, No. 4

Pure Fibroma in Ovary plus Uterine Fibroma. Delle Chiaje.—p. 265.
*Hysterectomy Post Abortum. J. Vanverts.—p. 277.
*Fetal Malformations and Syphilis. J. Henrotay.—p. 287.
Circulation in Univitelline Twins. Mutel and Vermelin.—p. 294.
Stenosis of Pylorus in Infants. H. Hartmann.—p. 307.

Hysterectomy Postabortum.—Vanverts relates that in 80 women the fever subsided at once after curetting postabortum; 2 died and the outcome is not known in a third, but improvement had seemed to be progressive. This group included some very serious cases. In another group in which the fever by the next day had kept up the same, or increased, 5 of the 17 women died. In 5 of the 12 cases with recovery, a turpentine fixation abscess had been induced. These experiences confirm the importance of the temperature the day following the curetting as a guide to treatment: with persisting fever the mortality was 29.4 per cent.; with dropping temperature, only 2.5 per cent. With fever persisting the fourth day, the mortality was 55 per cent. Unless the fever can be explained by some extra-uterine lesion, his experience confirms the value of curetting when there is recent retention, not longer than seven days after the abortion, or when the infection is restricted to the uterus. Among the arguments in favor of vaginal hysterectomy in case of persisting fever, or when curetting is impossible, is the empiric observation that on recovery from grave puerperal infection, the lesions and adhesions left in the adnexa prevent normal pregnancies thereafter.

Fetal Malformations and Syphilis.—Henrotay describes among other instances the history of three brothers whose wives were not related and none had ever shown the least sign of syphilis, but two of the wives had borne malformed children or monsters. The retrospective diagnosis showed inherited syphilis in the men, and the third wife was given specific treatment in prophylaxis as she was four months pregnant. A sister of the three men has normal children.

Journal de Chirurgie, Paris

May, 1922, **19**, No. 5

*Technic for Duodenojejunostomy. R. Grégoire.—p. 449.
Access to Retrocecal Appendix. P. Lecène.—p. 459.
Removal of Large Inflammatory Abdominal Tumor. R. Dupont.—p. 469.

Duodenojejunostomy.—Grégoire knows of only fifteen published cases of this operation, including his own four cases. His four illustrations show the technic for both the side-to-side and the Y methods, allowing no chance for the vicious circle, and no slit in the mesentery for the bowel to slip through.

Journal de Médecine de Bordeaux

April 10, 1922, **94**, No. 7

*Cancer of Jejunum. J. Denis and A. Charrier.—p. 203.
Iodin Internally in Treatment of Tuberculosis. H. Bernard.—p. 205.
Digestion in Hereditary Syphilis in Nurslings. J. Vergely.—p. 206.
Hematuria from Varix in Bladder. H. Blanchot.—p. 211.

Duodenal Occlusion from Cancer.—Denis and Charrier describe a case of duodenal occlusion due to cancer of the jejunum. The syndrome is like that with pyloric stenosis except the extremely profuse vomiting of a green fluid, from 1 to 3 liters daily.

Lyon Médical

April 25, 1922, **131**, No. 8

Temporary Tracheostomy for Foreign Bodies. F. J. Collet.—p. 329.
*Pleurisy with Typhoid Fever. A. Dumas and Paupert-Ravault.—p. 332.
Serotherapy and Protein Therapy of Buboes Secondary to Soft Chancre. L. M. Bonnet.—p. 358.

Pleurisy with Typhoid Fever.—Dumas and Paupert-Ravault describe five cases of pleurisy occurring during typhoid fever. One was a typical typhoid pleurisy; two were secondary to bronchopulmonary manifestations, and the other two were probably of a rheumatismal nature. They assumed the rheumatismal nature on account of the conditions under which the pleurisy appeared, the leukocyte count with many endothelial cells, and the accompanying heart and pericardium symptoms and chronic imprint. They applied sodium salicylate treatment at too late a stage of the disease to appreciate its effect, but they will have recourse to it at an earlier stage when similar cases occur again.

Nourrisson, Paris

May, 1922, **10**, No. 3

*The Bone Changes in Rachitis. A. B. Marfan.—p. 145.
Acute Vertebral Osteomyelitis in Three Weeks Infant. Madier.—p. 168.
*Exhalation of Water by Infant Lung. Marfan and Dorlencourt.—p. 173.
Acute Dilatation of Stomach in New-Born Infant. J. Péry and P. Balard.—p. 183.
Congenital Stridor with Perilaryngeal Abscess. G. Blechmann and Peignaux.—p. 187.
*Vomiting from Slight Carbon Monoxid Poisoning in Infant. G. Raillict.—p. 191.

The Bones in Rachitis.—Marfan recalls that when rachitis begins before the child is 4 months old, it always starts in the skull; then it affects the ribs, and finally the bones in the limbs; in older children the ribs first, and the arms before the legs. Mild forms are frequently overlooked. Radiography of the wrist is usually instructive, as the bones here are nearly always involved, and the changes are characteristic, as he explains.

Exhalation of Water by Infants' Lungs.—The apparatus described showed that in cholera infantum the amount of water passed off through the lungs was 33 per cent. more than in normal conditions. With ordinary diarrhea, the amount was over 50 per cent. less than usual.

Vomiting from Carbon Monoxid Poisoning.—The young infant's incessant vomiting occurred only in the bedroom; elsewhere it seemed to lose the tendency to vomit. By exclusion, the disturbance was finally traced to a defective chimney. Vomiting is not known as a symptom of coal gas poisoning but this cause was unmistakable here.

Paris Médical

May 6, 1922, **12**, No. 18

*Diseases of Metabolism in 1922. G. Linossier and G. Monod.—p. 361.
*Diabetes in Children. M. Labbé.—p. 371.
Treatment of Grave Diabetes. L. Blum.—p. 378.
Diet in Diabetes. H. Bierry and F. Rathery.—p. 381.
*Obesity in Children. P. Lereboullet.—p. 386.

Diseases of Metabolism in 1922.—Linossier remarks that until recently we have studied diabetes from the urine but now we study it from the blood. His ten page review is devoted to this. He says that the pancreas seems to be the only endocrine gland involved, and that it is involved probably in every case of diabetes.

Diabetes in Children.—Labbé has encountered thirty cases of diabetes in children. It has been observed in infants only a few weeks old. He has never been able to detect any connection with infections or trauma or inherited syphilis. In three instances a family diabetic taint was evident: two diabetic children in the apparently healthy family. By comparing the condition of the treated and untreated cases, we realize the benefit from proper treatment, although we are seldom able to cure the diabetes. He thinks a cure has been realized in one of his cases; the older sister died in coma at 6, but in the younger sister, the glycosuria up to 30 gm. at the age of 3 yielded to treatment, and the child seems to have entirely recovered. The sugar content of the blood will differentiate renal diabetes, and a change to a milk-vegetable diet will banish the glycosuria when it is due merely to liver derangement. Alimentary glycemia may be useful in differentiation. Treatment of diabetes in children does not differ from that in adults, but it is harder to apply. He explains that pathologic acidosis differs materially from the acidosis from fasting. Too much fat and albumin, too much meat, are liable to entail coma. Protein is more dangerous than fat, and meat should be dropped. In one girl of 5 after trial of cereals, milk and vegetables for over a year, she thrives best on a legume diet. Milk combats acidosis but it increases the glycosuria, as also rice and potato. Green vegetables (from 500 to 1,200 gm. a day) supply minerals and alkali. He gives this diet for one or several weeks at a time and the children bear it well provided there is variety in the green vegetables. Flatulence and sometimes diarrhea are the drawbacks. On twenty days of this strict vegetable diet the glycosuria and acidosis subsided in one girl of 15 who had been showing symptoms for a month of grave diabetes, and there has been no recurrence during the year since. One girl of 3½ developed grave diabetes which grew worse on a diet of meat, fat and starchy foods. There was glycosuria of 120 gm. and 9 gm. of acetone bodies. In ten days of restriction to green vegetables, there was no further glycosuria and only traces of acetone. The diet was then gradually amplified but in two weeks glycosuria and acidosis reappeared, with somnolency, and again the symptoms subsided under a strict green vegetable diet, and the weight increased. Hygiene is very important; the child should live a quiet life under the constant surveillance of its parents, avoiding fatigue, chilling and infections.

Obesity in Children.—Lereboullet has noticed that the obesity for which endocrine glands can be incriminated is usually a partial, regional, not a diffuse, uniform obesity. With the latter, dieting and physiotherapy are the main reliance, but with endocrine obesity the gland or glands involved must be investigated, and the possibility of surgical treatment and radiotherapy considered, tentative treatment for syphilis applied, and organotherapy. In his experience, pituitary or suprarenal extract seemed to increase the efficacy of thyroid treatment.

May 13, 1922, **12**, No. 19

*Visceral Nitritoid Crises. H. Gougerot.—p. 393.
Treatment of Dyspepsia with Emaciation. F. Moutier.—p. 397.
Intratracheal Injections. J. Forestier and L. Leroux.—p. 403.

Visceral Nitritoid Crises.—Gougerot reports some cases in which neo-arsphenamin treatment caused a nitritoid crisis in the uterus, inducing abortion. In others the symptoms developed in the joints, suggesting acute articular rheumatism; or in the kidneys, inducing hematuria; or in the spinal roots, inducing intense pains and transient paraplegia. These mishaps all occurred with injection of the drug by the vein, and he now prefers the subcutaneous or intramuscular route for all pregnant women and for the frail and intolerant.

Presse Médicale, Paris

April 29, 1922, **30**, No. 34

*Phlegmon Back of Esophagus. J. Guisez.—p. 365.
*Leukocytes Under Epinephrin in Myelosis. J. Goia.—p. 366.
Present Status of Hemochromatosis. J. Rouillard.—p. 369.

Phlegmon Back of Esophagus.—In Guisez' three cases of this kind, in children from 13 months to 3 years old, progressive dyspnea with attacks of suffocation and hoarseness were the first symptoms, soon followed by dysphagia. Tracheotomy was required and the posterior trachea wall was found bulging inward instead of the anticipated foreign body. All recovered after the retro-esophageal pus pocket was incised through the esophagus. In adults the trachea being more resistant, dysphagia is the only symptom, the esophagus being squeezed more or less flat at all ages.

Action of Epinephrin on the Leukocytes.—First a phase of pronounced lymphocytosis, and then a relative polynucleosis follow the injection of epinephrin in the normal. In leukemia and other forms of myelosis the reaction differs characteristically, and allows diifferentiation of aleukemic lymphadenosis, etc.

Revue de Chirurgie, Paris

1922, **41**, No. 2

*Results of Treatment of Cleft Palate. V. Veau and Ruppe.—p. 81.
*Vomica with Amebic Abscess in Liver. G. Miginiac.—p. 100.
Astragalectomy. E. Destot.—p. 131.
*Wounds of the Knee. R. Simon and E. Stulz.—p. 134.

Cleft Palate.—Veau states that of the 89 operative cases treated by the classic procedures, the immediate result was good in 48 per cent., and in 74 per cent. after supplementary operations. Spontaneous improvement in speech followed in 25 per cent. and in 15 per cent. after systematic vocal training; in 60 per cent. no training was undertaken and there was no improvement in the functional results. The stiffness and shortness of the soft palate explained the failures, the raw surface inviting infection, and the cicatricial shriveling. No raw surface should ever be left, and the muscle fibers should not be cut, if possible to avoid this.

Vomica with Amebic Abscess.—Miginiac compares two personally observed cases with forty-nine he has found recorded since 1895. The vomica is almost always a grave complication, compelling an emergency operation and drainage of the abscess as if the vomica had not occurred. Emetin is a valuable aid and in exceptional cases can be depended on alone, if the abscess has been completely evacuated by the vomica.

Injury of the Knee.—Five cases are described in boys or men, the knee injured by being dragged by a vehicle in the street or by an ax wound. The operation followed within an hour or two. The joint was opened and the crushed tissues removed, the parts sutured, and then the joint was sutured again at once, and it healed in all with perfect function. Progressive mobilization was cautiously applied.

Riforma Medica, Naples

April 3, 1922, **38**, No. 14

*Microscopy of Bacilli in Sputum. N. Pane.—p. 313.
*Coagulation of Citrated Blood. G. Leone.—p. 313.
*Test for Bilirubinemia. A. de Martini.—p. 314.
*Roentgenotherapy in Typhoid. A. Pais.—p. 317.
Megacolon. V. Pauchet.—p. 318.
Epidemic of Grain Itch. E. de Longis.—p. 320.

Bacteriologic Examination of Sputum.—Pane remarks that the formaldehyd method of homogenization of sputum is very apt to dissolve the younger tubercle bacilli in the sputum, and modify the staining properties of some of the others. These drawbacks are particularly grave in incipient cases in which negative findings may waste precious time. He avoids these misleading findings by adding to the sputum four times its volume of physiologic saline and incubating at 37 C. for twenty-four hours. The proteolytic enzymes formed by the accessory micro-organisms during this period liquefy the mucus and cells in the sputum, and then centrifuging and staining show up the tubercle bacilli well.

Coagulation of Citrated Blood.—Leone poured a 30 per cent. solution of sodium citrate into the dog stomach but no influence even from 1 to 2 gm. per kilogram on the coagulating time of the blood could be detected afterward. Injecting a 25 per cent. solution subcutaneously, however, retarded the coagulating time to twice its former length in an hour and a half, and this effect was apparent for twenty-four hours. By the vein, in an amount equal to 1 gm. per kilogram, fractioned, with brief intervals, the blood became incoagulable almost at once, and this effect lasted for several hours.

Bilirubinemia.—De Martini calls attention to the delicacy and reliability of pure acetic acid as a reagent for bilirubin in the blood. The color reaction is exceptionally prompt and distinct, without precipitation of albumin, and he lauds this technic as superior to all others yet tested. He applied it in jaundice of various origins, comparing the findings with those of Hijman van den Bergh's modification of the diazo reaction, and using pure acetic acid or a 50 per cent. dilution. When there is insufficiency of the liver, more bilirubin passes into the blood, and the reaction occurs more promptly than when the proportion is less. He noted that the bilirubinemia and the bilirubinuria became more and more intense as the symptoms became more pronounced, the edema, dyspnea, albuminuria, alimentary levulosuria and jaundice.

Roentgen-Ray Treatment of Typhoid.—Pais applies the roentgen rays to the blood-producing organs in a merely stimulating dose, his assumption being that this stimulates the defensive forces, and is thus a potent aid in combating any acute infection. His experience in typhoid and malaria, he says, has abundantly confirmed this assumption. The dose was less than the smallest used in ordinary radiotherapy, and he exposed the spleen and other abdominal organs in five cases of typhoid. The organism responds to the exposures differently according to the stage of the disease and the hour of the day. The effect is unfavorable when the temperature is climbing, but progressive attenuation of the symptoms and immediate euphoria follow exposure of the spleen as the temperature is declining.

Medizinische Klinik, Berlin

April 30, 1922, **18**, No. 18

*The Gout Question. T. Brugsch.—p. 553.
*Pregnancy in Amenorrhea. R. Hofstätter.—p. 556.
*Gastric Sarcoma. H. Finsterer.—p. 561.
Spontaneous Pneumoperitoneum With Gastric Ulcer. Dahm.—p. 562.
Case of Leukemic Chloromyelosis. R. Höppli.—p. 563.
Hemangioma on Arm and Penis. F. Kroll.—p. 564.
Source of Error in Wassermann Test. K. Meyer.—p. 566.
*Factors in Arsphenamin Mishaps. F. Jacobsohn and E. Sklarz.—p. 567.
Pyelocystitis. K. Blühdorn.—p. 569.
Practical Questions in Obstetrics. E. Runge.—p. 570. Cont'n.
Present Status of Tartar Emetic as a Specific. Mayer.—p. 572. Conc'n.

The Gout Question.—Brugsch explains that the colorimetric method for determining the uric acid content of the blood has three sources of error. Hence the work that has been done with the Folin-Wu method has given misleading findings. The characteristic of gout is a relatively high uric acid content of the blood with a relatively low uric acid content of the urine. The experiences of the war have confirmed the advantage of restricting purins in the diet of the gouty. We have learned further that the purin metabolism is a neurologic-metabolic process, and that irritation of a certain center in the medulla oblongata—directly or by drugs—influences endogenous uric acid excretion. This *reizharnsäure* affords a new standpoint for study of gout: the stimulation of uric acid production and excretion by various foods and drugs in health and in gout. Uricolysis can be left entirely out of the question now.

Pregnancy During Amenorrhea.—Hofstätter discusses eleven cases of this kind. These women had been pregnant before, and this amenorrhea pregnancy was seldom carried to term.

Gastric Sarcoma After Resection of Stomach.—A large duodenal ulcer was found inoperable in the man of 51, and consequently only the stomach was resected (15:25 cm.). The man felt entirely well for nearly two years, when the pylorus end of the stomach was found the seat of a large sarcoma. The duodenal tumor had healed. The sarcoma was resected, with the adherent colon, but the man succumbed to metastasis four months later. Only about 200 cases of gastric sarcoma have been published, with radical operation in 60. Finsterer has had 2 operative cases himself; one man of 20 is still in good health nine years after the operation.

Ion Balance During Arsphenamin Treatment.—The research on rabbits reported seems to suggest that calcium in large doses increases the tolerance for arsenic while minute doses augment the toxicity.

Zeitschrift für Tuberkulose, Berlin

April, 1922, **36**, No. 2

*Tuberculosis of Male Genital Organs. P. J. Schultz.—p. 81.
*Ossification of First Costal Cartilage. F. Salomon.—p. 99.
*Artificial Pneumothorax. E. Schill et al.—p. 104.
*Experimental Chronic Tuberculosis in Rabbits. R. Arima.—p. 114.
Moro's "Diagnostic Tuberculin." E. Wever.—p. 117.

Tuberculosis of Male Genital Organs.—Schultz devotes 11 pages to the tabulated details of 125 cases. They demonstrate the rarity of primary tuberculosis of the testicle; there was no evidence of "testifugal" infection in more than a seventh of the cases. In practically all the others the infection proceeded from the prostate. These 125 cadavers were encountered among 14,086 necropsies, and there was always some other tuberculous focus or foci, recent or healed. The age peak was in the thirties, but 12.8 per cent. were between 60 and 70. The prostate was involved in 83.2 per cent., the vesicle in 64.4, and the epididymis in 52.8 per cent. In 28 per cent. the prostate was the only genital organ affected, and in 18.4 per cent. it was the only organ affected in the entire urogenital system. In 3 cases this was true of the seminal vesicles on one side. In 2 cases of miliary tuberculosis the prostate and the kidneys were the only urogenital organs involved.

Ossification of Costal Cartilage.—Salomon has been studying the frequency and the clinical import of ossification of the first costal cartilage from the standpoint of pulmonary tuberculosis, and especially the significance of the formation of a joint in the ossified cartilage. The cartilage was ossified in 26.5 per cent. of 1018 soldiers; in 16 per cent. of 1028 men and 3.4 per cent. of 680 women—all tuberculous. But no connection with the course of the lung process could be traced.

Technic for Artificial Pneumothorax.—Schill and his co-workers compared the physical and roentgen findings in regard to the conditions favoring artificial pneumothorax with the necropsy findings not long after in thirty-three tuberculous patients. The combination of electric, physical and roentgen investigation is much more instructive than the latter alone, supplemented by the extent of expansion of the lung, and the movability of the pleura. In some cases flat adhesions broke at a touch, and bands stretched allowing an effectual pneumothorax. This was exemplified in one case in which spontaneous pneumothorax developed the day before the patient died.

Experimental Chronic Tuberculosis in Rabbits.—Arima relates that he succeeded in inducing chronic tuberculosis by inoculating the parenchyma of the testicle with human tubercle bacilli. The intensity of the infection was proportional to the amount of material injected, and the disease subsided and the lesions healed in some. He does not know of any instance on record of the healing of tuberculosis of the human type in a guinea-pig.

Zentralblatt für Chirurgie, Leipzig

Feb. 11, 1922, **49**, No. 6

Postoperative Tetany and Anesthesia Accidents. Harttung.—p. 186.
Invagination After Gastro-Enterostomy. L. Arnsperger.—p. 190.
*Potassium Iodid as Contrast Medium. H. Lehmann.—p. 193.
*Technic of Late Two-Stage Prostatectomy. A. Wagner.—p. 194.

Potassium Iodid as a Contrast Medium.—Rubritius' success with a 10 per cent. solution of potassium iodid in roentgenography of bladder, uterus and renal pelvis induced Lehmann to apply the same to diagnose fistulas, abscesses and empyema cavities. The skin around the fistula is anesthetized with procain, a tobacco-bag suture is thrown about the fistular opening, a blunt cannula is passed into the fistula as far as it will readily go and as much potassium iodid is injected into the fistula as is possible without causing pain. The cannula is then removed and the suture is drawn taut. In a cold abscess the pus is drawn off, and a corresponding quantity of the solution is injected into the cavity and is retained by closing the puncture. The roentgen shadows are very intense. No unpleasant symptoms were observable. One advantage over pastes was that the fluid readily entered the smallest ramifying passages leading from the cold abscesses to the caries foci. There is no danger from poisoning, as with bismuth, and the fluid is much more easily removed afterward than bismuth.

Technic for Two-Stage Prostatectomy.—Wagner has found the mortality from prostatectomy materially diminished since the introduction of the two-stage operation. In all cases of prostatitis in which the single operation appears too dangerous, epicystostomy is performed to give conservative relief. As soon as the opportune time arrives for the operation, the prostate is removed transvesically. Patients often feel so much better after the bladder fistula that they put off the second operation—sometimes for months or even years. The technic of the second operation may become more complicated through long delay; the bladder shrinks and the peritoneum becomes adherent and it may tear at several points. Therefore, of late, when the second stage had been delayed, Wagner divided the peritoneum above the fistula and sutured it to the bladder. In this manner more space is secured if the bladder is small, and the fistula can be easily opened up further. This extraperitoneal exposure of the bladder much facilitates the operation; it does not complicate matters in the slightest, and shortens the length of the operation in many cases.

Zentralblatt für Gynäkologie, Leipzig

Feb. 18, 1922, **46**, No. 7

Clinical and Pathologic Aspects of Adenomyosis. Frankl.—p. 241.
So-Called Hypnotic Twilight Sleep. Schultze-Rhonhof.—p. 247.
Hypnosis in Relation to Postoperative Deficit Symptoms. Wolff.—p. 258.
Technic of Roentgen Irradiation of Large Areas. W. Uter.—p. 259.
Diagnostic and Therapeutic Value of Pneumoperitoneum in Postoperative Adhesions after Laparotomy. Feldmann.—p. 262.
Subperitoneal Dermoid Impeding Childbirth. Kampschulte.—p. 266.
Primary and Late Results of Surgically Treated Chronic Tumors of Adnexa. A. Probstner.—p. 267.

Acta Medica Scandinavica, Stockholm

April 4, 1922, **56**, No. 3

*Wassermann Reaction. T. E. Hess Thaysen.—p. 195.
Sudden Death from Embolus in Mitral Valve. A. Barkman.—p. 225.
Pharmacologic Tests of Narcotic Proprietaries. J. Grönberg.—p. 230.
*Clinical Capillaroscopy. K. Secher.—p. 295.

Wassermann Reaction.—Active Syphilis.—Thaysen affirms that a lesion that is not causing symptoms and probably never will induce symptoms should not be called active, whether the Wassermann reaction is positive or not. The syphilitic lesions found in the viscera at necropsy probably developed during the spirochetemia of the secondary stage. In a typical group of 57 cases, for instance, in which the positive Wassermann reaction is the only sign of syphilis, assuming that they had acquired infection at about the age of 25, the interval since has been from twenty-five to fifty years in 28 of the 57, and all of the 57 denied any knowledge of the original syphilitic infection; in 22 others the interval has been from ten to twenty years. Thaysen assumes that if they have gone twenty-five years without symptoms, the majority will go on to the end without symptoms, notwithstanding their positive Wassermann reaction. The visceral lesions found in such cases should be regarded like the latent fibrous tubercle in the lung, etc. (The article is in English.)

Capillaroscopy.—Secher's conclusions from research on 100 patients with kidney or heart disease or diabetes, and 30 controls, confirm the assumption of independent functioning of the capillary system. (In German.)

Norsk Magazin for Lægevidenskaben, Christiania

May, 1922, **83**, No. 5

*Results of Food Scarcity. C. Flügge.—p. 321.
Indirect Transfusion of Blood. O. Borchgrevink.—p. 342.
*Uncontrollable Vomiting of Infants. C. Johannessen.—p. 347.
Myomectomy in Pregnant Uterus. A. Brekke.—p. 358.
*Research on Asthma. A. de Besche.—p. 361.
Partial Colectomy; Ten Cases. N. Paus.—p. 389.
*Operative Treatment of Nephritis. N. Paus.—p. 393.
Impalement and Stab Wounds. N. Paus.—p. 395.
Nail Extension of Fractured Femur. N. Paus.—p. 397.

Lessons from Food Scarcity.—Flügge reviews the scientific and practical points learned from the food scarcity of the last seven years in Germany. One lesson is the necessity of stimulating home production in times of scarcity by encouraging the farmers to organize for control and distribution, with prizes and no penalties. The fundamentals, bread, potatoes and milk, should be in the hands of a food administration service and be rationed. The rationing should be by age. There should be no official restrictions on other articles of food, but supplementary rations should be allowed proportional to the kind of work being done, the size, disease, etc. The supplementary ration should be specified by the physician; for example, a tall, energetic man doing strenuous work requires at least three times as much food as a small, phlegmatic adult in repose. It is enough for practical rationing purposes to determine the Rohrer index of nutrition and measure the thickness of the adipose tissue in a fold taken up in the abdominal wall close to the umbilicus. The amount of fat in the chest wall, whether ribs are visible or not, the light falling from above, and the tint of the mucous membranes are also instructive.

Habitual Vomiting of Infants.—In the course of this study of uncontrollable vomiting, Johannessen remarks that the roentgen rays have shown that the stomach contracts better when the food is less fluid. They have thus given a scientific basis to the empiric experience that infants who vomit all fluid food may be able to retain porridge. His experience confirmed this in six cases. With spasm of the pylorus, if papaverin does not relieve the spasm promptly, he urges pylorotomy at once. In his own two cases the infants had lost a third of their weight, and only one was saved. The air bubble was very large in all these vomiting infants, and this kept up a vicious circle.

Asthma.—De Besche tabulates the responses in 35 cases of essential asthma to various proteins, pollens, etc. In the 23 horse asthma cases, all responded to the de Besche eye test (touching the eye with the finger drawn over the hair of the horse or other animal, getting a little sweat on the finger); in 7 the Walker test, and in 13 the serum test was negative or dubious. One boy of 7 had asthma after eating egg or apple while his sister developed after the same not asthma but urticaria.

Surgical Nephritis.—Paus removed a kidney in 1909 on account of local pain and hematuria—no other symptoms—and the patient is still in the best of health. He recently encountered a case of hematuria with tenderness of the kidney but no pain. The diagnosis was hemorrhagic nephritis, although the urine was normal except for the hematuria and albuminuria. The kidney was cyanotic but otherwise normal, and all symptoms subsided after loosening up the capsule and cutting down into the kidney to relieve the pressure.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1922

The following journals have been abstracted in the Current Literature Department of The Journal during the past six months. Any of the foreign journals, except those starred, will be lent by The Journal to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where located.

Acta Chirurgica Scandinavica. Irregular. 20 kroner. Stockholm.
Acta Medica Scandinavica. Irregular. 20 kroner. Stockholm.
*Acta Pediatrica. Irregular. $6 per volume. Uppsala.
Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 3.30 yen. Kioto.
American Journal of Anatomy. Bi-m. $7.50. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Hygiene. Bi-m. $6. 310-312 Monument St., Baltimore.
American Journal of the Medical Sciences. M. $6. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Gynecology. M. $6. C. V. Mosby Co., St. Louis.
American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.
American Journal of Physiology. M. $5. 1222 St. Paul St., Baltimore.
American Journal of Psychiatry. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of Public Health. M. $5. 370 Seventh Ave., New York.
American Journal of Roentgenology. M. $6. Paul B. Hoeber, 67 E. 59th St., New York.
American Journal of Syphilis. Q. $7. C. V. Mosby Co., St. Louis.
American Journal of Tropical Medicine. Bi-m. $5 per volume. Williams & Wilkins Co., Baltimore.
American Review of Tuberculosis. M. $5. Williams & Wilkins Co., Baltimore.
Anales de la Facultad de Medicina, Montevideo. M. 6 pesos. Montevideo.
Anales de la Facultad de Medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
Annales des Maladies Vénériennes. M. 52 francs. Paris.
Annales de médecine. M. 55 francs. Paris.
Annali d'igiene. M. 60 lire. Rome.
Annals of Medical History. Q. $8. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Otology, Rhinology and Laryngology. Q. $6. Times Bldg., St. Louis.
Annals of Surgery. M. $7.50. J. B. Lippincott Co., E. Washington Square, Philadelphia.
Annals of Tropical Medicine and Parasitology. Irregular. £1 2s. 6d. Liverpool.
Arbeiten aus dem Anatomischen Institut der Kaiserlich-Japanischen Universität zu Sendai. Irregular. Price varies. Tokyo.
*Archiv für Gynaekologie. Irregular. Price varies. Berlin.
Archiv für Kinderheilkunde. Irregular. 80 marks. Stuttgart.
*Archiv für klinische Chirurgie. Irregular. Price varies. Berlin.
Archiv für Verdauungs-Krankheiten. Irregular. 135 marks. Berlin.
Archives of Dermatology and Syphilology. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives Franco-Belges de Chirurgie. M. 55 francs. Brussels.
Archives of Internal Medicine. M. $5. American Medical Association. 535 N. Dearborn St., Chicago.
Archives des maladies de l'appareil digestif et de la nutrition. Bi-m. 30 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 36 francs. Paris.
Archives de médecine des enfants. M. 40 francs. Paris.
Archives de médecine et de pharmacie militaires. M. Paris.
Archives médicales belges. M. 30 francs. Liége.
Archives of Neurology and Psychiatry. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Occupational Therapy. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Archives of Ophthalmology. Bi-m. $6. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Radiology and Electrotherapy. M. £2, 2 shillings. Rebman Co., 141-145 W. 36th St., New York.
Archives of Surgery. Bi-m. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archivio italiano di chirurgia. Irregular. 90 francs. Bologna.
Archivio per le Scienze Mediche. Bi-m. 36 francs. Torino.
Archivos de Cardiología y Hematología. Bi-m. 24 pesetas. Madrid.
Archivos Españoles de Pediatria. M. 25 pesetas. Madrid.
Archivos Latino-Americanos de Pediatria. M. $5. Buenos Aires.
*Beiträge zur klinischen Chirurgie. Irregular. Price varies. Tübingen.
Boston Medical and Surgical Journal. W. $6. 126 Massachusetts Ave., Boston.
Brain. A Journal of Neurology. Irregular. 24 shillings. London.
Brazil-Medico. W. 25 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Irregular. 3 shillings per issue.
British Journal of Children's Diseases. Q. 25 shillings. London.
British Journal of Experimental Pathology. Bi-m. £2. London.
British Journal of Psychology. Irregular. 25 shillings. London.
British Journal of Surgery. Q. $10. William Wood & Company, 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. $2.50. G. E. Stechert & Co., 151 W. 25th St., New York.
British Medical Journal. W. 1 shilling 3 d. per issue. London.
Bulletin de l'Académie de médecine. W. 40 francs. Paris.
Bulletin médical. Semi-w. 20 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. $4. Baltimore.
Bulletin of the Lying-In Hospital, New York. Irregular. $1. Bulletin of Lying-In Hospital Press, New York.
Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.
Bulletin of the Naval Medical Association of Japan. Irregular. Tokio.
Bulletin of the Porto Rico Medical Association. Bi-m. San Juan, Porto Rico.
Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 65 francs. Paris.
Calcutta Medical Journal. M. 10 shillings. Calcutta.
California State Journal of Medicine. M. $4. Butler Bldg., San Francisco.
Canadian Journal of Mental Hygiene. Q. $2. 207 St. Catherine St., West, Montreal.
Canadian Medical Association Journal. M. $6. 836 University St., Montreal.
*Casopis lekaruv ceskych. W. 170 k. Prague.
China Medical Journal. Bi-m. $5. Shanghai.
Chirurgia degli organi di movimento. Irregular. 55 francs. Bologna.
Colorado Medicine. M. $2. Metropolitan Bldg., Denver.
Crónica Médica. M. 15 francs. Lima, Peru.
Delaware State Medical Journal. Q. $1. 309 Shipley St., Wilmington.
Deutsche medizinische Wochenschrift. W. $6. Leipzig.
Deutsche Zeitschrift für Chirurgie. Irregular. Price varies. Leipzig.
Deutsches Archiv für klinische Medizin. Irregular. Price varies. Leipzig.
Dublin Journal of Medical Science. M. £1.5s.
Edinburgh Medical Journal. M. 40 shillings.
Encéphale. M. 70 francs. Paris.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Bi-m. $6. 1100-1103 Title Insurance Bldg., Los Angeles.
Finska läkaresällskapets Handlingar. Bi-m. 60 Finnish marks. Helsingsfors.
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SUBJECT INDEX

This is an index to all the reading matter in The Journal. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in The Journal.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author follows the subject entry in brackets.

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SOCIETIES

A.—Association
Acad.—Academy
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery

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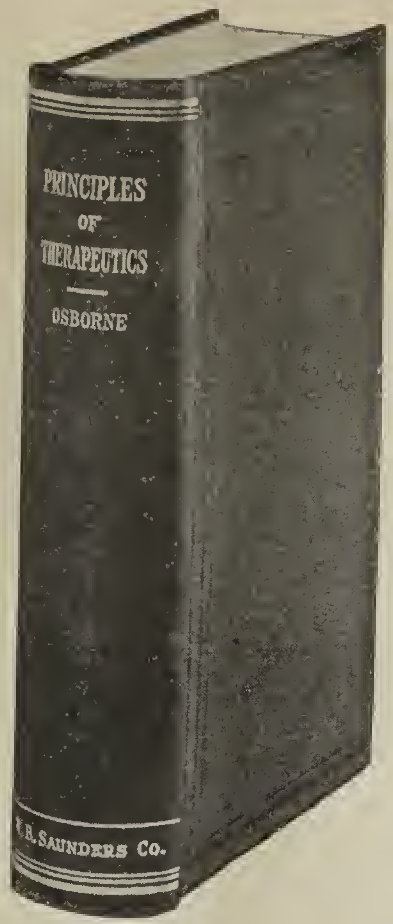

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- Drugs used to relieve irritation in stomach
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Alabama, Med. Assn. of the State of	Walter S. Britt, Eufaula	H. G. Perry, State Bd. of Health, Montgomery	Mobile, Apr. 17-20, 1923
Alaska Territorial Medical Assn	L. P. Dawes, Juneau	H. C. DeVighne, Juneau	
Arizona Medical Association	A. L. Gustetter, Nogales	D. F. Harbridge, Goodrich Bldg., Phoenix	
Arkansas Medical Society	Robert Caldwell, Little Rock	Wm. R. Bathurst, 810 Boyle Bldg., Little Rock	Hot Springs, 1923
California, Med. Soc. of the State of	H. G. Brainerd, Los Angeles	W. E. Musgrave, Butler Bldg., San Francisco	
Colorado State Medical Society	Harry A. Smith, Delta	F. B. Stephenson, Metropolitan Bldg., Denver.	Colorado Springs, 1922
Connecticut State Medical Society	David Russell Lyman, Wallingford	C. W. Comfort, Jr., 27 Elm Street, N. Haven.	
Delaware State Medical Society	J. W. James, Dover	W. O. La Motte, Indust. Tr. Bldg., Wilmington	Dover, Oct. 10, 1922
District of Columbia, Med. Soc. of	A. W. Boswell, Washington	C. B. Conklin, Med. Science Bldg., Washington	
Florida Medical Association	S. R. M. Kennedy, Pensacola	Graham E. Henson, Jacksonville	Havana, Cuba, June 30, 1922
Georgia, Medical Association of	J. M. Smith, Valdosta	Allen H. Bunce, Healey Bldg., Atlanta	Savannah, 1923
Hawaii, Medical Society of	Grover A. Batten, Honolulu	F. J. Pinkerton, 45-46 Young Bldg., Honolulu.	Honolulu, Nov. 19-20, 1922
Idaho State Medical Association	Max T. Smith, Wallace	E. E. Laubaugh, Overland Bldg., Boise	Wallace, July 10-11, 1922
Illinois State Medical Society	E. P. Sloan, Bloomington	W. D. Chapman, Silvis	
Indiana State Medical Association	W. R. Davidson, Evansville	Chas. N. Combs, Terre Haute	Muncie, Sept. 27-29, 1922
Iowa State Medical Society	Charles J. Saunders, Fort Dodge.	T. B. Throckmorton, Bk. Tr. Bl., Des Moines.	Ottumwa, May 9-11, 1923
Isthmian Canal Zone, Med. Assn. of	Troy W. Earhart, Ancon	N. B. Kupfer, Ancon	
Kansas Medical Society	Middleton L. Perry, Topeka	J. F. Hassig, 800 Minnesota Ave., Kansas City	Kansas City, 1923
Kentucky State Medical Association.	J. A. Stucky, Lexington	A. T. McCormack, 532 W. Main St., Louisville	Paducah, 1922
Louisiana State Medical Society	Paul J. Gelpi, New Orleans	P. T. Talbot, 1551 Canal St., New Orleans	
Maine Medical Association	Addison S. Thayer, Portland	B. L. Bryant, 265 Hammond St., Bangor	Portland, June 27-28, 1922
Maryland, Med. and Chir. Faculty of	Herbert Harlan, Baltimore	J. A. Chatard, 1211 Cathedral St., Baltimore	
Massachusetts Medical Society	John W. Bartol, Boston	W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston	,
Michigan State Medical Society	W. T. Dodge, Big Rapids	F. C. Warnshuis, 410 Powers Bldg., Gr. Rapids	
Minnesota State Medical Assn	James Frank Corbett, Minneapolis.	Carl B. Drake, Central Bank Bldg., St. Paul	Minneapolis, Oct. 12-14, '22
Mississippi State Medical Assn	S. W. Johnson, Vicksburg	T. M. Dye, Clarksdale	
Missouri State Medical Association	Arthur R. McComas, Sturgeon	E. J. Goodwin, 3529 Pine St., St. Louis	Joplin, May, 1923
Montana, Medical Association of	W. W. Andrus, Miles City	E. G. Balsam, 222 Hart-Albin Bldg., Billings	Great Falls, July 12-13, 1922
Nebraska State Medical Association.	Benjamin F. Bailey, Lincoln	R. B. Adams, 1013 Terminal Bldg., Lincoln	Lincoln, 1923
Nevada State Medical Association	R. A. Bowdle, East Ely	Horace J. Brown, Goldfield	Reno, Oct. 6-7, 1922
New Hampshire Medical Society	Herbert L. Smith, Nashua	D. E. Sullivan, 7 N. State St., Concord	
New Jersey, Medical Society of	Henry B. Costill, Trenton	William J. Chandler, South Orange	
New Mexico Medical Society	Harry A. Miller, Clovis	J. W. Elder S. F. H., Albuquerque	
New York, Med. Soc. of the State of	Arthur W. Booth, Elmira	Edward L. Hunt, 17 W. 43d St., New York	
N. Carolina, Med. Soc. of the State of	John Wesley Long, Greensboro	L. B. McBrayer, Sanatorium	Asheville, 1923
North Dakota State Med. Assn	Harley E. French, University	H. J. Rowe, Lisbon	
Ohio State Medical Association	Robert Carothers, Cincinnati	Mr. D. K. Martin, Ex. Sec., 131 E. State St., Columbus.	Dayton, 1923
Oklahoma State Medical Association	McLain Rogers, Clinton	C. A. Thompson, 508 Barnes Bldg., Muskogee.	
Oregon State Medical Association	Clarence J. McCusker, Portland	T. Homer Coffen, Journal Bldg., Portland	Portland, June, 1922
Pennsylvania, Med. Soc. of State of	Frank G. Hartman, Lancaster	W. F. Donaldson, Jenkins Arcade, Pittsburgh.	Scranton, Oct. 2-5, 1922
Philippine Islands Medical Assn	Baldomero Roxas, Manila	I. Concepcion, Coll. of Med. & Surg., Manila	
Porto Rico, Med. Assn. of	P. Gutierrez Ingaravidez, San Juan	Augustin R. Laugier, San Juan	Ponce, Dec. 15-17, 1922
Rhode Island Medical Society	George S. Mathews, Providence	I. W. Leech, 111 Broad St., Providence	
South Carolina Medical Association.	Charles F. Williams, Columbia	Edgar A. Hines, Seneca	Charleston, Apr. 17-19, 1923
South Dakota State Med. Assn	Gilbert G. Cottam, Sioux Falls	R. D. Alway, 423 S. Lincoln St., Aberdeen	Watertown, 1923
Tennessee State Medical Assn	Holland M. Tigert, Nashville	Larkin Smith, 154 Eighth Ave., N., Nashville.	
Texas, State Medical Association of.	Joseph D. Becton, Greenville	H. Taylor, Texas State Bk. Bldg., Fort Worth.	
Utah State Medical Association	Augustus C. Behle, Salt Lake City	Wm. L. Rich, Boston Bldg., Salt Lake City	SaltL'eC'y, Aug. 31-Sept. 2, '22
Vermont State Medical Society	F. W. Sears, Burlington	W. G. Ricker, St. Johnsbury	Burlington, Oct. 12-13, 1922
Virginia, Medical Society of	Edward C. S. Taliaferro, Norfolk.	Mr. G. H. Winfrey, 104½ W. Grace St., Richmond	Norfolk, Oct., 1922
Washington State Medical Assn	W. D. Read, Tacoma	C. H. Thomson, 508 Cobb Bldg., Seattle	Tacoma, 1922
West Virginia State Med. Assn	John N. Simpson, Morgantown	Robert A. Ashworth, Moundsville	
Wisconsin, State Med. Society of	Sidney S. Hall, Ripon	Rock Sleyster, Wauwatosa	Green Lake, Sept. 6-8, 1922
Wyoming State Medical Society	E. A. Kell, Rawlins	Earl Whedon, Sheridan	

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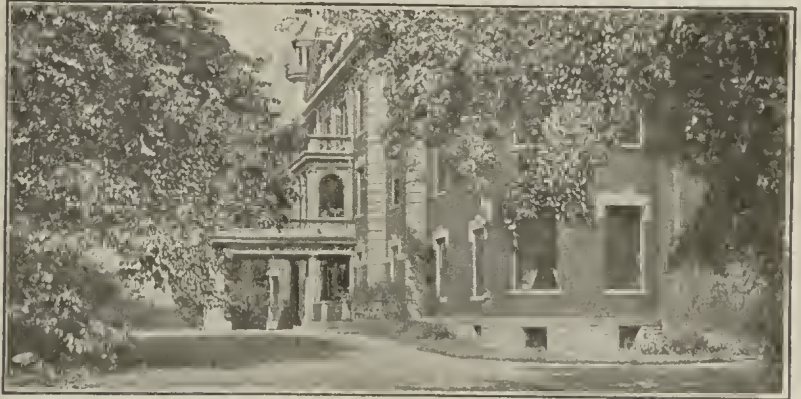

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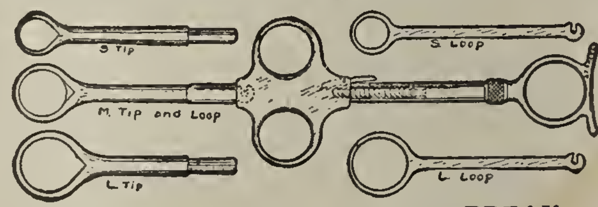

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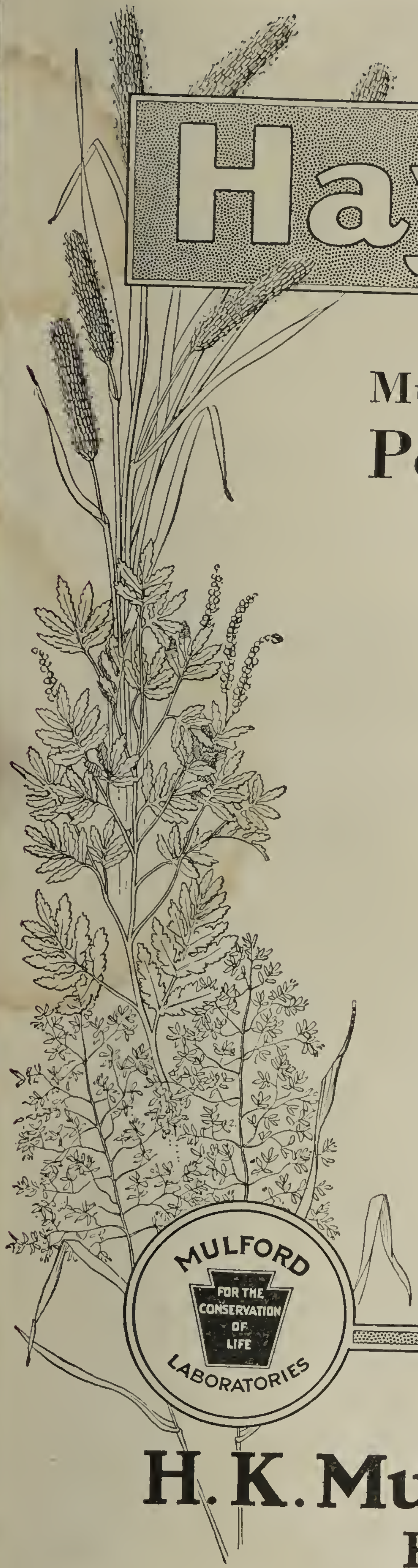

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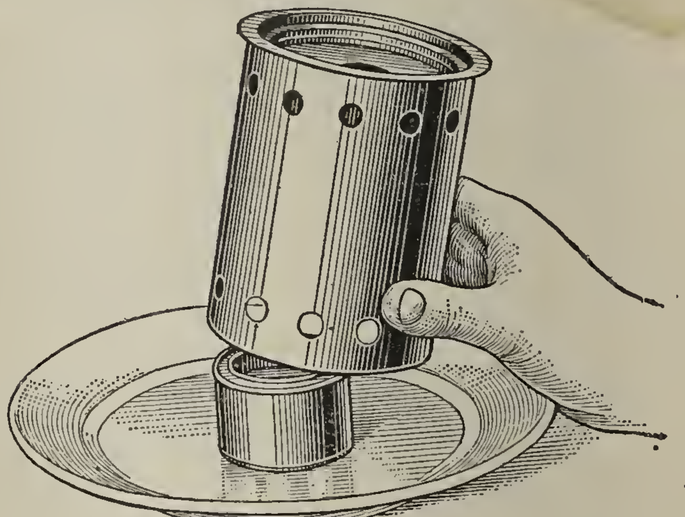

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(*Continued on page 22*)

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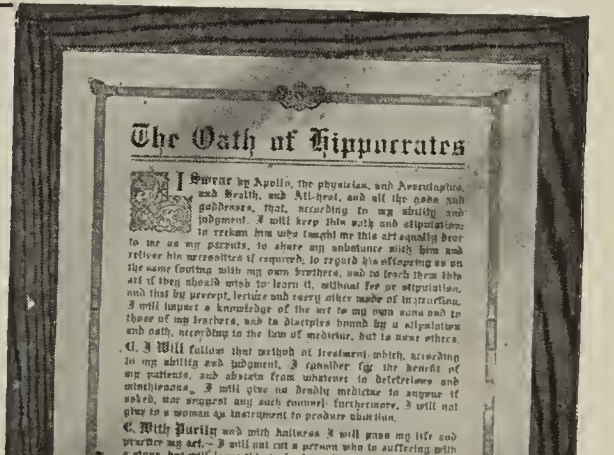

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Tonics and Sedatives

DR. PEPYS' DIARY

June 10.—This day have left ye office to do as it would and spent ye whole day on ye golf links and playing in ye accustomed style have forsworn ye accursed game for good and all. How any one can call by ye name "game" something so aggravating to ye intellect a more difficult matter than I can fathom.

June 11.—Early awake and hardly out of ye bed before ye unregenerates who might far better be in ye church ringing at ye telephone and requesting me make up ye foursome, and at last, silly fool that I am, did go, and feeling cheap indeed to read ye words written yesterday. But this day did well play ye course and we were very merry indeede how one Dr. Ware hath propelled ye pellet invariably into ye canal; ye water should follow after ye pill, not ye pill after ye water.

June 13.—This night to a reunion and very fine to see ye men after ye passage of years. Best of all to see ye spirit of friendliness pervading and ye joy of each man in ye work, for although more than a score present, all having gone through ye same medical training, did note only two or three now engaged in ye same branch of ye science. Many wonderful tales told also but ye best a true tale of how one hath built him a house and how ye tradesmen have set upon him, and ye tale so piteous one would wish to ye assailants at least an attack of ye appendicitis.

June 14.—Closing ye office at midday have gone to attend ye giving of ye medical degrees at ye college and there a fine address by ye head of ye famous group clinic who hath himself seen ye dangers and ye benefits of ye same and did warn ye young men against deluding ye patients. At night to ye dinner where many fine speeches so that ye hour waxed unto midnight, but at last come a speaker with many a jest and jape at ye doctor, telling how ye horse and buggy came late to ye obstetric case and ye automobile now a great labor-saving device; that one president hath had an admiral to be his physician and another a general and that belike if Sir Beveridge be elected he shall select from ye tank corps; and then of a Hibernian and a miracle at ye shrine of St. Anne, so that all departed hilarious and well pleased with ye festivities.

◆

THE LABORATORY MIRACLE

Letter received by a state laboratory

Gentlemen.—I am sending a bottle of sputum. Please make thorough examination for malaria, T. B., typhoid and influenzia, and other pus-forming bacteria. ————, *M.D.*

◆

QUICK ACTION

Mose and Sam were digging a trench over in France. Although not in an especially safe spot, for a time they were unconscious of their danger. Then a shell flew over their heads and exploded just beyond. Others followed. At the fifth explosion Mose asked inquiringly:

"Sam, don' yo-all think it's about time we-all done got religion?"

"Chuff!" retorted Sam scornfully. "Mose, you' suttinly is a tho'ly shif'less boy. Me, I done got religion when de fust bomb bust."—*American Legion Weekly.*

◆

Sewer Enough

New York Times

PARIS, June 3.—A remarkable story of the powers of resistance of a new-born child is related by the Chief of Police of Rennes. Today, after the confinement of Mme. Leonie Guerot of that town, the neighbors reported to the police that the child could not be found. A search was made, but for a time it was futile.

Then the Chief heard faint sounds coming from a drain pipe in the house. Summoning plumbers, the Chief ordered the pipe carefully taken apart. Lodged in the drain he found a girl baby. She had apparently suffered little from seventeen hours' exposure, which a doctor declared that many adults could not have survived.

(Continued on page 24)

(Continued from page 20)

WANTED—RECENT GRADUATE AS ASsistant for six or eight weeks begining latter part of July; work largely contract in town of 700 people; must be honest and interested in work; able to handle ordinary obstetrical cases; pay $200 per month and railroad fare one way; write, stating age, school and year of graduation, hospital or practical experience; work pleasant and instructive; time for study and recreation. Ferris Summerbell, M.D., Nahama, Mich. B

WANTED—AT THE WRENTHAM STATE School, Wrentham, Mass., a woman pharmacist with knowledge of routine laboratory work; salary $720 per year with maintenance. Add. George L. Wallace, M.D., Superintendent. B

WANTED — EXPERIENCED PATHOLOgist, capable of managing laboratory in connection with 55-bed hospital doing much special work; state experience, salary, age and religion in first letter. Add. 3898 B, % AMA.

WANTED—PATHOLOGIST AND ROENTgenologist, 100-bed teaching hospital Chicago; give full information and salary expected in first letter. Add. 3891 B, % AMA.★

WANTED — ASSISTANT — CONTRACT practice in West Virginia; salary $150 per month; drugs and room furnished; increase to right man; single man, recent graduate preferred, with West Virginia license or ability to get same. Dr. W. S. Williams, Sprigg, W. Va. B

WANTED—ASSISTANT PHYSICIAN FOR private 100-bed new, perfectly equipped psychopathic hospital in middle west; psychiatric training and experience necessary; must be well recommended; single; good personality; good salary with excellent maintenance. Add. 3635 B, % AMA.

WANTED — PHYSICIAN AS PATHOLOgist and x-ray technician in a 75-bed hospital; active service. For further information add. 3799 B, % AMA.

WANTED — ASSISTANT TO BUSY PHYsician and surgeon operating a 25-bed surgical hospital; must be graduate of A1 medical school and capable of doing laboratory work and make calls; salary $1,500, with board and room to start. Dr. G. R. Edgeland, Sturgeon Bay, Wis. B

WANTED—ROENTGENOLOGIST TO take complete charge of the x-ray department in a private diagnostic laboratory, situated in an eastern city of 150,000; all referred work; no private patients' clientele; only well-trained men need apply. Add. 3826 B, % AMA.

WANTED — RESIDENT HOMEOPATH— July 1, 1922; $100 per month and maintenance. Apply Superintendent The Hahnemann Hospital, Scranton, Pa.★ B

WANTED—BY REPUTABLE CHICAGO INternist and teacher, doing mainly office consultation work, of which the major portion embraces diseases of the alimentary tract, a young, competent, ethical, progressive, dependable Gentile roentgenographer or roentgen technician; modern Kelley-Koett equipment; congenial surroundings, and for the right man an excellent future; hours 9 a. m. to 5 p. m.; half days Saturday; no Sunday work; salary at start, $2,500 per annum; write comprehensively in first letter; no "floaters," "half-bakeds" or "bluffers" need answer, as advertiser is quite competent to judge quality of roentgen work done and fully informed regarding plate and film procedures and interpretation. Add. 3869 B, % AMA.

WANTED—ASSISTANT PHYSICIAN FOR a contract mining practice; central Pennsylvania; salary $175 per month; Protestant; prefer a single man just finishing internship. Add. 3721 B, % AMA.

WANTED — ASSISTANT PHYSICIAN with Michigan license; applicant must be single; salary $200 a month with furnished room; give age, college, hospital and other experience and fullest details in first letter. Add. 3816 B, % AMA.

WANTED — ASSISTANT PHYSICIAN, state hospital for insane; salary $1,800 and maintenance; single, Gentile; graduate Class A school; give complete information, age, references and send recent photograph in first letter. Add. Dr. G. S. Adams, Superintendent, Yankton, S. D. B

(Continued on page 24)

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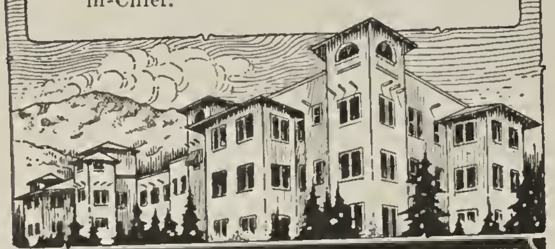

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(Tonics and Sedatives Continued)

A SHORT ESSAY ON THE BOTTLE

London Punch

The presence of a bottle of medicine in every home is one of those national characteristics which might create misgiving but for the reassurances of authoritative journals like *The Lancet* and *The Chemist and Druggist*. Medicine holds a unique position among bottled commodities. Other bottled things have more than one use. Milk may be employed in making rice-puddings, salad-oil will ease a creaking hinge, and whisky that does not happen to be needed for the purpose of frefreshment may be applied with good effect to snake-bite. It is not so, however, with medicine.

And there is the question of flavour. There are subtle differences in ketchup, it is true, and certain brands of claret have a flavour of their own. But, when all is said and done, is there anything quite like medicine?

Again, take the question of the label. It would be considered an insult to a freedom-loving people if our lime-juice, our coffee-essence and our vinegar were labelled with directions limiting their use both as to time and quantity. Yet to such restrictions upon our medicine bottles we tamely submit.

A bottle of medicine is the symbol of the authority of the doctor and the submission of the patient. A man-to-medical-man talk makes servants of us all. Emperors, princes, labour-leaders, prize-fighters and lady assistants at our post-offices, all of whom would scorn to call any man master, at one word from a doctor will breathe deeply and say "Ninety-nine"—or even "One hundred" if need be. And they swallow his medicine, not because they enjoy it, not because, having paid for it, they deem it well to experience its benefits, but in simple obedience.

As for what the bottle of medicine contains, that must remain one of the most closely guarded secrets of the profession. The patient does not need to know what is set down in the prescription; the average chemist is intelligent enough to be able to dispense with it—or without it; and the doctor, if indeed he ever really understood, soon forgets. A bottle of medicine, while the symbol of the doctor's authority, is also an expression of the art of the chemist, to whom a prescription is like a simple theme to a musician, something to be elaborated and ornamented into a great and beautiful composition. Looked at in this way, three-and-sixpence a bottle is not dear.

◆

A PUN FROM JUDGE

"That's me all over," remarked Lady Godiva, as the movies of her celebrated ride flashed on the screen.

◆

The Wonders of Science

Philadelphia Bulletin

San Francisco, June 10.—The sphymomanometer, or lietector, was employed by the San Francisco police yesterday on Henry Wilkens, whose wife was reported shot and killed by an automobile bandit on May 30, while she was riding in the family car with her husband and their two children. The test was said to have demonstrated Wilkens was telling the truth.

The lietector is a "blood pressure machine." Wilkens, who is not under detention, submitted to the test, which consisted of answering a series of questions in connection with the crime. Tubes leading from his arm and heart indicated on a chart in the background no nervous tension was recorded.

◆

WHO CAN MINISTER?

"Outdoors and exercise," said old Dr. Gruff,
"Will cure you completely. Ozone you may quaff
"While essaying daily eighteen holes of golf."
"At such a prescription, no patient could scoff.
"I'll go 'pull' in tall timber and 'slice' to the rough.
"But what, after that, Doc, will cure me of golf?"

Wayside Tales.

(Continued on page 26)

(Continued from page 22)

PHYSICIANS WANTED

WANTED—RESIDENT PHYSICIAN, SINGLE, male, for modern growing 125-bed tuberculosis sanatorium in middle west; exceptional opportunity for young man; salary $1,800 per year to begin; give full details in first letter. Add. 3634 C, % AMA.

WANTED—MONTANA—FOUR GOOD LOCATIONS where physician can make good; must be from Class A school, good moral character, energetic and not afraid of work; nothing to sell; for information, add. 3710 C, % AMA.

PHYSICIANS WANTED—DOCTORS wanted immediately for salaried appointments in hospitals, sanatoriums, industrial plants, railroad companies, mining and contract practice. Apply "The Medical Echo," Lynn, Mass.

WANTED—CHIEF RESIDENT FOR HOSPITAL of 150 beds; salary and maintenance. Apply John S. McConnell, Superintendent Samaritan Hospital, Broad and Ontario St., Philadelphia, Pa.★ C

WANTED — PHYSICIAN FOR DETROIT general practice, $3,000 to $6,000; furnished apartment, office, garage; pay rent only; $85 a month; lease a year or longer; nothing to sell; a good opportunity for good man. Add. 3883 C, % AMA.

WANTED—A LIVE MAN FOR GENERAL practice in country town, northeastern Indiana; no opposition; large surrounding territory; no investments necessary; this is a splendid place for a young man to start practice. Add. 3874 C, % AMA.

WANTED — SUCCESSOR TO MY LONG-established eye, ear, nose and throat practice; must retire soon; will sell complete equipment, furniture, instruments, etc.; about $2,000 required; practice transferred to buyer; city of 90,000 in New York state. Add. 3895 C, % AMA.

WANTED—A SINGLE GRADUATE PHYSICIAN with hospital experience as an assistant in general practice with hospital connections; salary, $1.800 a year and full maintenance; give school and hospital, age, nationality, religion and experience. Add. 3778 C, % AMA.

WANTED—FOR CHILDREN'S HOSPITAL of 115 beds, resident physician (male), having previously served an internship in a general hospital; active service in pediatrics, six months; surgical and orthopedic 6 months, including dispensary service for each; year beginning Aug. 1, 1922; salary $50 per month, with maintenance; reference required. Add. Supt. Children's Hospital of Pittsburgh, Forbes St. and McDevitt Place, Pittsburgh, Pa.★ C

WANTED — GENERAL PRACTITIONERS (no surgeons or specialists) for unopposed locations in Minnesota and North Dakota; fees and collections the best; nothing to sell; do not answer unless you mean business and are ready to come. Add. 3839 C, % AMA.

WANTED—RESIDENT PHYSICIAN WITH experience in tuberculosis work; salary $1,443 and maintenance; state qualifications, previous hospital record, etc. Add. Dr. G. Kremer, Medical Superintendent, Sea View Hospital, Staten Island, N. Y. C

WANTED—RESIDENT PHYSICIAN WITH experience in surgical tuberculosis work; salary $1,716 and maintenance; state qualifications, previous hospital record, etc. Add. Dr. G. Kremer, Medical Superintendent, Sea View Hospital, Staten Island, N. Y. C

WANTED—CLASS A PHYSICIANS, LABORATORY technicians for salaried positions; internists, assistants, surgeons, hospitals, sanatoriums, contract, industrial, partnership, group, appointments; if you desire a permanent position anywhere in United States, send for application form. Aznoe's National Physicians' Exchange, 30 N. Michigan Ave., Chicago. C

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(Continued on page 26)

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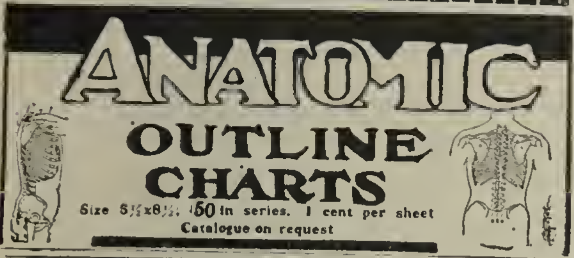

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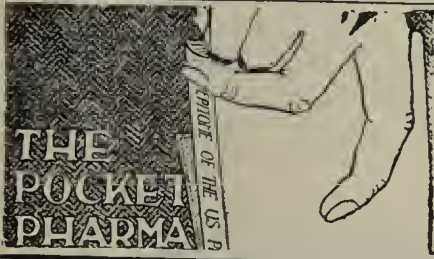

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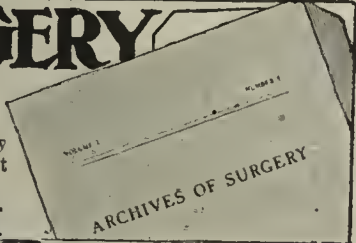

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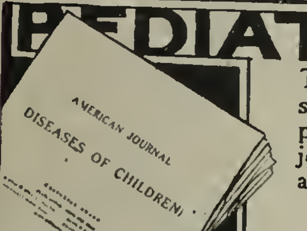

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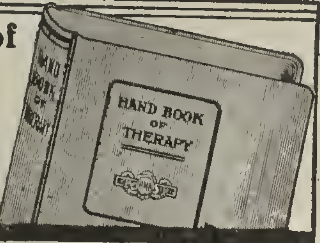

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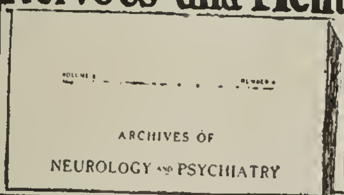
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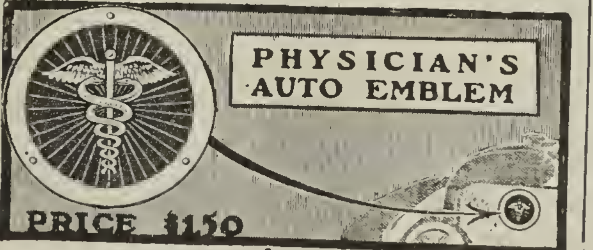

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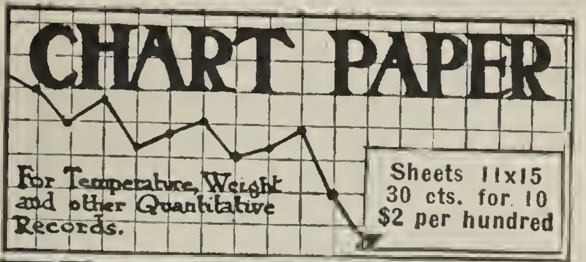

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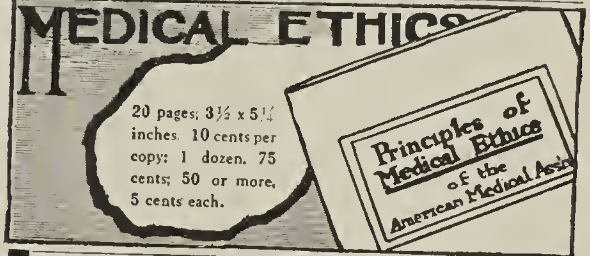
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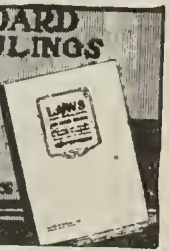

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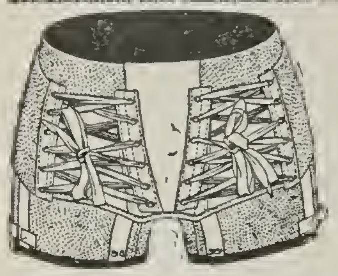

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THE OLD ONES ARE THE BEST

The professor was putting the finishing touches on the sidewalk he was laying down. Tommy, aged six, had been watching the proceedings with great interest, and at length deeming the time right for trial, started to cross before the mixture had time to dry.

When the professor displayed some slight pique, a passer-by observed:

"Why, professor, I thought you liked children."

"I like 'em all right in the abstract," the professor replied, "but not in the concrete."—*Judge.*

◆

Quite Definite

E. Hartford (Conn.) Weekly Gazette

Herman Klinger is the proud father of a female girl, which arrived recently.

◆

AND NOW THEY DON'T SPEAK

Jenkins was sitting down to breakfast one morning when he was astounded to see in the paper an announcement of his own death. He rang up friend Smith at once. "Hello, Smith!" he said. "Have you seen the announcement of my death in the paper?"

"Yes," replied Smith. "Where are you speaking from?"—*Pickup.*

◆

CURRENT COMMENT

Respect for the Dead

London News

Editor (after a surfeit of old jokes) —"M—m—, Yes! But I would like to meet a humorist who is not an exhumerist."

An Impression

London Punch

Orators, we read, live longer than other persons. Our impression is that it only seems longer to their audiences.

The Scientific Attitude

Washington Herald

"Do we eat too much salt?" asks *The Literary Digest.* Probably we do. We have to take nearly everything with a pinch of it nowadays.

Pathogenic

New York American

On the first of the month there is no female nor anything else more deadly than the mail.

(Continued from page 24)

INTERNS WANTED

Hospitals marked with a star (★) are on the list of those approved for intern training by the Council on Med. Ed. & Hosp. of the A. M. A.

WANTED—INTERNSHIP — HAMOT HOSpital, Erie, Pa., offers attractive intern service of one year beginning July 1; active rotative services in medicine, surgery, obstetrics and pediatrics; $25 monthly and maintenance. Apply Superintendent, Hamot Hospital.★ D

WANTED — AN INTERN IN A 75-BED hospital; active service; salary $75, full maintenance; vacancy August 1. Add. 3904 D, % AMA.

WANTED—INTERN, MALE, GRADUATE of Class A school, for Children's Hospital of 60 beds, approved by A. C. S.; specializing in all infants and children's diseases, with exception of contagion; large dispensary; service of one year starting July 1, 1922; salary and full maintenance. Add. Arthur O. Bauss, Superintendent, The Children's Hospital, Akron, Ohio. D

WANTED — INTERN — TUBERCULOSIS sanatorium; salary $1,200 and maintenance. Add. Medical Director, La Vina, Los Angeles County, Calif. D

WANTED — INTERNS FOR GENERAL hospital of 150 beds—medical, surgical, obstetric; service to begin July 1; good laboratories and all modern facilities; salary $25 monthly with full maintenance. Add. Supt. Rochester Homeopathic Hospital, Rochester, N. Y.★ D

WANTED — TWO INTERNS AT CITY Hospital, Springfield, Ohio, by July 1, 1922; capacity 120 beds, rotating service; full maintenance and salary. Apply to Chairman Intern Committee, City Hospital, Springfield, Ohio.★

WANTED—TWO INTERNS (GRADUATES of Class A medical school) for one year's service in general hospital of 150 beds; terms of service commence Aug. 1 and Sept. 1, 1922. For information apply to Superintendent of Morristown Memorial Hospital, Morristown, N. J. D

LABORATORY TECHNICIANS WANTED

WANTED — YOUNG WOMAN LABORAtory technician to do routine laboratory work, bacteriology, clinical pathology, some blood chemistry and serology for 100-bed hospital; position to be filled August 21 or September 1; state age, experience and references. Add. Dr. W. P. Jackson, Jefferson Hospital, Roanoke, Va.★ V

WANTED—AT ONCE — EXPERIENCED female laboratory technician, capable of doing Wassermanns and blood chemistry, in addition to routine laboratory work; 50-bed private hospital in Alabama; salary $150 per month; full maintenance. Add. 3838 V, % AMA.

WANTED—EXPERT LABORATORY technicians and x-ray operators, male and female, for laboratory positions in all parts of the country; excellent opportunities. Write Aznoe's National Physicians' Exchange, 30 N. Michigan Ave., Chicago. V

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WANTED—GRADUATE FROM MANHATtan Eye, Ear, Nose and Throat Hospital, New York City, wants partnership, association or location; city of 25,000 or more; has had several years' experience general work; two years' postgraduate work. Add. 3747 H, % AMA.

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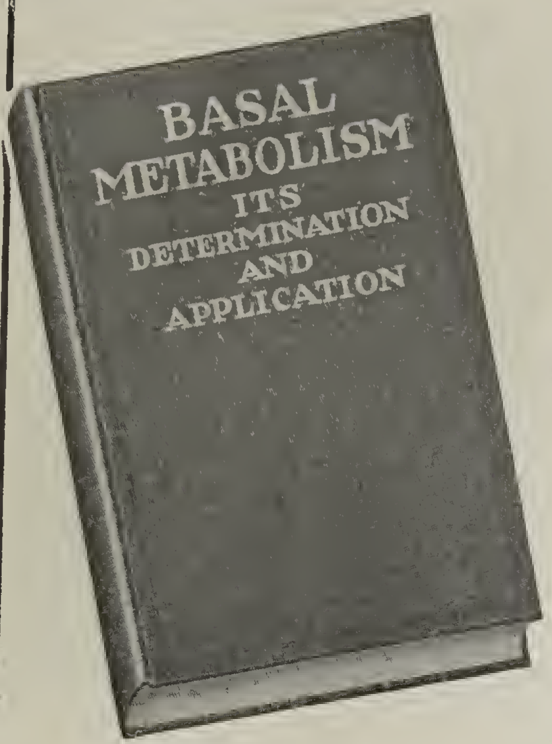

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(*Continued on next page*)

(Continued from preceding page)

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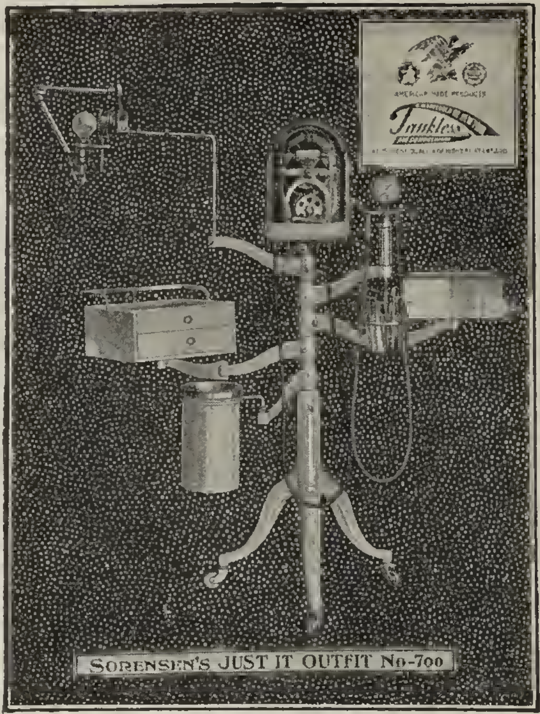

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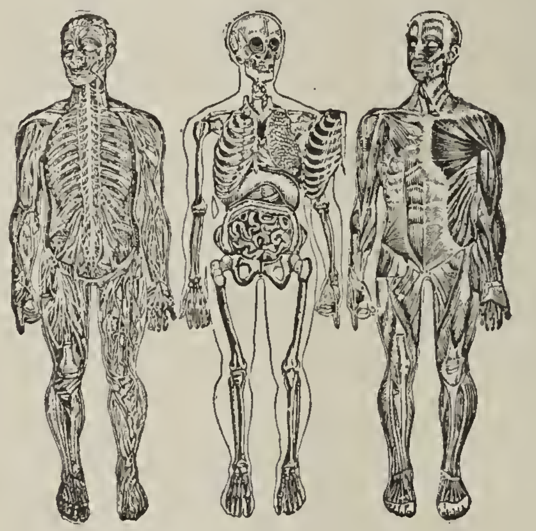

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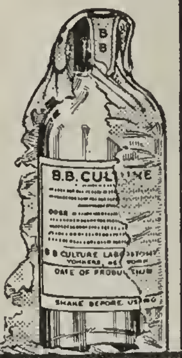

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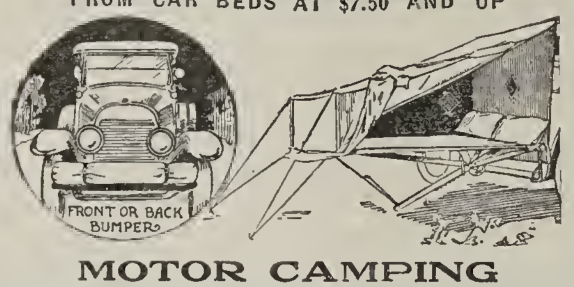

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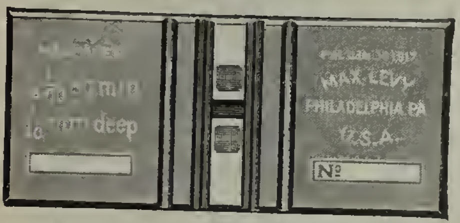

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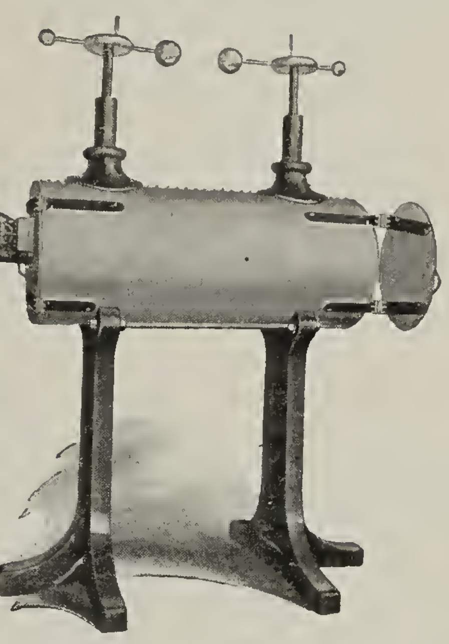

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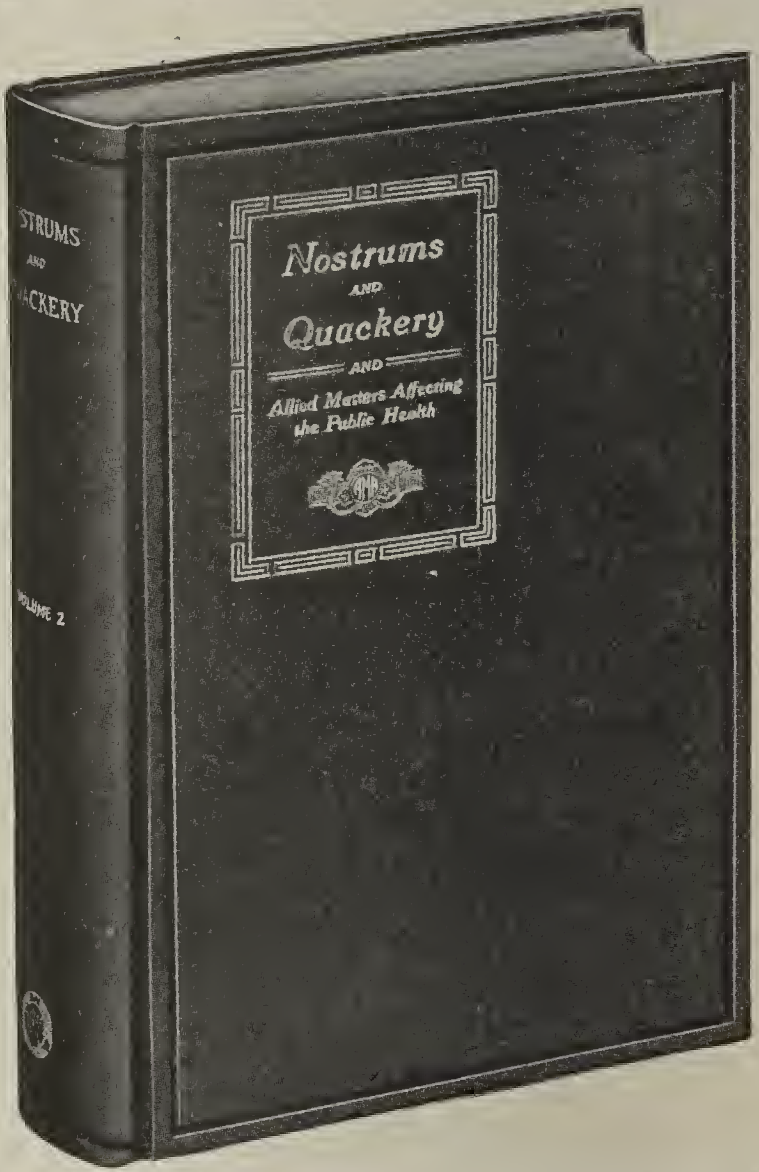

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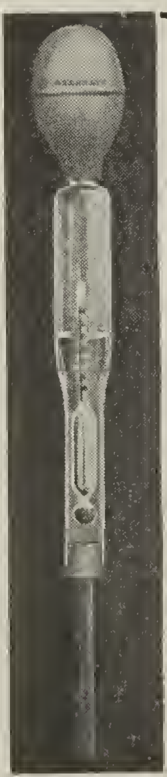

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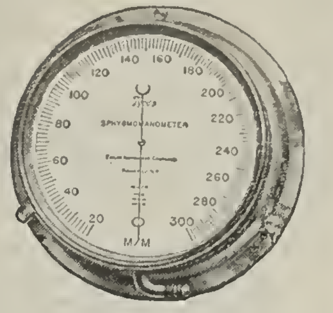

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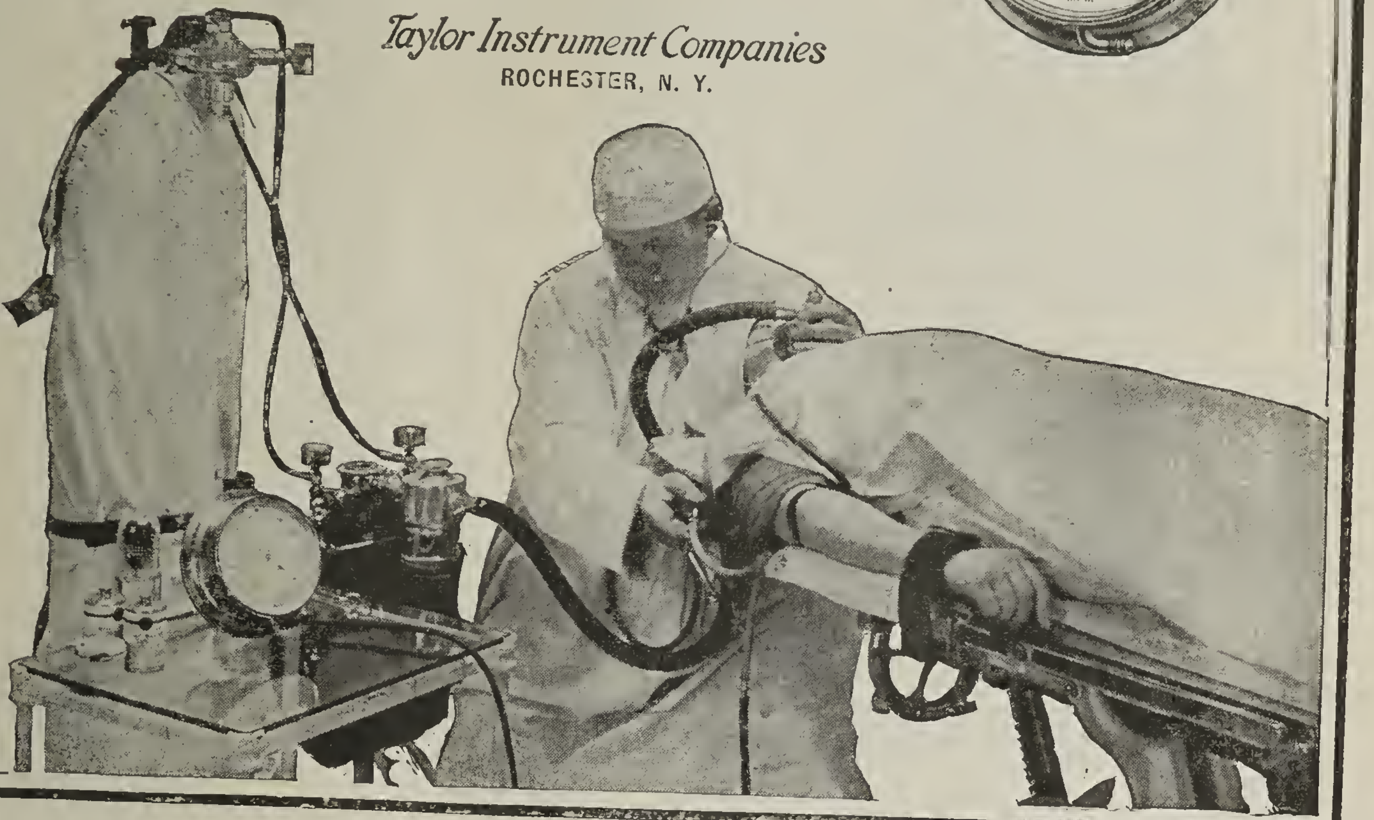

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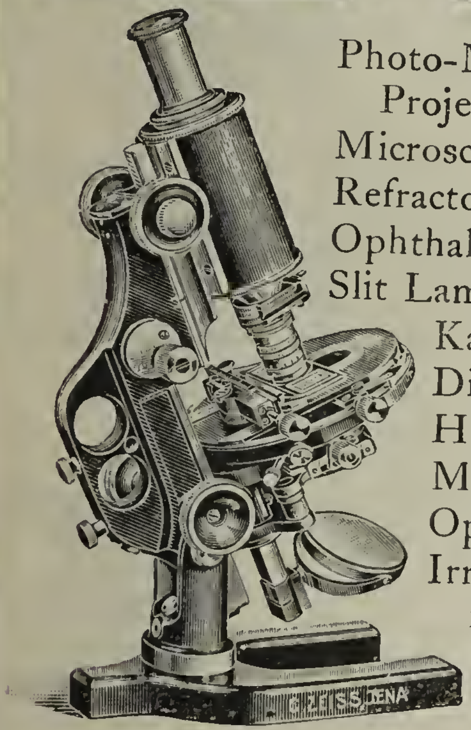

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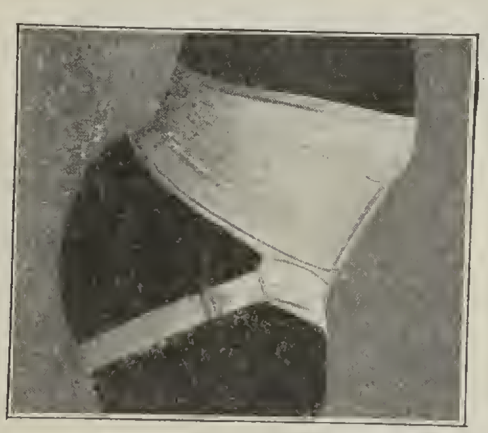

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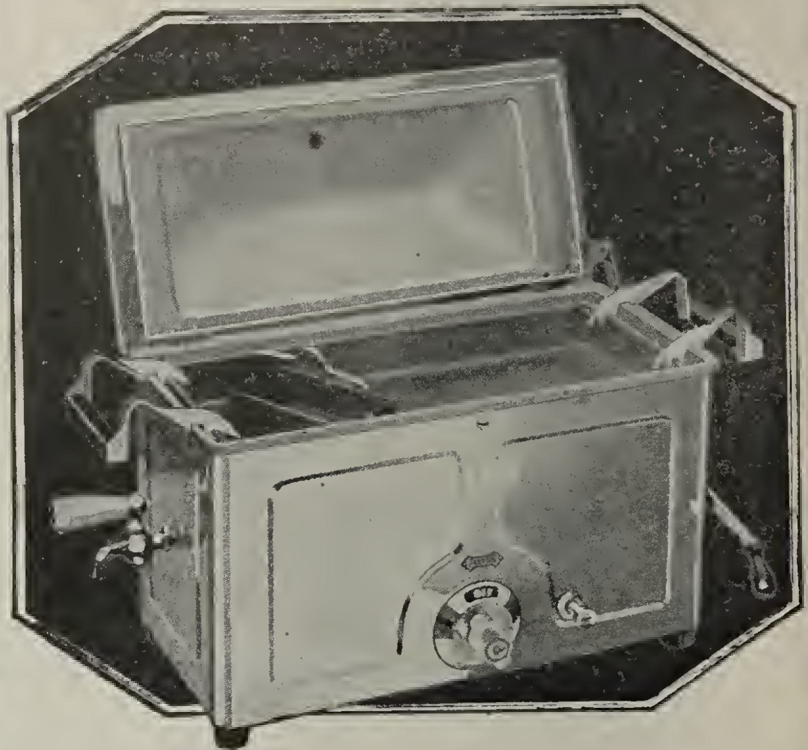

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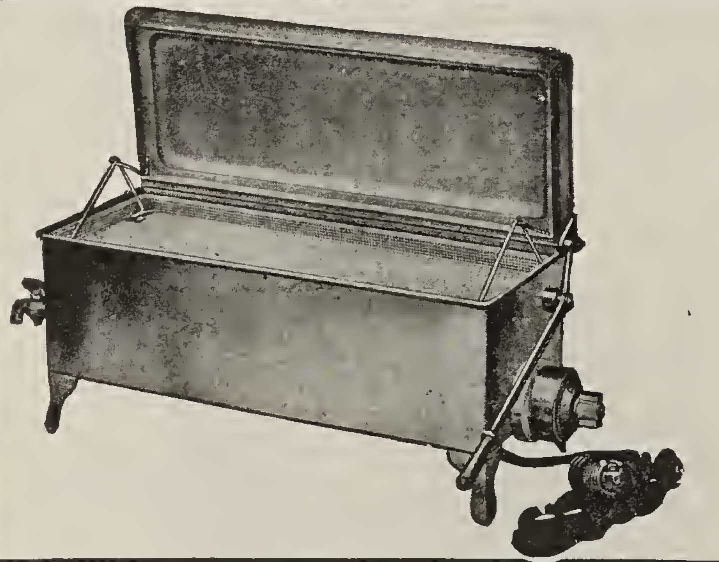

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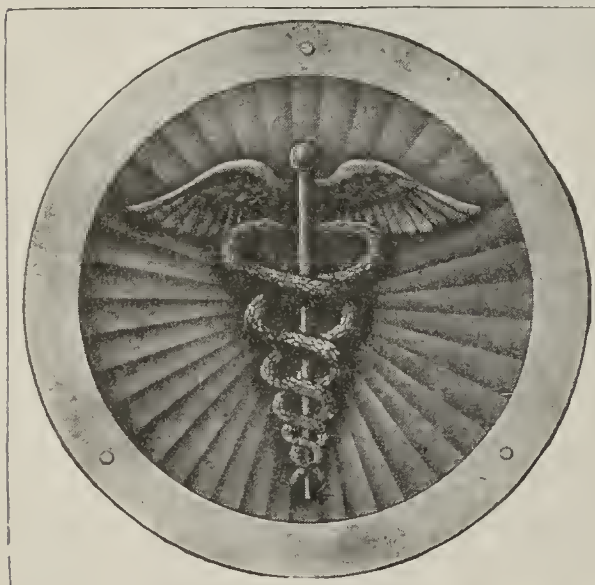

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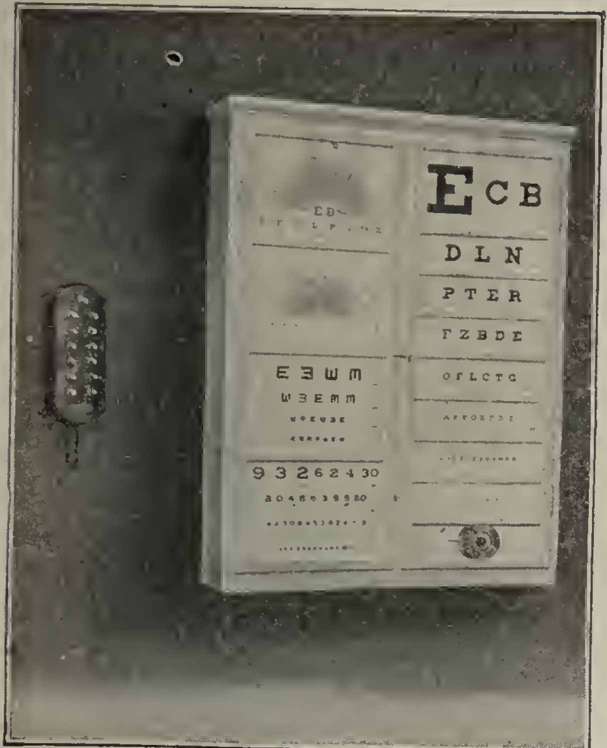

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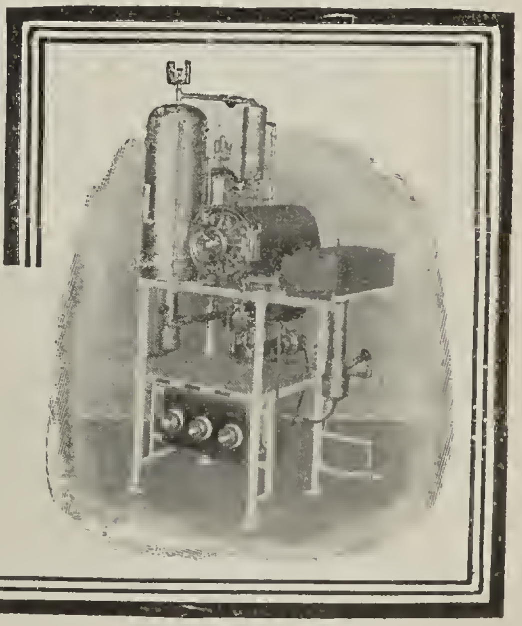

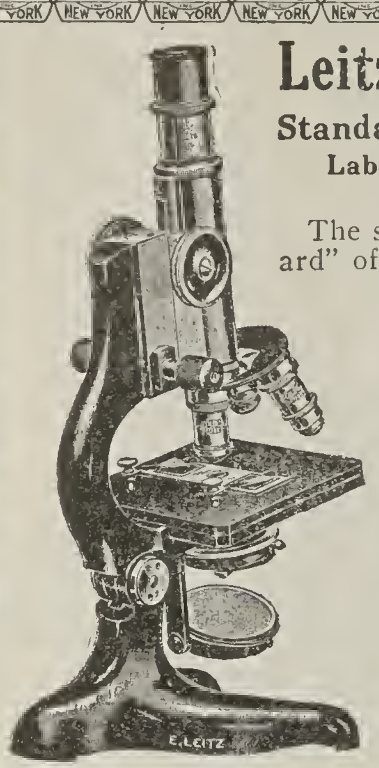

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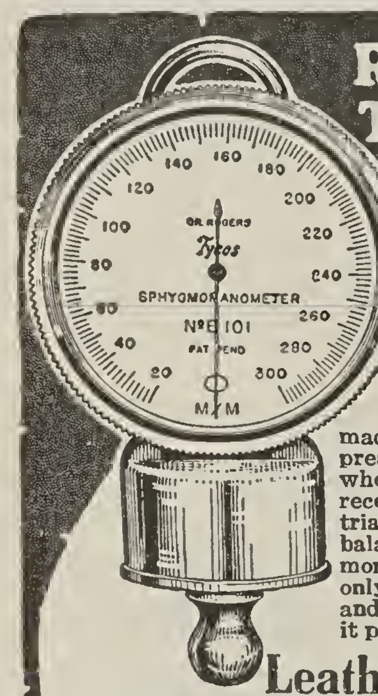

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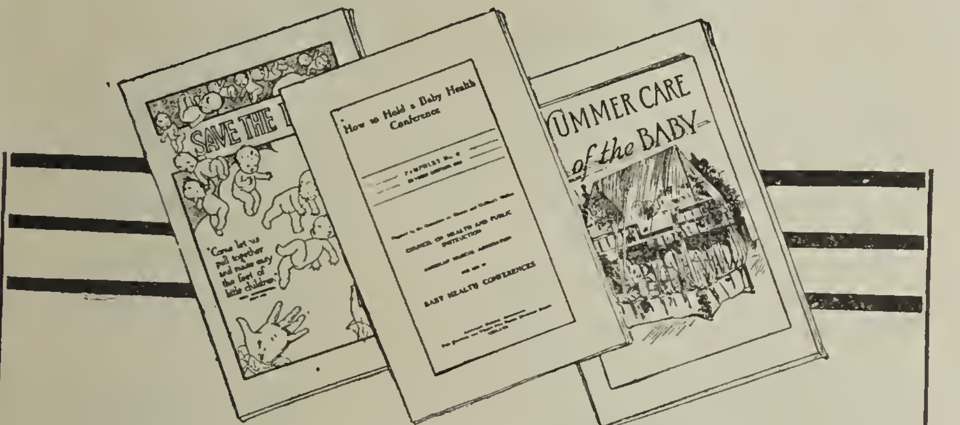
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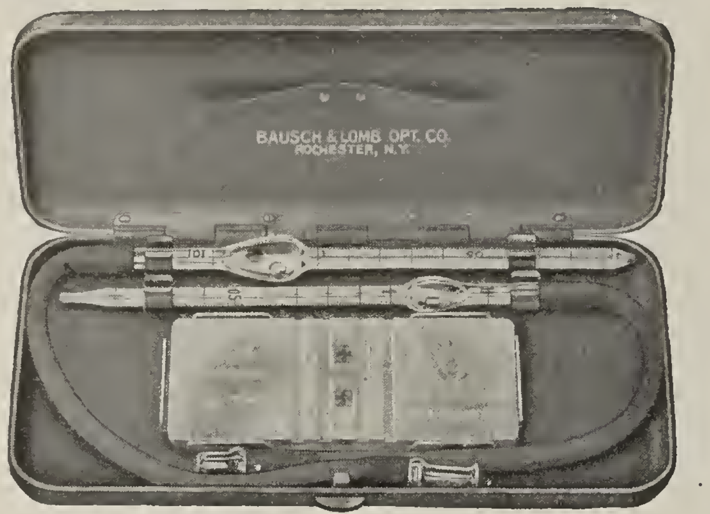

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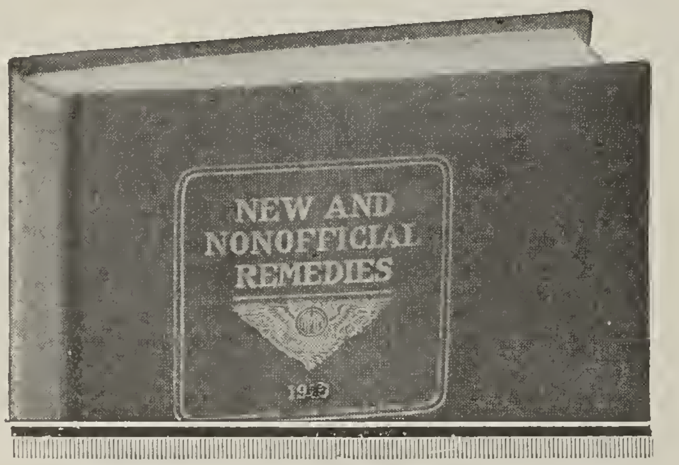

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